NEW TITLES

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BIOLOGY AND MEDICINE
New Horizons in Geriatric Medicine. Volume 1
Ahmet Turan Isik, M. Refik Mas, M. Akif Karan and George T. Grossberg (Department of Geriatric Medicine, Gulhane School of Medicine, Ankara, Turkey)
In series: Geriatrics, Gerontology and Elderly Issues
2013. 343 pp.
Hardcover: 978-1-62808-972-1. $175.00.
Old age is associated with a number of medico-social problems such as: hypertension, diabetes mellitus, thyroid disorders, osteoarthritis, tremor, pain, gait and balance impairment, incontinence, urinary tract infection, sarcopenia, osteoporosis, polypharmacy, pressure ulcers, sleeping problems, cardiocerebrovascular disorders, fluid and electrolyte disturbance, nutritional disorders, immunization and disease prevention rehabilitation and care. The management of these problems differs significantly between younger and older adults. All of these problems are evaluated in this book in two parts with the contributions of experienced clinicians and researchers. In addition, cellular aging, comprehensive geriatric assessments, and medicolegal and ethical principles in geriatric medicine are also evaluated. This book will be a valuable tool for all clinicians involved in the management of elderly people.

New Horizons in Geriatric Medicine. Volume 2
Ahmet Turan Isik, M. Refik Mas, M. Akif Karan and George T. Grossberg (Department of Geriatric Medicine, Gulhane School of Medicine, Ankara, Turkey)
In series: Geriatrics, Gerontology and Elderly Issues
Hardcover: 978-1-62808-976-9. $175.00.
e-book: 978-1-62808-979-0. $175.00.
Old age is associated with a number of medico-social problems such as: hypertension, diabetes mellitus, thyroid disorders, osteoarthritis, tremor, pain, gait and balance impairment, incontinence, urinary tract infection, sarcopenia, osteoporosis, polypharmacy, pressure ulcers, sleeping problems, cardiocerebrovascular disorders, fluid and electrolyte disturbance, nutritional disorders, immunization and disease prevention rehabilitation and care. The management of these problems differs significantly between younger and older adults. All of these problems are evaluated in this book in two parts with the contributions of experienced clinicians and researchers. In addition, cellular aging, comprehensive geriatric assessments, and medicolegal and ethical principles in geriatric medicine are also evaluated. This book will be a valuable tool for all clinicians involved in the management of elderly people.

Agriculture
Brassicaceae: Characterization, Functional Genomics and Health Benefits
Mingxia Lang (Department of Biochemistry, Kansas State University, Manhattan, KS, USA)
In series: Agriculture Issues and Policies
Hardcover: 978-1-62808-856-4. $150.00.
This book is believed to be the first collection of articles to summarize the most advanced information and studies of Brassicaceae, a special genus with vast species, which not only have tremendous human health beneficial compounds for dietary consumption, but also comprise the most metal hyperaccumulating species worldwide discovered to date with potential usage in phytoremediation of polluted soil, air and water. The seven carefully selected chapters are authored by renowned experts from across the globe and cover the diverse beneficial roles of brassica-derived compounds and their molecular mechanisms of chlorophyll degradation. It also includes the newly released Brassicas with great health benefits and high suitability for the fresh-cut and fifth range industries, the three-dimensional molecular structure prediction of the health-important BoSMT protein, and new discoveries on the molecular and physiology mechanisms of heavy metal hyper-accumulation and tolerance species in Brassicaceae. This book can be a useful reference book for scientists, teachers, students and others who are interested in the health benefits of brassica vegetables or their potential application in phytoremediation.

Anatomy and Physiology
Appetite: Regulation, Use of Stimulants and Cultural and Biological Influences
Julie Bienertova-Vasku
In series: Human Anatomy and Physiology
2014. 228 pp.
Hardcover: 978-1-63117-241-0. $150.00.
The primary function of appetite is to control adequate energy intake in order to meet an organism’s metabolic requirements. The interplay between hunger, appetite stimulation and food intake is tightly regulated by the central nervous system and conditioned by numerous inherently biological as well as acquired social and cultural phenomena. Appetite is closely linked to individual behavior, thereby affecting energy intake as well as qualitative food structure and represents a basis for possible therapeutic intervention in individuals with impaired appetite regulations. This book presents several perspectives on appetite regulation in humans and animal models. The importance of understanding altered appetite regulation in cancer is highlighted as well as the effects of exercise on appetite. Finally, this book also presents new research into the role of genetic variability in ghrelin in dietary composition.

Basic Biology and Current Understanding of Skeletal Muscle
Kunihiro Sakuma (Toyohashi University of Technology, Tenpaku-cho, Toyohashi, Japan)
In series: Muscular System - Anatomy, Functions and Injuries
In series: Human Anatomy and Physiology
Hardcover: 978-1-62808-367-5. $175.00.
Skeletal muscle is a highly plastic tissue that constitutes approximately thirty percent of total body mass and adapts rapidly to changing functional demands. Skeletal muscle is not only the generator of force production, but also plays a crucial role in whole body metabolism and energy consumption. In this book, leading experts in the area of exercise biochemistry and molecular biology in skeletal muscle provide an up-to-date view of the molecular basis of various adaptations of skeletal muscle, with emphasis on new biological concepts (muscle stem cells, muscle stereoidogenesis, etc.). This book deals with the recent intriguing role of heat shock protein (HSP), AMPK and reactive oxygen species (ROS) for muscle morphology, function and metabolism. Discussed also is the molecular mechanism for protein metabolism and therapeutic application for sarcopenia. The
A deeper understanding of the signal transduction and modification in skeletal muscle will develop new therapeutic strategies for preventing physical disability and increased risk of morbidity/mortality due to the loss of muscle mass.

Cataracts and Cataract Surgery: Types, Risk Factors, and Treatment Options

Didier Navarro

In series: Eye and Vision Research Developments


Hardcover: 978-1-62808-400-9. $95.00.
e-book: 978-1-62808-401-6. $95.00.

This book discusses the types, risk factors, treatment options and potential complications of cataracts and cataract surgery. Topics include the clinical techniques used to assess the visual and optical performance of intraocular lenses; the epidemiology and morphology of cataracts; a practical guide to the management of intraoperative floppy iris syndrome (IFIS); a comparison of safety and visual improvement of phacoemulsification with sutureless single-port 25-gauge vitrectomy versus phacoemulsification alone for eyes with extremely shallow anterior chamber; teaching and learning cataract surgery; and phacolytic.

Education in Anatomical Sciences

Paul Ganguly (College of Medicine, Alfaisal University, Riyadh, Kingdom of Saudi Arabia)

In series: Human Anatomy and Physiology


Hardcover: 978-1-62618-488-6. $150.00.

The discipline of anatomy has had a pivotal influence on the history of medicine as it serves almost as the language of medicine. This concept has not been changed till today, but the modalities that we use to understand the subject have been significantly changed. This book is unique in that the essential contents are put together allowing one to browse through anatomical knowledge on a daily basis. It should also satisfy anyone who believes that medical faculty must follow a system which is educationally sound. Developing an excellent anatomy curriculum, assessment system, and anatomy resource center are key to success that will allow us to address the question of “how do we teach anatomy?” If we have to continue teaching an important subject such as anatomy to medical students, we must be innovative in terms of our approach of teaching in the presence of decreased contact hours to fulfill the curricular need of more integration. This book will target medical educationists and students who may find it easier to develop concepts in gross anatomy, embryology, histology and neuroanatomy.

Since planning learning experiences, their implementation and student assessment, are closely related activities, care is taken to develop a process for clinically-oriented multiple choice questions in anatomy that satisfy the theme and objectives of anatomy. The issues related to laboratory activities have also been addressed so as to emphasize objective-structured practical examination that is integrated and clinically relevant during the early period of the medical curriculum. The students’ perception has been brought to our attention and given a great focus. This book for the first time addresses education in anatomy and provides a great resource for medical schools engaged in problem-based learning or integrated systems curriculums.

Extensor Tendons: Anatomy, Injuries and Surgical Repair and Rehabilitation

Julian Aristide

In series: Muscular System - Anatomy, Functions and Injuries


Softcover: 978-1-63117-394-3. $72.00.
e-book: 978-1-63117-395-0. $72.00.

A good knowledge of descriptive, surgical and functional anatomy and biomechanics of the extensor tendons of the hand is fundamental for adequate surgical and rehabilitation management of their lesions. Extensor tendons are immediately localized under skin which makes them vulnerable to trauma. They are divided into extrinsic and intrinsic systems with complicated anatomy and biomechanics. This book examines different effective rehabilitation strategies to treat and repair tendons as well as discussing the anatomy and biomechanics of extensor tendons.

Gait Biometrics: Basic Patterns, Role of Neurological Disorders and Effects of Physical Activity

Li Li and Matthew Holmes (Department of Health and Kinesiology, Georgia Southern University, Statesboro, GA, USA)

In series: Physiology - Laboratory and Clinical Research


Hardcover: 978-1-62948-381-8. $150.00.

This book discusses gait, the control of gait and how different pathological conditions may affect gait, with a unique application of a gait study reviewed at the end. We first discuss methodology issues related to gait quantification and interpretations of different gait-related measures and their theoretical relevancy and clinical applications. The effects of different pathological conditions on gait were then discussed, using diabetic peripheral neuropathy, Parkinson’s disease, concussions and lower back pain as examples. A current understanding of how anatomical alternation, central nervous system lesions or the loss of a limb affects gait have been reviewed in two different chapters. Postural control of gait has been examined from both central and peripheral perspectives, while stationary and while walking. The neuromuscular system and how it helps to control an inherently unstable postural system is also discussed, as well as the introduction of the common theories of postural control during standing and walking. The last chapter of the book introduces a novel use of gait studies – gait biometrics were used as a unique identification of any individual based upon their specific characteristics. A person’s gait may uniquely identify them and be used to help control access or in surveillance. The book summarizes our current understanding of gait and gait studies. It can be used for college courses, post-graduate studies, as a reference to clinicians or anyone else who is interested in the human gait and gait studies.

Muscle Strength Development, Assessment and Role in Disease

Cleber Ferraresi and Nivaldo Antonio Parizotto (Federal University of São Carlos, Department of Physical Therapy, São Carlos (SP), Brazil)

In series: Physiology - Laboratory and Clinical Research

In series: Muscular System - Anatomy, Functions and Injuries


Hardcover: 978-1-62948-095-4. $150.00.

Muscle function has been used to measure the healthy and functional capacity of patients, sportsmen and athletes. The knowledge about muscle function and how to properly evaluate it can be determinant factors for the success of therapies during the treatment of many diseases, as well as improving muscle performance. Handgrip strength is a measure of maximum voluntary force of the hand. It has been reliable, valid and an objective parameter to evaluate overall muscular strength, and for this reason, it has been used as a predictor of physical disability. There are several techniques to treat and rehabilitate muscle function such as the proprioceptive neuromuscular facilitation
been described. This book is of great interest among combustiologists, of elimination of different deformations, localized in the foot area, have been interpreted in detail and in consistency. Particular attention is paid to their consequences have been analyzed in this book. The problems and scientific and practical achievements in treatment of foot burns and associated with various serious diseases, such as mild to severe haemolytic anaemia, neurological disorders, mental retardation, behavioural aberrations, and neurological symptoms. These aspects are also discussed and summarized in this volume.

**Prospective Study of Patients with Foot Burns in Samarkand**

**Babur M. Shakirov (Samarkand State Medical Institute, Burn Department of RSCUMA, Samarkand, Uzbekis)**

In series: *Physiology - Laboratory and Clinical Research* 2013. 225 pp.

Hardcover: 978-1-62257-024-9. $150.00.


The basis of practical work of Samarkand Inter-regional burn Centre and Burn department of RSCUMA and literary data, regulations of scientific and practical achievements in treatment of foot burns and their consequences have been analyzed in this book. The problems and tasks in the field of scientific research and treatment of foot burns have been interpreted in detail and in consistency. Particular attention is paid to necrectomy, application of biological coverings, autodermoplasty. Treatment of thermic injuries of joints and bones, clinic and principles of elimination of different deformations, localized in the foot area, have been described. This book is of great interest among combustiologists, traumatologists, orthopedists and surgeons, performing reconstructive surgery.

**Regulation of Fatigue in Exercise**

**Frank E. Marino (Charles Sturt University, Bathurst, Australia)**

In series: *Physiology - Laboratory and Clinical Research* 2013. 205 pp.

Hardcover: 978-1-62209-334-5. $195.00.

Softcover: 978-1-62081-810-7. $195.00.


This book draws together some of the new and developing ideas in the study of fatigue. The past fifteen years have witnessed a remarkable change in the understanding of the “limitations” to human performance and the role that fatigue might play in such limitations. As such, this book is a compilation of ideas proposed by leading researchers in the area of human physical performance.

**Spermatozoa: Biology, Motility and Function and Chromosomal Abnormalities**

**Brenda T. Erickson**


Hardcover: 978-1-63117-020-1. $150.00.


In this book the authors present current research in the study of spermatozoa. This compilation focuses on the biology, motility and function and chromosomal abnormalities of spermatozoa. Topics discussed are the epigenetic mechanisms in mammalian male germ line; biological characteristics of sperm in two oyster species; sub-cellular dynamics occurring during capacitation of mammalian spermatozoa; new perspectives on the study of prion and prion-like proteins; meiotic segregation studies in spermatozoa of males carrying a structural chromosome abnormality; testicular germ cell apoptosis during orchitis; the influence of leukocytes in semen parameters; and spermatozoa motility and morphology.

**Trabecular and Cortical Bone: Morphology, Biomechanics and Clinical Implications**

**Varsha Subramaniam and Manish Bhatnagar**


Hardcover: 978-1-62808-766-6. $150.00.


In this book, the authors present topical research in the study of the morphology, biomechanics and clinical implications of trabecular and cortical bone. Topics discussed include trabecular bone biomechanics and morphology; cortical bone as an enduring depot of bone seeking contaminants and the evaluation of cortical bone resorption rate on the basis of a contaminant (90SR) measurement in humans; evaluation of apparent stress and strain at fracture of human trabecular bone under quasi-static compression load using micro-CT finite elements simulation; application of computational modeling to predict the effect of exercise on whole bone strength; advancements in cortical bone imaging; morphology of the pelvis (acetabulum) and femur; the release kinetics of bone morphogenetic proteins from demineralized cortical bone grafts; and preservation of cortical bone in oral and maxillofacial surgery procedures.
Troponin: Regulator of Muscle Contraction
J.-P. Jin (Department of Physiology, Wayne State University School of Medicine, Detroit, MI)
In series: Protein Biochemistry, Synthesis, Structure and Cellular Functions
2013. 308 pp.
Hardcover: 978-1-62948-320-7. $175.00.
Muscle contraction is a vital biological activity. In three centuries of scientific pursuit since Leeuwenhoek and Croone observed the cellular structure of striated muscles, the knowledge gained from extensive studies has formed a detailed understanding of muscle function at the molecular and atomic level. Contraction of vertebrate skeletal and cardiac muscles are controlled by Ca2+ signaling through the troponin complex in the sarcomeres, which are contractile machinery consisting of interactive myofilaments. Since the discovery and biochemical characterization of troponin and its three subunit proteins over four decades ago, the understanding of its structure and genetic diversity to post-translational modification and pathological mutations have comprehensively established the molecular structure of troponin and the mechanistic details of its function in the regulation of muscle contractions. The advanced knowledge from troponin research has contributed significantly to the current understanding of cardiac and skeletal muscle function in health and diseases. It is a timely necessity to comprehensively, yet concisely, summarize the current knowledge and look toward the future direction of troponin research. Contributions to this book have been made by leading experts in troponin studies, and its contents include chapters that describe milestone discoveries and recent research advances. This wonderful collection provides a unique reference for students and research investigators who have an interest in muscles, protein structure-function relationships and molecular evolution, as well as cardiac function and myopathies. Readers will not only obtain an in-depth state-of-the-science understanding of troponin structure and function, they will also be exposed to visions that will lead them toward future investigations and the advancement of troponin research.

Ureters: Anatomy, Physiology and Disorders
Richard A. Santucci and Mang Chen (Detroit Medical Center Harper Professional Building, Detroit, MI, USA)
In series: Human Anatomy and Physiology
In series: Renal and Urologic Disorders
2013. 139 pp.
Softcover: 978-1-62808-874-8. $72.00.
This book is a cumulative work that covers ureteral anatomy, physiology, and disorders. It aims to highlight the ureters by bringing together national and international experts in their respective fields to discuss ureteral pathology and management of ureteral disease. Chapters discussing ureteral trauma, injury, obstruction, stones, cancers, surgeries, and tissue engineering will enhance patient care and introduce us to the future of ureteral surgery. At the very least, this book will improve overall medical knowledge on these often ignored but vital urinary structures.

ANIMAL SCIENCE

Bats: Phylogeny and Evolutionary Insights, Conservation Strategies and Role in Disease Transmission
Gwynne A. Geyer
In series: Animal Science, Issues and Professions
Softcover: 978-1-62948-224-8. $69.00.
In this book, the authors present current research in the study of the phylogeny and evolutionary insights, conservation strategies and role in disease transmission in bats. Topics discussed in this compilation include the role of bats in lyssavirus epidemiology; implications for ecological cognitive psychology of human-bat-interactions; molecular phylogeography and conservation of Chinese Bats; and effects of climate change on the world’s northernmost bat population.

Birds: Evolution and Behavior, Breeding Strategies, Migration and Spread of Disease
Lucas Ruiz and Franco Iglesias
In series: Birds - Evolution, Behavior and Ecology
2013. 189 pp.
Hardcover: 978-1-62948-104-3. $120.00.
e-book: 978-1-62948-123-4. $120.00.
In this book, the authors present current research in the study of the evolution and behavior, breeding strategies, migration and spread of disease within the bird species. Topics discussed in this compilation include sex determination in birds; structure and function of the avian respiratory system, with discussion regarding its predisposition to injury by particulates and pathogenic microorganisms; distribution and dispersion of coccidia in wild passerines of the Americas; an animal geography of the dominant urban avian scavenger in contrasting case studies; recent infectious diseases or their responsible agents recorded from Japanese wild birds; ticks on Brazilian birds; an overview of recent parasitic diseases due to helminths and arthropods recorded from wild birds, with special reference to conservation medical cases from the Wild Animal Medical Center of Rakuno Gakuen University in Japan; environmental factors that affect urban avian communities; and the impact of landscape configuration and competitors on hooded vulture necrosytes monarchus terminnick 1823 in Southern Ghana.

Cancerous Tumor Life: Biological and Physical Aspects
Miroslaw Kozlowski and Sultan Tarlaci (Warsaw University, Warsaw, Poland)
In series: Cancer Etiology, Diagnosis and Treatments
2013. 194 pp.
Hardcover: 978-1-62081-411-6. $150.00.
In this book, the authors study the mutual interaction of cancer and its host body. The authors present the point of view that this interaction is mediated by human consciousness. Although the term cancer refers to uncontrolled and uncontrollable cellular growth, a basal cell carcinoma of the skin is quite different from adenocarcinoma of the lung, prostate, or breast, brain tumors, lymphomas, leukemias, and other malignancies. These all differ markedly with respect to growth rates, metastatic tendencies, and sensitivity to neuroendocrine or immune system influences, particularly those that might be modulated by stress. There are critical concerns when it comes to determining exactly how long a cancer has been present. If a lump in the breast is found to be malignant, when did the cancer start? A month, six months, or years before clinical detection? Such information would be crucial to establish any temporal relationship with antecedent.

Dogs: Domestication History, Behavior and Common Health Problems
Katherine M. Cohen and Lucas R. Diaz
In series: Animal Science, Issues and Professions
2013. 143 pp.
Softcover: 978-1-62808-530-3. $72.00.
e-book: 978-1-62808-531-0. $72.00.
In this book the authors discuss the domestication history, behavior and common health problems of dogs. Topics include the epidemiological trends and neuropathological manifestations of canine distemper virus; behavior and welfare of dogs; marketing and the domestication of dogs; responsible ownership and behaviors; advances in the canine coproparasitological examination; and an examination of ovariohysterectomy (spaying) and healthy longevity in dogs.

Invertebrates: Classification, Evolution and Biodiversity
Rafael Riosmena-Rodriguez (Universidad Autónoma de Baja California Sur, Mexico)
In series: Animal Science, Issues and Professions
Hardcover: 978-1-62618-789-4. $150.00.
Invertebrates are common in marine and freshwater ecosystems and key elements in processes such as trophic dynamics and nutrient recycling. At the present time we have a limited knowledge of their diversity and how they have evolved over time. A key element of study in this book, are the current efforts to produce revised classification systems which include modern approaches and an update of the current taxonomical system. Another topic discussed in great detail is the relation of invertebrates and their contribution to biodiversity in terms of unique species per habitat. “Invertebrates: Classification, Evolution and Biodiversity” represents an effort to show the relevance of this unique group of living species and the current efforts to better understand them. This book presents a well balanced set of chapters in which a detailed review of the classification of poorly known groups (such as freshwater arthropods, oligochaetes, and marine ascidians) are studied. Another set of chapters are devoted to understanding the associated biodiversity of invertebrates in marine ecosystems and how they respond to environmental variables. Biogeographical comparisons and evolutionary fractal analysis close the contributions and provide a high standard of knowledge towards the goal of this book. This book also discusses the role of invertebrates in coastal systems and provides key investigation for undergraduate and graduate students and researchers and professional researchers who are interested in ecology and evolution.

Modern Veterinary Practice Management
Margit Gabrielle Muller (Abu Dhabi Falcon Hospital, Abu Dhabi United Arab Emirates)
In series: Animal Science, Issues and Professions
Hardcover: 978-1-61942-002-1. $140.00.
The classical veterinary education revolves around the anatomy, physiology, diseases and their treatment of the bovine, avian, equine, swine species and assorted small animals. This book discusses the reasoning of both the veterinary profession in its medical care, innovation and scientific logic and also the tools and laws of the business world which cannot be ignored, if a veterinary practice shall survive. It is the reasonable synthesis of both, which eventually leads to profound business success and a medical reputation of excellence.

Rehabilitating the Athletic Horse
Hank W. Jann and Bud Fackelman (Oklahoma State University College of Veterinary Medicine Center for Veterinary Clinical Sciences Stillwater, OK)
In series: Veterinary Sciences and Medicine
Hardcover: 978-1-60876-672-7. $98.00.
This is a book about the restitution of soundness in horses which have been trained under seemingly ideal conditions, and nonetheless suffered injury. Most of the book’s authors have had direct experience in performing medical and surgical interventions designed to correct athletic injuries. Most of the authors have also been directly involved in the conditioning techniques designed to not only render their own charges ready for competition, but also ready to win. The book suggests how things can “go wrong” even with man’s best-laid plans. The text then describes the path back from athletic injuries based upon which is known about equine anatomy and physiology, and draws upon experience in human rehabilitation where applicable.

Reptiles in Research: Investigations of Ecology, Physiology, and Behavior from Desert to Sea
William I. Lutterschmidt (Sam Houston State University, Department of Biological Sciences, Huntsville, TX, USA)
In series: Animal Science, Issues and Professions
Hardcover: 978-1-62808-599-0. $230.00.
Reptiles demonstrate remarkable diversity across the landscape. From inland habitats of deserts and grasslands to coastal plains and oceans, the unique adaptations and life histories of reptiles have been shaped by a suite of abiotic and biotic factors. It is the interface between the organism and its environment that present biologists with the opportunity to explore how reptiles behaviorally and physiologically respond to their environments and to determine what factors govern their ecology. “Reptiles in Research: Investigations of Ecology, Physiology, and Behavior from Desert to Sea” will capture the interests of all readers with a text that is foundational for the novice herpetologist, while informative for beginning students and seasoned research scientists. This book offers its readers a glimpse into the passions of scientists who find reptiles fascinating creatures of study. You will see how reptiles serve as organizational models that continue to advance our knowledge and understanding of complex biological processes and systems. Dr. William I. Lutterschmidt (Professor of Physiological Ecology) has invited top researchers from around the world to share their personal research interests and illustrate how
environment influences the ecology, physiology, and behavior of reptiles. This book will introduce a diversity of research fields and reptilian species, from how web-footed geckos move in desert sands to how sea snakes cope physiologically with high salinity. Topics include invasive species, urban ecology, mathematical simulation, sexual selection, hybridization and gene flow, chemical ecology, neurobiology, spatial ecology, conservation biology, biodiversity, immunology, and molecular biology.

The Equine Tendon in Health and Disease

Henry Jann (College of Veterinary Medicine, Oklahoma State University, Stillwater, OK, USA)

In series: Animal Science, Issues and Professions


Hardcover: 978-1-62808-048-3. $150.00.

This book is designed to provide information on all aspects of clinical management of tendon problems in horses. The chapters cover the spectrum of understanding structure and function, diagnostic modalities, treatment options, rehabilitation strategies, etiology of injury, and prevention of tendon injury. All authors have vast clinical experience and are among the most qualified in their respective areas of expertise. It is the editor’s goal to provide the reader with a state of the art resource that will aid in dealing with tendon problems. This includes diagnosing and treating the acute injury to assessment of healing and formulating a rehabilitation strategy. All of these aspects are important if an optimal outcome is to be achieved because treating tendon injuries is not a simple exercise. Each injury is unique and each horse is unique. No one treatment or rehabilitation strategy can be universally applied. All injuries must be carefully diagnosed and monitored throughout the rehabilitation process. This book is a guide for the prevention, diagnosis, and treatment of tendon injuries that is practical, reliable, and easily understood. It will hopefully allow veterinarians to deal with tendon injuries with more confidence and a higher quality of post injury return to function.

BIOCHEMISTRY

Acetic Acids: Chemical Properties, Production and Applications

Angelo Basile (Technology of the National Research Council, Rende, Italy)

In series: Biochemistry Research Trends


Hardcover: 978-1-62948-217-0. $150.00.

This book provides some important aspects of acetic acid, especially those concerning its recent use and applications, including the fermentation process of ethanol with acetic acid bacteria, its use in meat preservation, medicinal effects of acetic acid, as well as health and safety considerations. Other aspects include the properties of auxins, an important category of acetic acids influencing a number of physiological and developmental processes in plants, the characterization of the synthesis, structural and vibrational properties of three quinoline acetic acid derivatives with potential biological activities and the use of acetic acid in food preparation/production and the coproduction of vinegar and electricity through fermentation.

Advances in Liposomes Research

Lauren Finney

In series: Biochemistry Research Trends


Hardcover: 978-1-63117-074-4. $120.00.
e-book: 978-1-63117-077-5. $120.00.

In this book the authors present current research in the study of liposomes. Topics discuss in this compilation include liposome mediated malaria vaccine development; liposomal delivery of antimicrobial agents in advances in liposome research; trends on microfluidic liposome production through hydrodynamic flow-focusing and microdroplet techniques for gene delivery applications; liposomes as important drug carriers in cancer therapy; liposome application in the veterinary field; and design of liposomes with a pH-sensitive fluorescent dye and gramicidin channels for immune-sensing.

Biological Activity of Natural Products

Jaroslava Švarc-Gajić (Department for Applied and Engineering Chemistry, Faculty of Technology, University of Novi Sad, Novi Sad, Serbia)

In series: Biochemistry Research Trends


Hardcover: 978-1-62808-926-4. $52.00.

Many thousands of years ago, humans were introduced to the toxicants of minerals and plants of microbial origin, and since that time, natural bioactive compounds have been used in traditional medicine for treating different health conditions, but also as aphrodisiacs and as a means of suicide or murder. Modern medicine acknowledges natural bioactive compounds as valuable medicinal sources for both diagnostic and curative purposes. Natural compounds serve as templates for the production of new drugs with improved pharmacological properties. This book explains the term bioactivity and deals with the bioactive compounds of plants, animals, microbial and marine origin. Their use by traditional medicinal approach, as well as by modern medicine is further elaborated. Both beneficial and toxic properties of different chemical classes, including alkaloids, peptides, terpenoids, bioactive amines etc., are described. Their isolation at the industrial scale is presented through several technological processes which are explained in detail for several compound classes. The research explains how natural sources can be exploited my modern and traditional medicine, and presents the risks and benefits associated with their use. In addition, a new approach to studying bioactivity, that includes computational modeling and softwares for in silico description and prediction, is explained. A chemometric approach to studying bioactivity is demonstrated through several models given for some natural bioactive compounds and their derivatives.

Calcium Phosphate: Structure, Synthesis, Properties, and Applications

Robert B. Heimann (Am Stadtpark 2A, Görlitz, Germany)

In series: Biochemistry Research Trends


Hardcover: 978-1-62257-299-1. $350.00.

Calcium phosphates are key materials to sustain life on Earth as constituent of the gravity-defying bony skeletons of all vertebrates as well as the dentine and enamel materials of teeth. This book contains accounts on the historical development of the scientific knowledge gained on calcium orthophosphates, the latest information on the structure of carbonate-bearing hydroxyapatite, the role played by small amounts of molecular water residing in synthetic hydroxyapatite and bone mineral, as well as the nature of oxyhydroxyapatite and oxyapatite as intermediates during dehydroxylation of hydroxyapatite, pertinent information to unravel the complex processes relevant for plasma-sprayed calcium phosphate coatings on endoprosthetic implants. This book is recommended to industrial and academic professionals in the fields of medical technology, orthopedy, dentistry, biology, materials science, chemistry, environmental engineering, and mineralogy.
Creatine: Biosynthesis, Therapeutic Uses and Physiological Effects of Supplementation
Fernando D'Cruz and Victor Ribeiro
In series: Biochemistry Research Trends
Hardcover: 978-1-62948-305-4. $95.00.
e-book: 978-1-62948-306-1. $95.00.
Creatine is an organic acid that contributes to the energy supply to the skeletal muscle. The basic substrates for creatine biosynthesis in the human body are semi-essential amino acids L-arginine, glycine and methionine. In this book, the authors discuss the biosynthesis, therapeutic uses and physiological effects of creatine supplementation. Topics include the role of creatine in the pathophysiology of depression and the possible mechanisms underlying its antidepressant effect; creatine treatment and positive effects on muscle performance, muscle mass gain, and the persistence and improvement of the quality of life in patients with chronic diseases; muscle ergogenic effects of creatine supplementation in resistance exercise training; experimental evidence that creatine supplementation during pregnancy is protective for the neonate; and creatine metabolism and role in sports physiology.

Fatty Acids: Types, Roles and Health Effects
Grace Chen (Crop Improvement and Utilization, Albany, California)
In series: Biochemistry Research Trends
Hardcover: 978-1-61324-704-4. $140.00.
Softcover: 978-1-62948-014-5. $69.00.
e-book: 978-1-61324-820-1. $140.00.
In this book, the authors present topical research from across the globe in the study of the types, roles and health effects of fatty acids. Topics discussed include the chemical structure and classification of fatty acids; n-3 polyunsaturated fatty acids in brain resistance to aging; the role of dietary fatty acids for developmental and disease states in domestic animals; the effects of fatty acid synthase on fatty acids biogenesis in metabolic syndrome and lipotoxicity on human pancreatic beta-cells.

Fungicides: Classification, Role in Disease Management and Toxicity Effects
Miguel N. Wheeler and Bradley R. Johnston
In series: Biochemistry Research Trends
Softcover: 978-1-62948-043-5. $72.00.
Fungicides are chemical agents that inhibit or eliminate mycelial growth or fungal spores. The chemical, physical, and biological characteristics of a fungicide determines its suitability for control of a determined disease. In this book, the authors present current research in the study of the classification, role in disease management and toxicity effects of fungicides. Topics discussed in this compilation include plant-derived biofungicides; tricyclazole and azoxystrobin in rice blast management; fungicides and their role in disease management; classification of fungicides; and effective fungicides for cereal crops protection against toxigenic fungi causing fusarium head blight.

Inositol: Synthesis, Functions and Clinical Implications
Henrique Rocha and Marina Cardoso
In series: Biochemistry Research Trends
Hardcover: 978-1-62808-520-4. $150.00.
e-book: 978-1-62808-521-1. $150.00.
In this book, the authors present topical research in the study of the synthesis, functions and clinical implications of inositol. Topics discussed include hypoxia and angiogenesis related myo-inositol phosphates; inositol derivatives in mycobacterium tuberculosis; inositol and epilepsy; the contribution of inositol trisphosphate signaling to cardiac pathologies; the role of inositol 1,4,5-triphosphate receptor in hepatorenal syndrome; the pathophysiological significance of inositol phosphates (IP) in Alzheimer’s and bipolar disorder; design and synthesis of biotinylated inositol phosphates; the health benefits of inositol and inositol hexaphosphate; and the cellular functions of inositol.

Kaempferol: Chemistry, Natural Occurrences and Health Benefits
Garion Villers and Yves Fougeré
In series: Biochemistry Research Trends
Kaempferol is a flavonol that is relatively abundant in various plants and some edible berries. These compounds have antioxidative, anti-inflammatory, anti hypertensive, lipolytic and anti-cancer effects. In this book, the authors discuss the chemistry, natural occurrences and health benefits of kaempferol. Topics include the effect of cyclodextrins complexation on the properties of kaempferol; kaempferitrin and kaempferol as nutraceutical compounds contributing to glucose homeostasis by acting at multiple biological sites; distribution of kaempferol glycosides and their function in plants; analytical approaches for kaempferol determination; chemoprotective effects of kaempferol in colorectal tumorigenesis; multipotent flavonoid kaempferol as molecular targets and mechanism of action in nanotechnology applications in cancer and human health; metal complexes of kaempferol and their speciation in human plasma; the action of kaempferol on oral cavity cancer and airway secretion; kaempferol as it regulates intestinal tight junction permeability; and identification of kaempferol in historical textiles.

Lactose: Structure, Food Industry Applications and Role in Disorders
David Green and Emma Lee
In series: Biochemistry Research Trends
2013. 163 pp.
Hardcover: 978-1-62808-198-5. $95.00.
Lactose is a disaccharide which is the main carbohydrate present in the milk of most mammals, including humans. In this book, the authors present current research in the study of the structure, food industry applications and role in disorders of lactose. Topics include the microbial transformation of lactose and the potential of B-galactosidases for probiotic and prebiotic purposes; the evolution and spread of the dominant genetic trait responsible for continued adult digestion of lactose; whey lactose fermentation by kefir immobilized on agro-industrial wastes; the tableting properties of crystalline and amorphous lactoses and their application in the production of pharmaceutical compacts; and lactose and its influence in the diffusion of divalent metal chlorides.

Metabolic Aspects of Macronutrients
Mostafa I. Waly (Department of Food Science and Nutrition, CAMS, Sultan Qaboos University, Muscat, Oman)
In series: Biochemistry Research Trends
In series: Food Science and Technology
2013. 121 pp.
Softcover: 978-1-62808-870-0. $52.00.
This book is designed and formatted for an undergraduate student level and fits with the curriculum of biochemistry courses in all medical universities throughout the world. This book represents educational material which will provide students with a simple understanding of basic concepts of the macronutrient metabolism, biochemical events of macronutrients inside human cells, and cellular regulation of different metabolic pathways. This textbook provides insight into the nutritional biochemistry of macronutrients (carbohydrates, fat and protein) and their metabolic fate. The book covers basic concepts of digestion and absorption of three essential nutrients and their utilization by human cells in anabolic and catabolic pathways. The book is designed to link basic biochemistry to metabolism with a specific reference to the enzymatic, hormonal regulation and integrated metabolic pathways. Special attention was given to the central role of glucose in controlling energy production and its relevance to enzyme activation and inhibition. The major pathways that regulate carbohydrates, fat and protein metabolites in different organs are discussed in correlation to the metabolic fate of each nutrient and the cellular responses to different hormones. The book provides a thorough understanding and lays the foundation for the metabolic basis of macronutrients and the biochemistry underlying disease pathogenesis. Finally, the main theme of this book is to address the macronutrient metabolism in terms of anabolic, catabolic and amphibolic pathways.

Micelles: Structural Biochemistry, Formation and Functions and Usage
Danielle Bradburn and Tom Bittinger
In series: Chemistry Research and Applications
In series: Biochemistry Research Trends
Hardcover: 978-1-62948-444-0, $150.00.
In this book, the authors present current research in the study of the structural biochemistry, formation and function, and usage of micelles. Topics discussed in this compilation include acid-base equilibrium in aqueous micellar solutions of surfactants; computational methods as tools for the study of RM structure and dynamics; thermodynamic aspects of micelles; micellization of gemini surfactants in aqueous solutions; micelles from lipoamino acids; construction of block copolymer micelles and single-chain nanoparticles in non-selective solvents; block polyelectrolyte micelles/protein mixed nanostructures in aqueous media; and a treatment strategy for the gastrointestinal development of extremely premature infants by administration of micelles derived from pulmonary surfactants and the vernix caseosa in pregnant rabbits.

Omega-3 Fatty Acids: Chemistry, Dietary Sources and Health Effects
Wasim Khan (Cell Biology & Physiology Division, CSIR-Indian Institute of Chemical Biology, Kolkata, India)
In series: Biochemistry Research Trends
2013. 269 pp.
Hardcover: 978-1-62948-516-4, $175.00.
e-book: 978-1-62948-524-9, $175.00.
There has been an exponential increase in the amount of research on the relationship between Omega-3 fatty acids and human health over the past two decades. This book focuses on developing information on these newly recognized key components of omega-3 fatty acid research. This authoritative volume brings about a perspective to understanding the recent developments in omega-3-fatty acid research by going beyond presenting only a summary of the research literature. It discusses the limitations, points of agreement, and areas of conflicting or inconclusive data. Readers will gain a current understanding of issues such as the importance of omega-3 fatty acids to health; the ways in which they are essential to human growth and development; their contribution to the prevention or amelioration of various diseases; and their quality and shelf life when used as dietary supplements. With a comprehensive review and discussion of current research, this volume is an invaluable resource for all researchers working in this field. It will be a comprehensive reference for nutritionists, dieticians, and health educators alike.

Peroxidases: Biochemical Characteristics, Functions and Potential Applications
Lucas Bogaert and Noah Coppens
In series: Biochemistry Research Trends
In series: Protein Science and Engineering
2013, 199 pp.
Hardcover: 978-1-62808-261-6, $150.00.
In this book, the authors present topical research in the study of the biochemical characteristics, functions and potential applications of peroxidases. Topics discussed include the unique properties and biotechnological potential of ligninolytic peroxidases; the functions and regulation during pathogenesis of plant peroxidases; phospholipids and peroxidases in mitochondrial apoptosis; glutathione peroxidases in stem, cancer, and cancer stem cells; biochemical responses of aquatic macrophytes to two abiotic stresses; role of ascorbate peroxidase in antioxidant protection; and the route, dose and duration of exposure to cadmium-relevance to oxidative stress induction.

Plasminogen Activator: Genetic Factors, Functions and Clinical Applications
Jeremiah M. Rutherford
In series: Protein Biochemistry, Synthesis, Structure and Cellular Functions
Hardcover: 978-1-63117-353-0, $150.00.
The Plasminogen Activator System (PAS) is a multifunctional protease system known to possess mitogenic, chemotactic, adhesive and migratory properties. Consequently, it plays an essential role in the process of tumor cell growth and metastasis. Tissue plasminogen activator (tPA) is a member of the serine protease family that plays a pivotal role in the homeostasis of blood coagulation/fibrinolysis and matrix regulation. This book discusses the use of PAS in cancer treatment; its role in chronic kidney disease; the genetic factors, functions, and clinical applications; obesity in adolescents; and the mutual interactions and potential combinatorial implications in oncotherapies.

Thrombin and Singlet Oxygen (1ΔO2*) Main Factors of Hemostasis
Thomas Stief
In series: Cell Biology Research Progress
2013. 373 pp.
Hardcover: 978-1-62808-466-5, $150.00.
Neutrophil granulocytes (PMN) are our primary defense cells against bacteria, fungi, parasites, or micro-thrombi. Their main weapons and signals are the reactive oxygen species (ROS), H2O2 being mother ROS, radicalic •OH and non-radicalic 1ΔO2* being the two daughter ROS. 1ΔO2* is the most important ROS because it is harmful against “non-self” and harmless against “self”. 1ΔO2* is highly reactive against S-H, S-S, or C=C groups and releases photons (hv). The activation of the assembly of their NADPH oxidase, one main trigger (zymosan A) and one main primer (1ΔO2*/hv) are of great physiological and pathophysiological importance in inflammation and in hemostasis. There is photonic communication: the neutrophils generate different types of photons and they can “see” them in other
cells. The approximate 300-400 nm photons are the main signals and the photons of lowest wave length seem to especially alert them in emergency. The present book examines further research on the respective altered matrix (AM=intrinsinc-contact phase) - coagulation and regulation of the neutrophil’s ROS generation by important substances, e.g., singlet oxygen (the excited “pro-drug” of photons), or photons. 1ΔO2* releases a photon by • dimol emission (634 nm red fluorescence, by collision of two 1ΔO2* molecules), • monomol emission (1270 nm near infra-red phosphorescence, spontaneous), • excited carbonyl (R=C=O*) emission (around 400 nm, after alken oxidation); this emission is shifted to higher wavelenghts by certain atoms such as fluor or phosphor. PMN are activated by kallikrein, generated in AM-coagulation activation. The best way to quantify intrinsic thrombin generation/blood ROS modulation of xenobiotics (drugs or physiologic substances at unphysiologic concentrations) is to perform a recalifiied coagulation activity assay (RECA) or a contact phase assay (CPA) in combination with the blood ROS generation assay (BRGA).

β-Glucans as Natural Biological Response Modifiers
Vaclav Vetylicka (Department of Pathology, University of Louisville, Louisville, KY, USA)
In series: Biochemistry Research Trends
Softcover: 978-1-62808-917-2. $52.00.
It is well established that among the many known and tested immunomodulators, polysaccharides isolated from various natural sources occupy a prominent position. β-Glucans belong to a group of biologically active natural compounds called biological response modifiers. These substances represent highly conserved structural components of cell walls in yeast, fungi, grain and seaweed. Its role as an immunomodulator has been well documented for over 50 years. Initial interest in the immunomodulatory properties of polysaccharides was raised after experiments revealed that a crude yeast cell preparation stimulated macrophages via activation of complement. Glucan represents a type of immunostimulant that is active over the full spectrum of biological species, which allowed glucan to be used as a potent immunostimulator in commercially important species such as shrimps, fish or pigs. In the last decade, a renewed interest in human application has brought about some important studies on orally-administered glucan resulting in 18 currently running clinical trials. Fortunately, in the last years, research in reputable laboratories has reached a phase when the basic mechanisms of β-glucan effects are known and the relationship between structure and activity were clearly established. It seems now that β-glucans will finally take a position which was ascribed to them more than fifty years ago.

BIOLOGY

Bacteriophages: Biology, Applications and Role in Health and Disease
Clark Denton and Richard J. Crosby
In series: Bacteriology Research Developments
Hardcover: 978-1-62618-513-5. $150.00.
Bacteriophages are obligate parasites that require bacterial hosts to replicate. Phage initiate infections by first attaching to the surface of bacteria and injecting their genomes into host cells. Virulent phages then hijack the host's cellular machinery to direct the production of phage virions that burst from the cell leading to bacterial lysis. In this book, the authors discuss the biology, applications and role in health and disease of bacteriophages. Topics include the varied potential roles of bacteriophages in the production of food from animal sources; phage therapy, biocontrol and commercial microbiology; abortive infection as a killer bacteriophage resistance strategy; bacteriophages as biocontrol tools of pathogens in meat and dairy products; bacteriophages as probiotics and decontaminating agents for food products; use of bacteriophages as surrogate indicators of viruses in water; promoter sequences for bacteriophage RNA polymerases; the use of bacteriophages in bacterial food pathogen regulation; and the interaction between bacteriophage and its bacterial host receptor, LamB.

Biofilms in Bioengineering
Manuel Simões and Filipe Mergulhão (LEPAE-Department of Chemical Engineering, Faculty of Engineering, University of Porto, Porto, Portugal)
In series: Microbiology Research Advances
It is a natural tendency of microorganisms to attach to surfaces, to multiply and to embed themselves in a slimy matrix, resulting in biofilms. Biofilms constitute a protected growth modality that allows the microorganisms to survive in hostile environments. Biofilm science is a relatively new technical discipline, which has emerged in response to the need of methodologies for biofilm control. Biofilms represent an interdisciplinary research area focused on the understanding and modulating of the combination of biological and chemical reactions, as well as in transport and interfacial transfer processes, that potentially affect the microbial accumulation and activity on abiotic and biotic surfaces. Research on biofilms has progressed rapidly in the last decade. Due to the fact that biofilms have required the development of new analytical tools, many recent advances have resulted from collaborations between biologists, engineers and mathematicians. The scientific community has come to understand many things about the particular biology of microbial biofilms through a variety of microscopic, physical, chemical, and molecular techniques of study. This book provides a remarkable amount of knowledge on the processes that regulate biofilm formation; on the methods used for their formation, monitoring, characterization and mathematical modeling; on the problems caused by their presence in the food industry, environment and medical fields; and describes the current and emergent strategies for their control. The information in this book is designed to be of use to researchers and engineers working on fundamental aspects of biofilm formation and control and also to be helpful in conducting biofilm studies and in the consistent interpretation of results.

Biology and Communication in the Information Age
Rafiqul Islam (Dalhousie University, Canada)
In series: Microbiology Research Advances
Hardcover: 978-1-62948-252-4. $150.00.
The information age came with the promise of transparency greater than anything witnessed heretofore by humanity. Of course, transparency is the essence of foresight and knowledge. The hope was for a greater accountability that would follow increased transparency, compelling policy makers to depend on knowledge and foresight rather than disinformation and hidden agendas. Recent events of the new millennium indicate that the increase has been in opacity and disinformation. The information age, often dubbed as the 'knowledge era', has become the antithesis of knowledge, however; even its most ardent proponents admit that. Despite globalization, the information age has failed to generate knowledge-based decision-making tools. The failures of the information age to generate knowledge and remove or attenuate much of the basis of international conflicts are symptomatic of a deeper illness. Science has become the captive of the 'New
Science' that focuses on short-term, tangible, and status-quo, and doesn’t even allow the real science to face in a direction that would allow the knowledge-model to launch. This science is incompatible with nature, even in competition with nature, and is not even facing the same direction as the science that is needed to increase knowledge — the only process on which rational hopes of discovering the truth may be placed. Consequently, all the promises of the information age have been failing spectacularly. Today, we have medicines that don’t cure, an economy that doesn’t economize, education systems that don’t educate, purification techniques that do not purify, and justice systems that award plaintiffs or deliver discriminatory treatment of an accused depending on ethnic origin, religious belief, or skin colour. Today, we do collect data at an unprecedented rate, and, yet, we do not process a single set of data with any technique that is truly natural. Today, in the name of simulation, airplanes do not emulate how birds fly, computers do not emulate how the brain computes, cameras do not emulate how the human visual cortex captures and fixes an image, electricity disdains to emulate lightning (insufficiently continuous) or the electric eel (too dependent on the material properties of the receiving medium), commercial ships forego natural sources of locomotion like wind, and submarines do not emulate how fish navigate beneath the water’s surface. If nature is the truth, our New Science must be falsehood.

Endometriosis: A Multidisciplinary Approach
Maria-Eulalia Fernandez-Montoli, Luis Giné Martínez and Jordi Ponce Sebastia (Hospital Universitari Bellvitge, Barcelona, Spain)
In series: Human Reproductive System - Anatomy, Roles and Disorders
In series: Obstetrics and Gynecology Advances
Hardcover: 978-1-62618-611-8. $175.00.
Endometriosis is a gynecologic disease with serious implications in women’s health. Currently, its incidence is increasing around the world. Today, there is a growing trend to approach endometriosis with a multidisciplinary team. More and more, centers of expertise are being created in order to provide holistic multidisciplinary care all the while improving scientific research. This book covers every aspect of endometriosis diagnosis and management. It deals with epidemiology and pathogenesis, as well as the classifications of the disease. Current and future diagnostic methods are included. The available medical treatment options are reviewed. Surgical management for endometriosis, endometriomas and pain are discussed. The book reviews the diagnosis and surgical management of deep infiltrating endometriosis, endometrioma, urological endometriosis, and other localizations of the disease, as thoracic endometriosis. New approaches to manage endometrioma (sclerosis of endometriomas) are described. The diagnosis and multidisciplinary treatment of the disease is compiled. The management of recurrences of the disease and its risk factors is discussed. This publication with a special interest in surgical management provides a multidisciplinary vision of the management of endometriosis. It also includes topics on basic science, research, assisted reproductive techniques, and medical treatments. Alternative treatments (such as acupuncture), nutritional, psychological and physical therapy or sexological issues are reviewed. This book can give a global vision of the disease from the point of view of the different specialists involved in the management of the disease.

Helicobacter pylori: Detection Methods, Diseases and Health Implications
Marco Manfredi and Gian Luigi de'Angelis (Azienda Ospedaliero-Universitaria di Parma, University Hospital, Parma)
In series: Bacteriology Research Developments

In series: Digestive Diseases - Research and Clinical Developments
Infection by Helicobacter pylori has for many years been one of the medical conditions most studied not only in the gastroenterological context. This is because, in recent years, H. pylori has also been involved in a number of extra-intestinal diseases. In this book, we have tried to involve the biggest international experts on the subject. Some authors have tried to provide a complete view of the most common and widely used diagnostic methods, both invasive and non-invasive, also explaining the unusual techniques and the most innovative complementary methods not yet used in clinical practice. Other international experts have tried to describe the latest findings on pathogenesis and the various clinical manifestations of infection by H. pylori in the various systems. One chapter is reserved for H. pylori infection in childhood, an important period especially in transmission of the infection, explaining the various international guidelines for correct diagnosis and treatment. The authors have also provided the latest evidence regarding the various methods of eradication therapy, with a critical analysis of the reasons that compel some researchers to believe that eradication at all costs is not always correct and useful for humans. The book also deals with the current and latest knowledge regarding the progress and the difficulties in the development of a vaccine against H. pylori infection, the implementation of which could solve the problem of the difficulty in the eradication linked mainly to the onset of antibiotic-resistance.

Homocysteine: Biosynthesis and Health Implications
Kilmer S. McCully (Harvard Medical School, Boston, Massachusetts, USA)
In series: New Developments in Medical Research
Hardcover: 978-1-62948-639-0. $150.00.
In the aftermath of the discovery of the essential amino acid methionine in 1922, a new sulfur amino acid was discovered a decade later by Vincent DuVigneaud as a product of the degradation of methionine. This new amino acid, homocysteine, was found to be an important intermediate compound in the metabolism of methionine, cysteine and other sulfur amino acids through studies in animals. Although methylation reactions and one carbon metabolism were found to be related to the metabolism of homocysteine, little was known of the biomedical significance of this obscure sulfur amino acid in the 1950s. The studies of children with mental retardation, dislocated optic lenses, osteoporosis and other skeletal abnormalities, and a propensity for arterial and venous thrombosis, revealed the new inherited disease homocystinuria in 1962. A new concept of the importance of homocysteine in human disease was developed after the chance observation of rapidly advancing arteriosclerosis in children with different inherited enzymatic abnormalities of homocysteine metabolism by Kilmer McCully in 1969. This concept led to the development of the Homocysteine Theory of Arteriosclerosis, which stimulated an extraordinary effort to understand the importance of homocysteine in human disease by investigators in laboratories and clinics worldwide. As a result of over 17,500 published investigations in subsequent years, the obscure sulfur amino acid homocysteine was elevated to the status of “the cholesterol of the 21st century” because of its prominent involvement in human vascular disease. Extensive human studies identified the elevation of plasma homocysteine as a potent, independent risk factor for vascular disease, including coronary heart disease, cerebrovascular disease, and peripheral vascular disease. Many other important human diseases were subsequently found to be affected by homocysteine, as described by the authors of several chapters in this present book. These diseases, many of which are correlated with aging, include neurodegenerative diseases and dementia, epilepsy, uremia, osteoporotic fractures, anemia of renal failure, infection by HIV,
and methods of network biology as methodology of social network biology. Biological networks are published. This book includes such theories with the quick development of this science, more and more expected to be addressed by network analysis. Network analysis is coextinction and biodiversity conservation in ecology, cancer biology, health science, ecology, social science, applied mathematics and computational science.

Parathyroid Glands: Regulation, Role in Human Disease and Indications for Surgery
Maya Ashford
In series: Endocrinology Research and Clinical Developments
2014. 130 pp.
Softcover: 978-1-63117-229-8, $72.00.
Parathyroid glands are endodermal-derived organs responsible for the production of the parathyroid hormone (PTH), an essential regulator of calcium homeostasis. The role of the parathyroids in human diseases is almost exclusively related to its hyperfunction, mainly mediated via primary hyperparathyroidism, which is a relatively common disease and is the main cause of hypercalcemia in outpatients. This book discusses the development of parathyroid glands and e-cells; homeostasis, disease and indications for surgical treatment in the parathyroid glands; hyperfunction in the parathyroid glands; contemporary surgical management or primary hyperparathyroidism; and the role of parathyroid hormones in heart failure.

Practical Manual of Forensic Histopathology
Jose Blanco Pampin (Instituto de Medicina Legal de Galicia (IMELGA)), Manuel Salguero Villadiego (National Institute of Toxicology and Forensic Sciences, Sevilla, Spain)
In series: Medical Procedures, Testing and Technology
Hardcover: 978-1-62081-748-3, $175.00.
Softcover: 978-1-62948-998-6, $89.00.
e-book: 978-1-62081-756-8, $175.00.
It is important to understand that forensic histopathology is quite different compared to the rest of histology. Diagnostic histopathology is largely an apprenticeship, learned through experience and by visual demonstration and example. It is of great importance in criminal cases, as the presentation of microscopic evidence improves the legal decision of Courts and promotes justice. This book focuses on the borderland between forensic pathology and forensic histology. Forensic pathologists also benefit from a realistic perspective with more than 300 full-color micrographs. The main advantage of this book is the modern concept of histopathology, with inclusion of immunohistochemical techniques of great utility to forensic pathologists, forensic pathology fellows, pathologists who consult in forensic cases, pathology residents, autopsy pathologists, coroners and forensic investigators.

Recent Advances in Microbiology, Volume 2
S.P. Tiwari, Rajesh Sharma and Rajeeva Gaur (Department of Microbiology, VBS Purvanchal University, Jaunpur, India)
In series: Recent Advances in Microbiology
2013. 399 pp.
Microorganisms are highly ubiquitous in nature and manifold in their activity. Interest in microbiology increased quite significantly due to wide application of microorganisms in studying different biological processes. An attempt has been made to introduce the readers to several areas of microbiology and microbial biotechnology and to provide insight into basic concepts of biology and practical applications of microorganisms. To assist the readers in understanding the text, several illustrations and figures have been incorporated in the current volume. The topics covered in this volume are arranged in such a way as to maintain the thread of continuity with Volume One as well as to make it easy for those who are not acquainted with Volume One of the series.

The editors believe that the previous book of the series, “Recent Advances in Microbiology Volume 1”, would also be helpful to readers in strengthening their concepts about different areas of microbiology and microbial biotechnology.

Schistosomiasis: Epidemiology, Diagnosis and Treatment
Adriana Erica Miele (Dept. Biochemical Sciences, “Sapienza” University of Rome, Rome, Italy)
In series: Parasites and Parasitic Diseases
Hardcover: 978-1-63117-186-4. $150.00.

The book entitled “Schistosomiasis: Epidemiology, Diagnosis and Treatment”, published by Nova Science Publishers Inc. presents a very interesting overview on this tropical parasitic disease in the post-genomic era. The book is a collection of 8 chapters written by world-renown health professionals and researchers, highly active in the field.

This book is conceptually divided into two sections: (1) a broad recollection of the up-to-date state of the comprehension of Schistosomiasis, including its interplay with the human host; (2) a focused survey on specific field studies, presenting the actual challenges of the disease. The first part, composed of 4 chapters, is preparatory to a better understanding of the case studies in the second part. Special attention has been put on three selected at risk categories of people: pre-school aged children, women, and travelers/migrants; the first two living in endemic areas, and the latter in non-endemic regions. In between these two sections is the chapter on zoonotic schistosomiasis, a neglected research area that shows the dangerous role of infected livestock in maintaining the disease in endemic countries.

The Biology and Medical Dynamics of Human Reproduction
Laurence A. Cole (USA hCG Reference Service, Angel Fire, NM, USA)
In series: Human Anatomy and Physiology
2014.
Hardcover: 978-1-62948-832-5. $150.00.

This book covers human female biology, how the menstrual cycle is controlled, how steroidogenesis is controlled and how the follicle and the egg are formed. This book covers male biology, how sperm are synthesized and matured. Then this book covers sex biology, such as how the brain deals with libido and sexual images, and how the brain controls erection and ejaculation.

This book deals with how sperm are matured upon intercourse, how fertilization takes place, and how the fertilized embryo is matured and implants in the uterus. The subjects of sexuality and homosexuality, chromosome disorders and hyaluronidase moles are carefully discussed and considered. Sexual maturation of the fetus during pregnancy is carefully considered. This book carefully describes puberty, adrenarche and menarche. The subject of menopause is carefully considered. The subject of major bacterial and viral and sexual diseases is carefully considered as is the subject of reproductive cancers. In writing this book, care has been taken to update everything and check out the information available on medline and on the internet. This is a textbook for undergraduates, medical students and graduates describing all the details of human reproduction. It is also the only up-to-date book on the market. Having examined a total 70 books on human reproduction, obstetrics and gynecology, they all, with no exceptions, include mostly out-of-date science. This is corrected in this book. This book is also a monograph for reproductive biology scientists, covering all the most recent findings in this field. It can also be sold as a general obstetrics and gynecology information source for use by physicians, the general public and in libraries. This is a unique one-of-a-kind reference on human reproduction.

BIOTECHNOLOGY

Dinoflagellates: Biology, Geographical Distribution and Economic Importance
Regis D. Tobias and Vermette M. Larinee
In series: Biotechnology in Agriculture, Industry and Medicine
2013. 128 pp.
Softcover: 978-1-62948-238-5. $69.00.

In this book, the authors present current research in the study of the biology, geographical distribution and economic importance of dinoflagellates. Topics discussed in this compilation include the distribution, toxicity and impact on aquaculture dynamics of toxic dinoflagellates’ blooms in the austral pacific region; an overview of the ecophysiology, molecular biology, and ecological impacts of the toxic bioluminescent dinoflagellate pyrodinium bahamense; and dinoflagellates of the Baikal Region.

Pharmaceutical and Medical Biotechnology: New Perspectives
Gennady E. Zalkov, Rajmund Orlicki, Cezary Ciecielska, Larisa Petrovna Krylova and Jan Pielichowski (N.M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, Moscow, Russia)
In series: Recent Trends in Biotechnology
Hardcover: 978-1-62618-851-8. $175.00.

This book includes information about the expression assessment of cell viability in biological preparations, interfacial tension, and phase behaviour in emulsions of associative biopolymers. Also discussed are the conditions of shear flow, and interaction and structure formation of gelatin type A with thermo aggregates of bovine serum albumin, and perspectives of application of multi-angle laser light scattering and methods for quality control of medicines. A new approach to the creation of biocompatible magnetically targeted nanosystems for a smart delivery of therapeutic products, polyelectrolyte microsensors as a new tool for metabolites’ detection, and improvement of the functional properties of lysozyme by interaction with 5-methylresorcinol is also reviewed. The methods of study of the processes of the issue of the optical information biological object, polyelectrolyte enzyme-bearing microdiagnosticum, and a new step in clinical-biochemistry analysis and introductions in culture in in-vitro rare bulbous plants of the Sochi Black Sea Coast (Scilla, Muscaria, Galanthus) are studied.
Ultrasound in Bone Fractures: from Assessment to Therapy
Christiano B. Machado (Federal University of Rio de Janeiro, Rio de Janeiro, Brazil)
In series: Medical Procedures, Testing and Technology
In series: Biomedical Devices and their Applications
2013. 279 pp.
Hardcover: 978-1-62808-506-8. $150.00.
Bone is a complex and specialized connective tissue, with a degree of elasticity even with a high concentration of mineralized components in the extracellular space. After a fracture event, an acute response takes place with a molecular signaling cascade for bone induction, called fracture healing. This phenomenon represents a multistage repair process with a well defined temporal and spatial sequence, and it can lead to severe complications such as nonunions, delayed unions, and infections, whose treatment represents important negative consequences for patients and a socioeconomic burden, particularly due to the high costs in health care. Besides the conventional X-rays and more recently computed tomography, ultrasound techniques have been proposed to evaluate and monitor fracture regeneration. On the other hand, recent studies show that ultrasound stimulation can be considered as a therapeutic tool for the enhancement of bone fracture healing. Therefore, ultrasound has a twofold perspective for bone fracture healing: therapy and diagnosis/follow-up. This book is intended to give an overview of the field and consists of chapters detailing theoretical and experimental aspects of the interaction phenomena between ultrasound waves and bone. It was prepared for medical doctors, physical therapists and other health professionals, biomedical engineers and ultrasound researchers, and it shows recent findings on the application of ultrasound in clinical diagnosis (ultrasound imaging and quantitative ultrasound) and therapy for fractures. The basics of bone histology, mechanics and regeneration are presented, as well as an introduction to ultrasound physics, giving more insight for the comprehension of the several mechanisms involved.

Botany
A Monograph on Solanum Torvum Swartz
Zubaida Yousaf, Ana Akram and Hafiza Ayesh Rehman (Department of Botany, Lahore College for Women University, Jail Road Lahore, Pakistan)
In series: Botanical Research and Practices
2013. 103 pp.
Softcover: 978-1-62808-421-4. $52.00.
Traditional societies have always exploited edible wild plants to provide an adequate level of nutrition. These plant resources play a significant role in nutrition, food security and income generation. Agricultural development and cultivation in developing countries are primarily based on subsistence crops and edible wild plant species, and only secondary on the cultivation or utilization of a wide diversity of food crops. The Solanaceae, to which the genus Solanum L. belongs, is a cosmopolitan family containing many essential vegetables, fruits, and ornamentals. Many species of genus Solanum are worldwide weeds of arable land, gardens, contained in soils rich in nitrogen, moderately light with warm situations, which occur from sea to mountain levels. They are widely used as leafy herbs, vegetables, as a source of fruit, and for various medicinal purposes. Therefore, human consumption of their leaves and fruits as food is widespread. Among them is Solanum torvum Swartz, which could be an important staple crop that is being used variously for research purposes worldwide. It is a potential staple crop due to its pharmacological and ethnomedicinal importance. This book attempts to uncaps all the available information on Solanum torvum Swartz. Accurately, by providing an identification key, descriptions of the taxa and most widely reported dietary, ethnobotanical and pharmacological uses. This book intends to contribute to improving the potential value of Solanum torvum Swartz through increased use of the available genetic diversity. Monographs in the series will form as valuable reference sources for all those scientists involved in conservation, research, improvement and promotion of this plant species.

Bioactive Molecules in Plant Foods
Florence Ojukwu Urakpa (Department of Applied Health Sciences, Indiana State University, Terre Haute, IN, USA)
In series: Agriculture Issues and Policies
Hardcover: 978-1-62081-515-1. $150.00.
Softcover: 978-1-62948-987-2. $89.00.
Functional foods (those with beneficial factors on health when consumed regularly as part of meals at effective levels) became prominent as food and nutrition science advanced beyond the treatment of deficiency syndromes to reduction of disease risk and health promotion. The dynamic trend of functional foods calls for accurate and reliable information in this emerging area of nutritional sciences. This book gives insight on physiologically active components of several plant foods. It is a collection of findings of basic and applied research on plant bioactive molecules, their development and utilization in food products. This book highlights various aspects of plant bioactive molecules such as lipids of physiological importance; antioxidants and health effects; micronutrients, botanicals and other dietary molecules; bioactive peptides; functional beverages/food products and other aspects of disease prevention and treatment.

Corpuscular-Wave Nature and Wave Properties of Plant Cells
Nina F. Kuznetsova (Laboratory of Genetics, Research Institute of Forest Genetics and Breeding (NIILGIS), Voronezh, Russia)
In series: Genetics - Research and Issues
Hardcover: 978-1-62618-785-6. $150.00.
Quantum biology is a wide area of research closely connected with almost all parts of biology. It is based on experimental data of biological sciences and the fundamental laws of physics (de Broglie law of corpuscular-wave dualism of the matter, the conservation laws, including the laws of thermodynamics). At this time, our knowledge in this area is fragmentary. The usual corpuscular biology studies only one plane of living matter organization, the structure and function of which is determined by the DNA-particle. That is why the theory often does not agree with experience, the physics laws don’t work. It leads to frequent changes of concepts. Many phenomena (division of living matter into cells, restoration and loss of totipotency of cell systems, etc.) do not find an explanation within the corpuscular theory framework. This book includes nine chapters. In Chapter 1 the insight of a cell as a quantum-mechanical system, an equilibrium system, an open and closed system; the notion of biological harmonic oscillator, as an elementary and indivisible unity of the wave properties of a living matter; the principle and regimes of oscillator work in plants; two internal energy sources and their physical nature; the role of DNA-particles and DNA-wave at different hierarchical levels of living matter organization are discussed. In Chapter 2 the changes of DNA particles, DNA-waves, the cell physical state, its basic components and physiological functions are analyzed during cell cycle of proliferating plant cell. In Chapter 3 seven types of cell division (mitosis, differentiative mitosis, free-nucleus mitosis, meiosis, endomitosis,
crushing and promitosis) are described. The dependence of the principle of prokaryotic and eukaryotic cell development from its condition is shown in Chapter 4. In Chapter 5 physical models of gamete sexual differentiation and fertilization are considered. The manifestation of the low of total impulse conservation in evolution processes is examined in Chapter 6. In Chapter 7 the mechanisms and manners of biological protection and the reasons for their change during evolution are discussed. How and why a DNA-particle and a DNA-wave change during reproductive development of future plant initial cells is described on Pinus sylvestris L. example in Chapter 8. In Chapter 9 a short overview of quantum biology tasks and problems is given.

From Seed Germination to Young Plants: Ecology, Growth and Environmental Influences
Carlos Alberto Busso (Universidad Nacional del Sur, Buenos Aires, Argentina)
In series: Environmental Health - Physical, Chemical and Biological Factors
In series: Botanical Research and Practices
Hardcover: 978-1-62618-653-8, $150.00.
e-book: 978-1-62618-676-7, $150.00.
This book includes new information on the growth, ecology, and effects of environmental influences on plant tissues from the scale of the germination of seeds to that of young plants. It starts with a review article that mostly address the initial phase of the plant life cycle (i.e., seed germination) from an ecophysiological viewpoint. The following three chapters shed light on the translocation and utilization of storage compounds in relation to the formation of those aromatics, during the germination and greening of Cucumis sativus. The remaining chapters are related to applied research, and include information obtained under laboratory conditions, although most studies were conducted at the field in salt-march; temperate, arid and semi-arid; humid, subtropical; high mountain, Mediterranean; tropical or cool-temperate forest, or mine tailing ecosystems. They increase our knowledge of the dynamics of root-microenvironment systems on wheat seedlings and the importance of safe sites in the establishment of new individuals and plant species regeneration of rangeland perennial grasses and forbs. Environmental conditions affect seed germination of spring ephemerals at the floor of deciduous, broad-leaved forests, and need of inoculating exotic tree species (e.g., Acacia mangium) with native mycorrhizal fungi for a successful rehabilitation of marginal and mine tailing sites in the Philippines.

Medicinal Plants: Antioxidant Properties, Traditional Uses and Conservation Strategies
David Alexandre Micael Pereira (Laboratory of Pharmacognosy, Faculty of Pharmacy, Porto University, Portugal)
In series: Botanical Research and Practices
2013, 297 pp.
Hardcover: 978-1-62948-219-4, $150.00.
e-book: 978-1-62948-220-0, $150.00.
Nowadays, natural products and in particular medicinal plants, play an important role in human health and therapeutics. Across the world, several different cultures employ medicinal plants for the treatment of a wide range of pathological conditions. In this book, we address the antioxidant properties of several medicinal plants, as well as their traditional uses and conservation strategies. This is, without a doubt, a wonderful opportunity to have a closer insight into the chemistry, biological properties, conservation and traditional use of medicinal plants used around the world.

CANCER
Advanced Cancer: Managing Symptoms and Quality of Life
Natalie Pulenzas, Breanne Lechner, Nemica Thavarajah, Edward Chow and Joav Merrick (Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
In series: Health and Human Development
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
2013, 452 pp.
Hardcover: 978-1-62808-239-5, $175.00.
Bone metastases are a common event for cancer patients. We have developed an innovative and unique clinical research program dedicated to palliative radiation oncology at the Odette Cancer Centre, Sunnybrook Health Sciences Centre and specifically a multidisciplinary clinic for bone metastases. The development of this program introduces an effective strategy to conduct research in palliative radiation oncology. Symptom control is very important for the quality of life for bone and brain metastases patients. This is an evolving active field of research as greater emphasis is being placed into understanding the goals of improving not only a patient’s survival, but the ability for therapies to improve the quality of a patient’s life. In this book we present the EORTC QLQ-C30 questionnaire, which was used in a multi-center study with patients recruited from Edmonton, Alberta, Canada; Kaohsiung, Taiwan; Kerala, India; Nicosia, Cyprus; Sao Paulo, Brazil; Taipei, Taiwan; Tanta, Egypt; and Toronto, Ontario, Canada, with brain and bone metastases. It was found that the difficulties bone and brain metastases patients experience are different in several ways. Patients with bone metastases have more pain and reduced physical functioning. However, patients with brain metastases have more severe role functioning deficits. With use of the QLQ-C30, it was also found that there is ambiguity regarding the root of patient issues. Future studies that require more comprehensive disease-specific findings should include disease-specific assessment modules such as the QLQ-BM22 and QLQ-BN20. Important domains such as the minimal clinically important difference should also be established in individual subgroups of patients to assist in clinical trial design.

Cervical Cancer: Screening Methods, Risk Factors and Treatment Options
Laurie Elit (Division of Gynecologic Oncology, Hamilton Regional Cancer Centre, Hamilton, ONT, Canada)
In series: Cancer Etiology, Diagnosis and Treatments
In series: Obstetrics and Gynecology Advances
Hardcover: 978-1-62948-062-6, $175.00.
e-book: 978-1-62948-071-8, $175.00.
Globally, cervical cancer is the second leading cause of death for women with cancer. This is a tragedy in part because cervical cancer affects women usually a decade sooner than other cancers when those women are in their reproductive years and in the prime years in the labor force. While screening with the Pap test or other more recently evaluated tests have resulted in low cervical cancer rates in high resource countries, the lack of screening options in low resource countries means that many women present with symptoms reflective of advanced disease and so the chance of survival is low even with aggressive treatment. In this book, we have an international spectrum
of authors from both high and low resource settings. We review the risk factors that lead to cervical cancer. We discuss novel screening techniques including HPV testing. We present the capacity for HPV vaccines to markedly reduce cervical cancer rates. Planning and implementing an organized cervical screening program and the assessment of quality indicators as a means of evaluation is outlined. In this book, we discuss novel operative options in early stage invasive cervical cancer as a means of preserving fertility. Also, we discuss the role of neoadjuvant chemotherapy as a means of down staging the disease. The role of surgically staging women to define more advanced disease is outlined including options for management of metastatic and/or recurrent disease with chemotherapy and targeted therapies. The special situation of women found to be pregnant during the diagnosis of pre-invasive or invasive cervical cancer; and the diagnosis and management principles are reviewed. Just as poliomyelitis has almost been eliminated in the lifetime of one generation, we look forward to the elimination of oncogenic HPV and its deadly ramifications particularly for women exposed to this virus.

**Chronic Myeloid Leukemia: From Daily Management to Complicated Issues**  
_Celelletin Ustun and Uday R. Popat (Department of Medicine, University of Minnesota, Minneapolis, MN, USA)_  
_In series: Cancer Etiology, Diagnosis and Treatments_  
Hardcover: 978-1-62948-971-1, $195.00.  

Targeted therapy has revolutionized modern oncology practice and has completely changed the outcome of once universally fatal diseases like chronic myeloid leukemia (CML). The last decade has witnessed significant advances in the management of CML, which has become more like a chronic disease. Written by experts in the field, this volume nicely describes the current knowledge of the pathophysiology, clinical features, and management of CML. It covers not only clinical topics but also the basic science underlying these practices. It will be of help to clinicians and basic scientists alike. In addition to the state of the art treatment of CML, this book also covers many uncommon but very important special topics like management of CML in pregnancy or with children, management of resistance to new tyrosine kinases and treatment of the advanced phase of the disease. Written to be easily digestible, patients will also be able to access important and universally useful information on CML (e.g., diagnosis, symptoms and signs, and treatment). Some themes especially, including drug and food interactions of tyrosine kinase inhibitors (TKIs), CML treatment during pregnancy, advantages/disadvantages of the most commonly used TKIs, and bone marrow transplantation indications, will be of popular concern. This extensively referenced book therefore should be of great help to both novices and experts in the field.

**Doxorubicin: Biosynthesis, Clinical Uses and Health Implications**  
_Melinda Pache_  
_In series: Cancer Etiology, Diagnosis and Treatments_  
2014. 185 pp.  
Hardcover: 978-1-63117-233-5, $95.00.  

Doxorubicin is a classical but useful anti-tumor agent. It is used for the treatment of a variety of malignancies including solid tumors and leukemia due to its broad spectrum anti-tumor activity. It also has well known toxic side effects that must be minimized for its successful use clinically. This book discusses intraperitoneal doxorubicin; preclinical characterization of the drug-delivery device DCBeads for transarterial chemoembolization of doxorubicin and nemorubicin; doxorubicin-induced cardiomyopathy; advanced therapies of doxorubicin by carrier of drug delivery system or combined food components; and prevention and management of cardiotoxicity.

**Free Radicals: The Role of Antioxidants and Pro-oxidants in Cancer Development**  
_Bill Stone (Department of Pediatrics, East Tennessee State University, Johnson City, TN, USA)_  
_In series: Cancer Etiology, Diagnosis and Treatments_  
Hardcover: 978-1-63117-177-2. $150.00.  

An international team of accomplished researchers has been assembled to define the role that antioxidants and pro-oxidants play in cancer. Increasing scientific evidence points to the importance of antioxidants and pro-oxidants in both the etiology of cancer development and in cancer treatments. This book should prove useful for research scientists wanting a comprehensive review of the latest accomplishment in this area and for health care-providers who advise patients and the general public about dietary antioxidants and the safety and appropriate use of antioxidant supplements. Endogenous antioxidants systems that play key roles in modulating the in vivo effects of reactive oxygen species (ROS) are reviewed in detailed. Many exogenous antioxidants such as vitamin E (tocopherols and tocotrienols), vitamin C, green tea polyphenols, beta-carotene and curcumin are individually discussed as well as their potential roles in alternative and complementary medicine approaches to cancer prevention and treatment. For public health professionals the question of whether or not antioxidants have a safe chemopreventive role is central: it is clearly much more effective to prevent cancer than deal with its consequences including the damaging side effects of many chemotherapeutics.

**Horizons in Cancer Research. Volume 52 Hiroto S. Watanabe**  
_In series: Horizons in Cancer Research_  
Hardcover: 978-1-62808-046-9. $150.00.  

This book presents original research results on the leading edge of cancer. Topics discussed include coping mechanisms in patients with head and neck cancer; hepatocellular carcinoma; chronic lymphocytic leukemia; the pathobiology of B-lymphoproliferative disorders from MBL to CLL to SLL; molecular and cellular characterization of chronic lymphocytic leukemia; pain as a consequence in patients with early stage breast cancer treated with intracavity brachytherapy; accelerated partial breast irradiation (IBAIPHI); the future of anti-tumor immunotherapy; coping with childhood cancer; and the current clinical utility of Everolimus in the treatment of renal cell carcinoma.

**Horizons in Cancer Research. Volume 53 Hiroto S. Watanabe**  
_In series: Horizons in Cancer Research_  
Hardcover: 978-1-63117-246-5. $150.00.  

This book presents original research results on the leading edge of cancer. Topics discussed include one woman's experience with the Gerson therapy for cancer; epigenetic upregulation or direct overexpression of miR-137 enhances anti-tumor activity of delphinidin for inducing apoptosis in human glioblastoma T98G cells; potentials and challenges of chip technologies in serum biomarker studies for personalized medicine of colorectal cancer; colon cancer; targeting hallmarks of cancer as current therapeutic strategy; and epigenetic regulation of cancer.
This book is a comprehensive display of the current multimodality management of oral cancer. It spans the entire discipline of oral oncology and provides a concise and current management of oral cancer—one of the most important head and neck cancers in the world. This classic reference delivers top to bottom coverage of oral cancer from epidemiology, molecular biology, preventive medicine, to the cutting edge of current treatment such as radiation therapy, ablative surgery, photodynamic therapy and reconstruction, as well as the management of potential complications.

Recent Avenue to Cancer Prevention
Zsuzsanna Suba (National Institute of Oncology, Department of Surgical and Molecular Tumor Pathology, Budapest, Hungary)
In series: Cancer Etiology, Diagnosis and Treatments
e-book: 978-1-62948-712-0. $150.00.

This work presents some recent clinical, epidemiological and experimental data on the cancer preventive effect of healthy hormonal equilibrium. Insulin resistance-associated overproduction of peptide hormones, such as growth hormone, insulin and insulin-like growth factors, interacting simply with cell membrane receptors, have a proven tumor inducing capacity. Another group of hormones, including estrogens, thyroids and vitamin D, has both genomic intranuclear and non-genomic membrane-associated receptor signaling, thus they have complex roles in all basic cellular functions. Recent results suggest that defective synthesis of these latter hormones or alterations of their signal transduction pathways may thoroughly disturb metabolic processes, reproduction and the regulation of cell proliferation. Primary cancer prevention based on the preservation or restoration of the hormonal and metabolic equilibrium of patients may be the main program of the anticancer fight in the 21st century. Moreover, in cases with diagnosed malignancy, we should cure the ill patients instead of their tumors. After surgical tumor removal, the achievement of hormonal and metabolic equilibrium restores the natural defense mechanisms of patients, which may help to stop tumor recurrence.

Tumor Suppressor Genes: Functions, Regulation and Health Effects
Mehmet Gunduz and Esra Gunduz (Faculty of Medicine, Turgut Ozal University, Ankara, Turkey)
In series: Cancer Etiology, Diagnosis and Treatments

Cancer is a devastating disease lacking an exact treatment. Recent advances in genetics and biotechnology have provided a deeper understanding of cancer biology, out of which aberrations in oncogenes and tumor suppressor genes have arisen as important etiological factors. Inactivation of tumor suppressor genes is one of the initial cellular changes that ultimately lead to tumor development. Thus, increasing knowledge about these genes aids in the development of novel therapeutic applications as well as identification of more effective and rapid molecular markers for early diagnosis and prognostic evaluation. This book provides up-to-date information on the structure, function and roles of the main tumor suppressor genes thus far identified. An important addition to the current literature in the field, this book is intended to help instructors for teaching purposes and researchers in the field of cancer biology as an overview of current knowledge.

Immunological Pathogenesis of Sepsis and Use of Hemorosorption for Treatment of Cancer Patients with Sepsis
Natalia Yu. Anisimova (N.N. Blokhin Russian Cancer Research Center, Russian Academy of Medical Sciences (N.N. Blokhin RCRC, RAMS), Moscow, Russia)
In series: Cancer Etiology, Diagnosis and Treatments
Hardcover: 978-1-62948-674-1. $85.00.
e-book: 978-1-62948-709-0. $85.00.

This monograph summarizes the data of the prospective study on the immunological characteristics of cancer patients with sepsis and septic shock developed after surgery. Patients without signs of infectious complications and symptoms of organ failure, as well as a group of healthy donors, were considered as references. The comparative analysis of blood parameters that characterized humoral and cell immunity (concentrations of cytokines and their receptors, immunoglobulins, lipopolysaccharide and other active biomolecules) has been performed. An estimation of diagnostic and prognostic significances of these parameters has been performed as well. In the final chapters, the properties of the new perspective hypercrosslinked polymeric hemosorbons are presented. The monograph could be interesting for a wide array of specialists in the fields of resuscitation, healthcare therapy, oncology and surgery, as well as for researchers aimed toward the development of new types of biocompatible materials.

Melanoma: Molecular Biology, Risk Factors and Treatment Options
Alexander C. Jones
In series: Dermatology - Laboratory and Clinical Research
In series: Cancer Etiology, Diagnosis and Treatments

Melanoma accounts for only 4% of all skin cancer cases but most of skin cancer-related death. The rising incidence of melanoma makes this tumor an important public health problem. In this book, the authors present current research in the study of the molecular biology, risk factors and treatment options for melanoma. Topics include the role of P13K/AKT and Wnt/β-Catenin pathways in melanoma’s progression to metastatic disease; cutaneous melanoma; molecular determinants of melanoma vasculogenic mimicry; new aspects of the molecular biology of melanoma metastasis; the surgical extent of regional lymph node dissection for cutaneous melanoma and its novel techniques and modifications; the epidemiology of melanoma in young individuals; cardiac involvement in malignant melanoma; poor Karnofsky performance status and high serum lactate dehydrogenase level identifies patients with brain metastases from malignant melanoma who do not benefit from palliative whole brain radiotherapy; interferon-beta therapy; and boron neutron capture therapy.

Oral Cancer: Symptoms, Management and Risk Factors
Sheng-Po Hao (Department of Otolaryngology Head and Neck Surgery, Comprehensive Oral Cancer Center, Shin Kong Wu Ho-Su Memorial Hospital, Taiwan)
In series: Cancer Etiology, Diagnosis and Treatments
Hardcover: 978-1-62948-215-6. $150.00.
e-book: 978-1-62948-223-1. $150.00.
CARDIOLOGY

Atrial Fibrillation: Causes, Diagnosis and Treatment Options
Luis Cunha (Neurology Department, Coimbra University and Hospital Centre, Coimbra, Portugal)
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-62948-926-1. $195.00.
Atrial fibrillation is rapidly assuming a predominant role in current vascular medicine. Parallel to its escalating prevalence, due mainly to the global aging of the population, physicians worldwide and across different medical fields have joined efforts producing dramatic breakthroughs in diagnostics and the multidimensional therapeutic arsenal to this common arrhythmia. In this endeavor, we aim to cover an updated and practical overview of the whole spectrum of this disturbing hurdle. Firstly, this publication will encompass different perspectives for the same entity: atrial fibrillation, encompassing the first line approach of Internal Medicine and the mindset of cardiologists and neurologists. Thereafter, an updated look on the epidemiology that has been exponentiating the awareness on this arrhythmia with a special scrutiny to the impact on stroke units worldwide is discussed. In the next section, the main advances in the diagnostic area will be presented, ranging from the anatomical viewpoint to rhythm disturbances and embolic complications. The medical and interventional treatment will follow with critical reviews of the therapeutic outbreaks and achievements into a practical modern-day care. In summary, we designed a flow of contents from the burden of the disease to its approach, with the intent to provide an updated, comprehensive overview of all major current dilemmas in atrial fibrillation conceptualized for physicians from all specialties addressing patients with this contemporary clinical challenge.

Cardiovascular Health and Chronomics
Ram B. Singh
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-62948-976-6. $195.00.
e-book: 978-1-63117-027-0. $195.00.
This book presents important research from around the world in the field of cardiovascular science. Particular emphasis is placed on chronomics, immunogenicity, diet and health, diabetes, coronary risk, and cardiovascular disease.

Cardiovascular System: Anatomy and Physiology, Short and Long-Term Effects of Exercise and Abnormalities
Mark E. Oberfield and Thomas A. Speiser
In series: Cardiology Research and Clinical Developments
2013. 182 pp.
Hardcover: 978-1-62948-308-5. $120.00.
e-book: 978-1-62948-309-2. $120.00.
The essential components of the human cardiovascular system are the heart, blood, and blood vessels. It includes: pulmonary circulation, a "loop" through the lungs where blood is oxygenated; and systemic circulation, a "loop" through the rest of the body to provide oxygenated blood. In this book, the authors present topical research in the study of the cardiovascular system and its anatomy and physiology, short and long-term effects of exercise and abnormalities. Topics discussed include erythropoietin cell signaling and diseases; cardiovascular morbidities in rheumatoid arthritis and the effects of exercise on cardiac autonomic function; heart rate variability (HRV) assessment of physical training effects on autonomic cardiac control; endoplasmic reticulum stress in cardiovascular disease; and renal sympathetic denervation for resistant hypertension.

Evidence-Based Guide to Interventional Cardiology and Endovascular Medicine
Jon C. George (Deborah Heart and Lung Center, Division of Cardiovascular Medicine, Browns Mills, NJ, USA)
In series: Cardiology Research and Clinical Developments
2013. 441 pp.
Cardiovascular Medicine as a specialty is inundated with clinical trials for practice of evidence-based medicine. However, there is a definite gap in resources available to reference the myriad of clinical trials and trace the evolution of contemporary practices. This first edition of “Evidence-Based Interventional Cardiology and Endovascular Medicine" is a collection of clinical trial data spanning the breadth of the specialty from coronary, to structural, and peripheral interventions. This compilation has been in preparation over a period of 3 years and would not have succeeded without the participation of several colleagues within the specialty that have also recognized this need and contributed to this collection.

Fitness and Cardiovascular Risk Factors – What Everyone Should Know
Aurelio Leone and Linda Landini (Royal Society for Promotion of Health, Italy)
In series: Physical Fitness, Diet and Exercise
2014.
Hardcover: 978-1-63117-344-8. $150.00.
The Fitness is a widespread practice especially in Western countries and is being investigated in several respects from a scientific and health perspective as well as its role in obtaining a pleasing physical appearance. The authors also discuss fitness as a recreational hobby. Since it involves physical exercises that require an adequate preparation and not completely without risk to health, it is essential that those practitioners are made aware of both the basic principles of fitness and the potential adverse effects associated with it. This is true primarily when cardiovascular risk factors are concerned. The purpose of this book is to describe these topics in a concise way with bare suggestions for understanding the subject.

Horizons in World Cardiovascular Research. Volume 5
Eleanor H. Bennington
In series: Horizons in World Cardiovascular Research
Hardcover: 978-1-62618-984-3. $150.00.
e-book: 978-1-62618-985-0. $150.00.
Cardiovascular disease refers to the class of diseases that involve the heart or blood vessels. While the term technically refers to any disease that affects the cardiovascular system, it is usually used to refer to those related to atherosclerosis. Chronic heart failure (CHF) has emerged as a major worldwide epidemic. This book gathers the latest research in cardiovascular disease with a focus on such topics as cardiac connexin gap junction channels; the impact of alternative splicing on cardiovascular biology; gender aspects in septic patients receiving QTc prolonging drugs; nanotechnology for cardiovascular therapy; ineffective endocarditis associated to oral bacteremia; neonatal
International journals. In summary, this publication updates the main
of the spectrum of cardiology, this book
portrayed in the book. This book presents important research from around the world in the field of cardiovascular science. Particular emphasis is placed on circadian rhythms, chronomics, diet and health, obesity, and coronary artery disease.

New Research in Cardiovascular Health
Ram B. Singh
In series: Cardiology Research and Clinical Developments
This book presents important research from around the world in the field of cardiovascular science. Particular emphasis is placed on circadian rhythms, chronomics, diet and health, obesity, and coronary artery disease.

Percutaneous Coronary Intervention: Procedures, Medical Uses and Adverse Effects
Huili Gan and Yujie Zhou (Beijing Anzhen Hospital, Beijing, China)
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-62618-962-1. $85.00.
Percutaneous coronary intervention (PCI) has entered its third decade, as it had gone through a PTCA era, BMS era, and entered into the DES era. This book summarizes information gathered from recent literature in the field of PCI, focusing on PCI procedures, adjunctive pharmacotherapy and adverse effects. The editor has put together a comprehensive, in-depth guide to PCI, which has seen great advances in the understanding and management of coronary artery disease in recent years. The book examines all aspects of PCI in detail, in isolation and in combination with procedures, or medical uses and its adverse effects, to fulfill the aim of helping healthcare professionals and medical students to better understand and manage PCI problems in the DES era.

Recent Advances in Cardiology
José Milei and Giuseppe Ambrosio (Instituto de Investigaciones Cardiológicas, Buenos Aires, Argentina)
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-63117-282-3. $150.00.
This book deals with several subjects of actual interest in the field of cardiology, developed by experienced researchers in their respective fields. The authors comment on their own papers and experience all throughout the chapters in an easy-to-read format. Since modern cardiology demands continuous updating on specific topics of the varied spectra of cardiology, this book is devoted to diagnostic techniques, pathophysiology, clinical aspects and treatment. It presents comprehensive reviews of the subjects, making it useful to internists and cardiologists who want an updated review of the selected issues portrayed in the book. In this way, the book represents a further stage beyond classic structured books aimed toward cardiologists, cardiovascular surgeons, pediatricians and enthusiastic general practitioners. The chapters have been chosen because of the importance of the subjects they cover, as well as the expertise of the authors. All of them are well known experts and have been extensively published in international journals. In summary, this publication updates the main findings in cardiovascular diseases at present. This vast branch of medicine is rapidly expanding and many scientific manuscripts have appeared and continue to appear. Nevertheless, this review presents a compilation and review of the newest, most important issues in one volume.

Sudden Cardiac Death: Epidemiology, Genetics and Predictive/Prevention Strategies
Pasquale Santangeli (El Camino Real, Palo Alto, CA, USA)
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-62618-786-3. $85.00.
Sudden cardiac death is a worldwide pandemic. Over the last years, basic and clinical research has greatly contributed to our understanding of the epidemiology, risk factors, preventive measures and therapy for sudden cardiac death. The advent of the new era of human gene discovery has clarified the genetic basis for inherited arrhythmogenic syndromes potentially leading to sudden cardiac death. Primary prevention measures against coronary artery disease have also translated into a decrease of the incidence of sudden cardiac death in adults, and the advent of implantable defibrillators has been proven to reduce mortality in patients at risk. This book has the aim of providing a concise yet comprehensive update on the major advances in the field of epidemiology, genetics and preventive measures for sudden cardiac death.

Sudden Death: Causes, Risk Factors and Prevention
Jishin Wu and Jessica Wu (USF Medicine International, University of South Florida, Tampa, Florida, USA)
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-62618-825-9. $150.00.
e-book: 978-1-62618-844-0. $150.00.
This book dedicates the first seven chapters to cardiac electrophysiological dysfunction that can lead to ventricular fibrillation and sudden death. The next six chapters expand the topics of sudden death to other causes. Brugada Syndrome is the top cause of non-traumatic sudden death in young males of Southeastern Asian and southern European origins. Chapters One and Two review extensively the history and current status, mechanisms of arrhythmias, and related gene mutations in Brugada Syndrome, and discuss gaps in the current knowledge. Chapter Three presents clinical studies on the A1180V and R1193Q mutations of the cardiac sodium channel gene, SCN5A. The authors identified R1193Q mutation in 12.8%–16% of a healthy Chinese population. This result prompted the question of whether SCN5A mutations are still the top genetic bases of Brugada and long QT syndromes. Chapters Four, Five and Seven discuss the pathophysiology causes, risk factors, predictors, prevention, and possible therapeutic strategies of sudden cardiac death. Chapter Six reviews the scope and causes of sudden cardiac death in athletics. Chapter Seven is dedicated to the roles of electrical cardiac systole in sudden death. Chapter Eight reviews sudden death related to cardiac and brain tumors, pulmonary tumor embolism, asphyxia, massive exsanguinations, and their pathophysiology. Chapter Nine summarizes the pathophysiology of sudden death caused by myocardial tuberculosis. Chapter Ten introduces pathophysiology of sudden death during hot baths in deep bathtubs, which occur frequently in elderly people in Japan. Chapter Eleven discusses air pollution as a trigger of sudden death. Chapter Twelve presents biochemical, cytological and histopathological examination of sudden unexpected death in infancy.
The last chapter of the book, Chapter Thirteen, reviews postmortem cardiac markers in different body fluids and their application in forensic pathology diagnosis of sudden cardiac death. In combination, these chapters cover a broad range of topics about sudden death.

**CELL BIOLOGY**

**Adiogenesis: Signaling Pathways, Molecular Regulation and Impact on Human Disease**

Yunfeng Liu and Xiaoxiao Cai (Sichuan University, Sichuan, China)

In series: *Cell Biology Research Progress*

2013. 208 pp.

Hardcover: 978-1-62808-750-5. $150.00.


Adiogenesis is the process of cell differentiation by which preadipocytes become adipocytes. Adiogenesis has been one of the most intensively studied models of cellular differentiation. The exact mechanisms of adiogenesis remain unclear, since it involves abundant gene, growth factors, cytokines and environmental factors. This book provides an in-depth overview of current knowledge about the subject of adiogenesis in the human body, including what is known about molecular mechanisms (e.g., cytokine- and growth-factor-related).

Transcriptional regulators control the expression of target genes by the interaction with cofactors, coactivators, chromatin remodelling complexes and also with general transcriptional machinery. Current data suggests that adipogenesis is regulated by complex signaling pathway interactions involving multiple transcription factors. Many signaling pathways follow an inverse relationship between osteogenic and adiogenic differentiation. To provide better insight into the basic mechanisms of MSC fate determination, it is crucial to understand the various signaling pathways and cytokine interactions that coordinate this process. Further elucidation of this dichotomy may both improve understanding of human disease and speed the realization of MSC mediated tissue engineering. There are a number of gaps in current knowledge of how adiogenesis actually occurs, and the authors are hopeful that the publication of this book will help researchers in this field to decide where to focus their future efforts. Contributions are therefore sought from anyone who is undertaking research in this area. The book will also provide an overview for surgeons and clinicians who wish to be kept abreast of developments in this fascinating subject.

**Angiogenesis: Insights from a Systematic Overview**

Gaetano Santulli (Columbia University Medical Center, College of Physicians & Surgeons, Columbia University, New York, NY, USA)

In series: *Cell Biology Research Progress*


Hardcover: 978-1-62618-114-4. $175.00.


This book provides an overview of the scientific methods used to search, analyse, appraise and synthesize studies on angiogenesis. It is intended to serve as a comprehensive piece of literature that encompasses all aspects from the molecular features of angiogenesis to the clinical value and potential pitfalls of angiogenic-based therapies. The primary motivation to write this book is to provide an overview of the current status of the research in this field, with a focus on both tumoral and non-tumoral disease. Effects of various anti-angiogenic and pro-angiogenic molecules are also addressed in detail. This book comes at an important time in the development of so-called “translational medicine”. Its purpose is to explain all the molecular bases underlying the angiogenic process and apply them to the clinical world. Reviewed and addressed are the basic concepts and importance of new drugs in clinical trials to inhibit or promote angiogenesis. This book may be considered as a scholarly reference work for libraries and researchers across the world and as a supplementary text for courses in medicine, physiology, biochemistry, molecular and cellular biology. It is expected that readers, both basic researchers and clinicians, will gain a good understanding of the essential value of angiogenesis in health and disease.

**Avascular Necrosis: Etiology, Diagnosis and Treatment**

Iulian Nusem (Department of Orthopaedics, Logan Hospital, School of Medicine, Gold Coast Campus, Griffith University and Queensland Bone Bank, Queensland, Australia)

In series: *New Developments in Medical Research*


Hardcover: 978-1-62948-738-0. $150.00.

e-book: 978-1-62948-741-0. $150.00.

Although the disease called avascular necrosis (AVN) was discovered in Egyptian mummies, there is a lack of information available in understanding and treating this pathology. AVN is a condition where cellular death of bone components occurs due to an interruption of the blood supply. Nusem discusses the morphopathological appearance of AVN. Avascular necrosis tends to affect young adults and often progresses despite appropriate treatment. Although some of the predisposing factors have been recognized, the pathogenesis of AVN remains unclear. Cheung discusses hypotheses and pathophysiologic mechanisms underlying the disease while Lloyd addresses new advances in the field of radiology. Most authors agree that successful treatment directly relates to the stage of the disease, which in most cases is reflected by a specific classification system. Each chapter will provide an overview of the specific systems most commonly used for the anatomical region described therein. Various anatomical locations more commonly involved with AVN are discussed specifically. Nusem discusses a rare spinal disorder characterized as avascular necrosis of a vertebral body occurring in a delayed fashion after minor trauma (Kümmell’s disease). The femoral head is most commonly affected by AVN; the clinical presentation and existing treatment options are discussed by Cowie and coauthors. AVN around the knee is presented by Myers and colleagues while AVN affecting the foot is presented by Nihal and coworkers. In the upper extremity AVN of the capitellum (Panner’s disease) is described by Rhau and colleagues and AVN of the scaphoid (Preiser’s disease) is described by Wong and his coworkers. Although AVN is not common in the paediatric age group, Jabar presents on AVN after slipped femoral capital epiphysis. Bone marrow oedema is a common finding in MRIs done in patients with AVN and Nusem will discuss bone marrow oedema syndrome and its differential diagnosis.

**B Cells: Molecular Biology, Developmental Origin and Impact on the Immune System**

Robert L. Montes and Leo Reyes

In series: *Cell Biology Research Progress*


Soificover: 978-1-62808-541-9. $72.00.


B cells belong to a group of white blood cells known as lymphocytes, making them a vital part of the immune system. The human body makes millions of different types of B cells each day that circulate in the blood and lymphatic system performing the role of immune surveillance. They do not produce antibodies until they become fully activated. In this book, the authors present current research in the study of the molecular biology, developmental origin and impact on the immune system of B cells. Topics discussed include the role of B cells in intracellular bacterial pathogen infections; dynamic clustering of
BCR-lipid rafts in antigen affinity discrimination by B cells; and B cells as a key player in the pathogenesis of multiple sclerosis.

**Cell Membrane: Molecular Structure, Physiochemical Properties and Interactions with the Environment**

**Lorette Mandraccia and Gina Slavin**

In series: *Cell Biology Research Progress*  
2013. 74 pp.  
Hardcover: 978-1-62808-456-6. $72.00.  

In this book, the authors present current research in the study of the molecular structure, physiochemical properties and interactions with the environment of cell membranes. Topics discussed in this compilation include the generation and characterization of recombinant HM-1 single-chain anti-idiotype antibodies and their applications; large conductance of calcium activated potassium channels from protein complexes to function in mitochondrial associated ER membranes; unexpected plasma membrane location for a disulfide isomerase protein; and the effects of surface charge and particle size of cell-penetrating peptide/nanoparticle complexes on cellular internalization.

**Cellular Response to Physical Stress and Therapeutic Applications**

**Tadamichi Shimizu and Takashi Kondo (University of Toyama, Toyama, Japan)**

In series: *Cell Biology Research Progress*  
Hardcover: 978-1-62808-918-9. $150.00.  

Not all that cannot be seized is an illusion! Many effective powers in nature cannot be seized, including magnetism, electricity and sound. However, they contribute to shaping the quality of human life on a daily basis, transcending health and disease as they interact with the human body. Magnetism is important for stability on earth; however, exposure of the body to magnetic fields is not inert. Such exposure has been reported to alter hormone secretion and stimulate bone formation in vivo. Its coupling with electricity provides light and heat to our planet at certain wavelengths. Yet, the infiltration of shorter or longer wavelengths can be disastrous. For instance, ultraviolet radiation can cause inflammatory skin reactions and carcinogenesis at certain levels. In addition, ionizing radiation is claimed to be the driving force for the origin of power resources on earth, while human exposure to radiation is related to the world’s most devastating events. On the other hand, sound, which is a mechanical wave, has been reported to affect cells at inaudible levels, causing alterations in the gene expression and cell death. All these energies as such are identified to exert physical stresses in a biological milieu especially when thresholds of exposure are exceeded. But still “hard times” have significance! Researchers have been accumulating knowledge on the biological effects of these physical stressors and their underlying mechanisms on the molecular and genetic levels, that over years they were able to achieve control over these physical stressors for the benefit of human kind. Nowadays, we see most of these energies employed in diagnosis such as magnetic resonance imaging (MRI) and ultrasound as well as in therapeutics. In our rigorous war against cancer, numerous patients have been cured from tumors by physical means such as ionizing radiation, heating (RF and MW hyperthermia or ablation) or high intensity focused ultrasound (HIFU). Through the chapters of this book, the readers will get introduced to such physical stressors and their biological effects. Recent findings on molecular mechanisms will be thoroughly presented. In addition, perspectives on the modulation of these energies to achieve further therapeutic advantages will be discussed.

**Flow Cytometry: Principles, Methodology and Applications**

**Stefanos Papandreou**

In series: *Cell Biology Research Progress*  
2013. 130 pp.  
Hardcover: 978-1-62808-709-3. $120.00.  
e-book: 978-1-62808-710-9. $120.00.  

Flow cytometry is a method to conduct a multiparameter analysis of cells suspended in liquid and passing through a laser beam. As cells pass through the flow chamber they are hit with the laser light beam which is scattered in different directions and recorded as forward light scatter and side light scatter. In this book, the authors discuss the principles, methodology and applications of flow cytometry. Topics include flow cytometry and epifluorescence analyses of freshwater bacterio- and virioplankton communities; application of flow cytometry in phenotyping, analysis and functional characterization of T regulatory and immune suppressor cells; multicolor panel design strategies in rare event analysis of dendritic cells and regulatory T cells; advanced characterization of individual particle morphology light-scattering flow cytometry; and application of flow cytometry in environmental science.

**Ganglion Cells: Morphology, Functional Development and Role in Disease**

**Liora G. Vlastimil**

In series: *Cell Biology Research Progress*  
2014.  
Hardcover: 978-1-63117-432-2. $95.00.  

The ability to observe the world around us through sight provides us with many advantages we may take for granted daily. We are able to recognize a hazard well in advance because we see it; we can find allies because we see them. Further, thanks to the perception of the world that gives us sight, we can collect information to help us develop feelings, such as trust in others, love and sensations, like beauty. However, the mechanism to enjoy this capability is really complex, starting with the structure responsible for receiving, processing and transmitting information to the brain. This book discusses the ways in which ganglion cells are used in the nervous system, as well as its morphology, functional development and role in diseases.

**Mitochondrial Dysfunction: Risk Factors, Symptoms and Treatment Options**

**Kimberly L. Anderson**

In series: *Cell Biology Research Progress*  
Softcover: 978-1-62948-990-2. $72.00.  

Mitochondria, the energy producers of the cell are also the hub of an array of cellular processes such as calcium signaling, apoptosis, heme biosynthesis, cholesterol metabolism, hormone synthesis and ROS production. Since mitochondria are involved in a myriad of cellular functions, they are at the center stage of diverse human pathologies including many degenerative diseases. Topics discussed in this compilation include therapeutic targets in ischemia reperfusion injury and cancer; an energetic approach to insights on mitochondrial roles in cardiac stunning and cardioprotection; and mitochondrial dysfunction of a coworker in treatment of trypanosoma cruzi and leishmania amazonensis infection.

**Myeloid Cells: Biology & Regulation, Role in Cancer Progression and Potential Implications for Therapy**

**Spencer A. Douglas**

In series: *Cell Biology Research Progress*  

Stem cells are the building blocks of the body. They can develop into any of the cells that make up our bodies. Stem cells carry a lot of hope for the treatment of a broad range of diseases and injuries, spanning from cancers, diabetes, genetic diseases, graft-versus-host disease, eye, heart and liver diseases, inflammatory and autoimmune disorders, to neurological diseases and injuries, particularly neurodegenerative diseases, like Alzheimer’s and Parkinson’s diseases, cerebral strokes, and traumatic brain and spinal cord injuries. Stem cell research is therefore as important for our understanding the physio- and pathology of the body, as for development and therapy, including for the nervous system. This book aims at providing an overview and in depth analysis of recent developments in stem cell research and therapy. It is composed of recently published review articles that went through a peer-review process.

**The Medulloblastoma Book**

**Dimitris Kombogiorgas** (Consultant Neurosurgeon, Dr Sulaiman Al Habib Medical Group, Riyadh, Kingdom of Saudi Arabia)


Hardcover: 978-1-63117-190-1. $175.00.

This book is a unique insight into the medulloblastoma, and it provides both a broad review and detailed information. It starts with the history of medulloblastoma as a term and a distinct entity in nosology, and then it explores in-depth the diagnosis, genetics, neurosurgical and oncological management of medulloblastoma patients, their outcome, and long-term complications. Also discussed are novel therapies and next generation clinical trials. This landmark text is written by leading authorities in research and treatment of medulloblastoma. It provides information based on clinical trials, major clinical series, and the outstanding experience and knowledge of the authors. It contains many great illustrations, which help the reader to understand the new knowledge easily. It also includes authoritative and expert opinions and advice regarding the treatment and management of the patients with medulloblastoma. This will help readers avoid mistakes and achieve good results during the management of their patients. This book is useful to medical specialists such as paediatricians, radiologists, neurosurgeons, and oncologists who want to be updated in an integrated way about the current knowledge of medulloblastoma. It is also an excellent tool for medical students, nurses, residents, and young researchers who are interested in medulloblastoma and neuro-oncology. This book aims to enrich the medical literature throughout the world by providing an integrated knowledge of medulloblastoma in a comprehensive and practical way, as it is written by scientists who work at the cutting-edge.

**Photonic Hemostasis – Physiology of Light Signals in the Neutrophil**

**Thomas Stief** (Institute of Laboratory Medicine and Pathobiocchemistry, University Hospital, Marburg, Germany)


Hardcover: 978-1-62618-788-7. $52.00.

Neutrophil granulocytes are the primary defense cells of blood against bacteria, fungi, parasites, or thrombi. Their main weapons and signals are reactive oxygen species (ROS) that release photons. The activation of the assembly of their NADPH oxidase, the few specific triggers and many specific or unspecific primers are of great physiological and pathophysiological importance in inflammation and in hemostasis. The neutrophils generate different types of photons and they can “see” them. The 300-400 nm photons are the main signals and the photons of lowest wave length which seem to especially alert them in emergency. The present book presents research on the regulation of the neutrophil’s ROS generation by different photons, by singlet oxygen (the excited “pro-drug” of photons), by important proteins, or by modulators of the eicosanoid metabolism that should not favor the generation of systemically circulating micro-thrombi.

**Progenitor Cells: Biology, Characterization and Potential Clinical Applications**

**Patrick M. Horton and Brett E. Lawrence**


Hardcover: 978-1-62808-994-3. $95.00.
e-book: 978-1-62808-995-0. $95.00.

In this book, the authors present current research in the study of the biology, characterization and potential clinical application of progenitor cells. Topics discussed include endothelial progenitor cells and cardiovascular disease; isolation, expansion and clinical therapy of human corneal epithelial stem/progenitor cells; genetically engineered blood pharming; regulation of neural progenitor cells by Wnt5a-signaling in the developmental central nervous system; endothelial progenitor cells in a clinical setting; role of microRNAs in endothelial progenitor cells and their implication for cardiac repair; and cellular origins in amphibian regeneration.

**Stem Cells: Cellular and Drug Therapies. Volume 2**

**Philippe Taupin** (Dublin City University, School of Biotechnology, Dublin, Ireland)

In series: *Stem Cells - Laboratory and Clinical Research* 2014. 222 pp.

Hardcover: 978-1-62948-778-6. $150.00.

Stem cells are the building blocks of the body. They can develop into any of the cells that make up our bodies. Stem cells carry a lot of hope for the treatment of a broad range of diseases and injuries, spanning from cancers, diabetes, genetic diseases, graft-versus-host disease, eye, heart and liver diseases, inflammatory and autoimmune disorders, to neurological diseases and injuries, particularly neurodegenerative diseases, like Alzheimer’s and Parkinson’s diseases, cerebral strokes, and traumatic brain and spinal cord injuries. Stem cell research is therefore as important for our understanding the physio- and pathology of the body, as for development and therapy, including for the nervous system. This book aims at providing an overview and in depth analysis of recent developments in stem cell research and therapy. It is composed of recently published review articles that went through a peer-review process.
the golden age after the dark ages. In the future, the research of HSCs will develop more into not only the clinical field but also into the basic research fields. In this book, we describe the past, present, and future of HSC research.

**CHILDREN**

**Childhood Obesity: Causes, Management and Challenges**
*Callum G. Jackson*
In series: *Children's Issues, Laws and Programs*
Softcover: 978-1-62618-874-7. $69.00.
In this book, the authors present current research in the study of the causes, management and challenges in childhood obesity. Topics discussed include the genomics of childhood obesity and obesity-related disorders; the cardiometabolic impact of childhood obesity and the potential role of exercise; contributory influences promoting childhood adiposity in a Mediterranean island population; and an observation of obesity and mental health in the young.

**DENTAL**

**A Window on Surgery and Orthodontics**
*Giuseppe Alessandro Scardina*
In series: *Dental Science, Materials and Technology*
Hardcover: 978-1-62808-948-6. $150.00.
This book offers comprehensive coverage of new techniques, important developments, and innovative ideas in all fields of clinical dentistry. Some topics discussed in this compilation include the biomechanical considerations of the extraction site in orthodontics; prognosis of operculectomy procedures in vertically impacted mandibular third molars; a 3D analysis of the loop position in anterior retraction arch wire and its effect on produced forces; comparative evaluation of subepithelial connective tissue grafts and acellular dermal matrix grafts in the treatment of gingival recession; understanding and evaluating the role of local anesthesia in dentistry; a review and case report of supernumerary teeth; the biological effects of static magnetic fields of commercial samarium-cobalt orthodontic magnets on cultured escherichia coli and staphylococci aureus; subpedicle connective tissue grafts; surgical removal of genial tubercules; and development of root analogue implants.

**DISABILITY STUDIES**

**Pain and the Elderly**
*Mimi M.Y. Tse and Joav Merrick (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)*
In series: *Disability Studies*
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
2013. 293 pp.

Pain is a common issue among the elderly. Common causes of pain in this population include angina, arthritis, bone and joint disorders, neuropathies, and other chronic conditions. When we become more aware of the importance of healthy aging, we often neglect the significance of pain management in older adults and, therefore, pain in older adults is often under-treated. Pain under-treatment in this population is the result of misconceptions regarding the aging process, difficulty accessing care, and the stigma associated with admission of pain and reluctance to medicate. In fact, unrelied pain has a severe impact on both the individual and the society, which further increases the burden of medical and social services. Given the aging population globally and the increasing burden on medical and social services, it is worthwhile to empower older adults to be more independent and take more responsibility in their aging process via the use of various non-pharmacological strategies. It is our hope that this research will increase the quality of life for this population and save health care resources and expenses in the long term. In this book, you will find information on non-pharmacological approaches to manage pain, which we hope will be of use to the reader.

**EMERGENCY MEDICINE**

**The Art of Triage**
*Tracy Anne Edwards (Emergency Nurse Practitioner, Modbury Hospital, Emergency Department, Modbury, South Australia)*
In series: *Nursing - Issues, Problems and Challenges*
2013. 86 pp.
Softcover: 978-1-62808-592-1. $52.00.
e-book: 978-1-62808-619-5. $52.00.
Thousands of patients present to emergency departments each year for medical treatment, and the first person they are greeted by is the triage nurse. The role of the triage nurse is to assess patients as they arrive
and determine the priority of care. This book looks at the history of triage from the first rudimentary form of triage by Baron Dominique Jean Larrey stepping through the world wars, and looking at triage systems in use today. Triage today has evolved from the military form of triage, and is used in emergency departments throughout the world. This book describes four of the triage systems used in The United States of America, Canada, United Kingdom and Australia. The triage nurse requires excellent communication skills, compassion and a sound knowledge base to be able to carry out their role; they also require critical thinking skills. The book looks at critical thinking and why it is an important skill every triage nurse requires.

**FOOD SCIENCE**

*Occurrences, Structure, Biosynthesis, and Health Benefits Based on Their Evidences of Medicinal Phytochemicals in Vegetables and Fruits. Volume 1*  
_Noboru Motohashi (Meiji Pharmaceutical University, Tokyo, Japan)_  
In series: _Food Science and Technology_  
Hardcover: 978-1-62808-895-3. $150.00.  
e-book: 978-1-62808-899-1. $150.00.  
Vegetables and fruits with diverse natural colors contain abundant functional phytochemicals such as carotenoids, anthocyanins and betalains. Additionally, these phytochemicals also contain vitamins, essential amino acids, unsaturated fatty acids, minerals, food enzymes and other plant components. This book describes the relationship of evidence-based functions and mechanisms of the phytochemicals in vegetables and fruits, and foods including cereal crops, nuts, beans, seafood and others. Research has been found that a higher intake of fruits and vegetables has been epidemiologically associated with an improvement of and lower risk and treatment for many diseases such as cancer, hypertension, diabetes, osteoporosis and others.

**GENETICS**

*Advances in Genetics Research. Volume 11*  
_Kevin V. Urban_  
In series: _Advances in Genetics Research_  
Hardcover: 978-1-62948-744-1. $150.00.  
Advances in Genetics Research* presents original research results on the leading edge of genetics discovery. Each article has been carefully selected in an attempt to present substantial research results across a broad spectrum. In this continuing series compilation, the authors present and discuss varied topical data such as late diagnosis in multiple X and Y chromosome disorders; the design and cloning strategies of recombinant allergens for diagnosis and specific immunotherapy; the advances in molecular cloning directing the production of plant proteins and their applications in pathogens control; the genetic basis of congenital heart disease; the large-scale evolution by generating new genes; characteristics of MX gene that shows resistance to vesicular stomatitis virus; the vertebrate fatty acid and retinoid binding protein and proteins; and the clonal evolution and cytogenetic changes in chronic myeloid leukemia.

*Autosomal Dominant Disorders: New Research*  
_Pietro Marciano and Denis M. Lanza_  
In series: _Genetics - Research and Issues_  
2013. 121 pp.  
Softcover: 978-1-62808-760-4. $72.00.  
e-book: 978-1-62808-761-1. $72.00.  
Autosomal dominant inheritance means an abnormal gene from one parent can cause disease, even though the matching gene from the other parent is normal. The abnormal gene dominates. In this book, the authors present new research in autosomal dominant disorders. Topics discussed include the pathophysiology and treatment of autosomal polycystic kidney disease; hereditary haemorrhagic telangiectasia or Rendu-Osler-Weber Syndrome; osteogenesis imperfecta; and autosomal dominant disorders associated with breast cancer.

*Craniofacial Disorders: Causes, Types and Surgical/Treatment Options*  
_Sharon B. Turner and Joseph E. Miller_  
In series: _Congenital Disorders - Laboratory and Clinical Research_  
Softcover: 978-1-62618-923-2. $69.00.  
Craniofacial abnormalities are congenital musculoskeletal disorders which primarily affect the cranium and facial bones. In this book, the authors present current research in the study of the causes, types and surgical/treatment options for craniofacial disorders. Topics include the etiopathogenesis, classification and treatment of temporomandibular joint disorders; paradigm shifts in pre-surgical orthopedics for infants with oral clefts; hearing loss in children with craniofacial anomalies; strabismus in craniosynostosis; and the orofacial features and treatment considerations of Cri du Chat Syndrome.

*Down Syndrome, Beyond the Intellectual Disability: Persons with their own Emotional World*  
_Guadalupe Elizabeth Morales and Ernesto Octavio López (Universidad Autonoma de Nuevo Leon Los Angeles Col. Los Angeles Guadalupe, Nuevo Leon C.P. Mexico)_  
In series: _Disability and the Disabled-Issues, Laws and Programs_  
2013. 156 pp.  
Hardcover: 978-1-62618-467-1. $150.00.  
Emotion is among the most relevant factors of human life, and it exerts a deep influence on all aspects of our lives and behavior. However, little is known about emotional processing or regulation and experience of emotions under an atypical human condition like Down syndrome (DS). This book represents an initial effort to integrate the most important findings regarding the study of emotion on DS from a cognitive point of view. The first part of this book is focused on general aspects of DS. Mainly, the human nature of persons with Down syndrome is highlighted beyond the intellectual disability that is associated to this genetic condition. Furthermore, the second part of the book, thoroughly describes specific details of cognitive-emotional mechanisms underlying the affective life of DS. Moreover, it is emphasized how neuro-architecture aspects related to DS condition typify the emotional human nature of this population. The third part of the book is concerned with cognitive research advances in the study of emotion and DS. Specifically, findings related to emotion face recognition as well as appraisal processes underlying love judgments on DS are discussed from an experimental approach. Finally, future
implications and directions on emotion research on Down syndrome are presented.

Living a Celiac Life
Tiziana Beato, Carolina Ciacci and Monica Siniscalchi (Celiac Center at Department of Medicine and Surgery, University of Salerno, Baronissi Campus, Italy)
In series: *Immunology and Immune System Disorders* 2014.
Softcover: 978-1-62948-803-5, $52.00.
e-book: 978-1-63117-249-6, $52.00.
This novel was written to focus on some relevant aspects of a disease from the patients’ perspective but also to show the caregivers’ perspective. It is about celiac disease for two reasons. First, celiac disease is an emerging disease, so frequent to be considered a ‘social epidemic’ and it involves several levels of intervention, beside the medical one. Secondly, the writers know well celiac disease because of many years of work with celiac patients. The story is about a common case of celiac disease, not a real one but a representative one: a young woman, her symptoms that worsen and allow the diagnosis. Celiac disease is not a rare disease and one must think of it. Every action intended to improve the awareness of celiac disease will increase the diagnosis rate but also ease the burden of a ‘special’ life. A diagnosis of celiac disease gives a great opportunity to improve one’s people life, both because of better health and better quality of life. The aim of this novel is to offer a simple tool to increase the knowledge of celiac disease in people but also to ‘humanize’ as much as possible what is for someone an extraordinary event.

Microarrays: Principles, Applications and Technologies
James V. Rogers (Battelle, Columbus, OH, USA)
In series: *Genetics - Research and Issues* 2014. 347 pp.
Hardcover: 978-1-62948-669-7, $150.00.
e-book: 978-1-62948-713-7, $150.00.
The sequencing of the human genome was a pivotal event in science that opened the door to exploring the structure and function of genes and their regulation. The activation or suppression of transcribed genes is critical to the orchestration of everyday biological processes at the cellular, tissue, and physiological levels. The rapid advance of science and technology has yielded the development of the microarray technique, which has propelled a much deeper understanding of the genome. By combining these technological advances in microarrays with statistical and bioinformatics software, investigators are now able to perform scientific investigations geared towards answering unique biological problems that encompass many fields of research from genetics and evolution to molecular medicine, health, and disease. This book provides an overview of the use and application of microarrays throughout the life sciences to address diverse complex biological questions. In this collection, authors present information on using microarrays to unlock molecular mechanisms and gene expression patterns associated with research areas ranging from biodefense, pathological changes, and monitoring antimicrobial resistance genes to diagnostics, marine biodiversity, and dermal toxicology.

Neurofibromatosis Type 1: Symptoms, Treatment and Prognosis
Matthias A. Karajannis and Jeffrey Allen (Department of Pediatrics, Division of Pediatric Hematology/Oncology, NYU Langone Medical Center, Hassenfeld Children’s Center for Cancer and Blood Disorders, New York, NY, USA)
Hardcover: 978-1-62808-159-6, $150.00.
e-book: 978-1-62808-166-7, $150.00.
Neurofibromatosis Type 1 (NF1) is a relatively common genetic disorder that predisposes affected individuals for developing multiple tumors, predominantly neurofibromas. NF1 is caused by a loss of the tumor suppressor protein neurofibromin, which was discovered over 20 years ago. NF1 patients develop a wide spectrum of benign tumors, including in the skin, deep soft tissues and brain, as well as malignant tumors including malignant peripheral nerve sheath tumors, malignant gliomas and acute myeloblastic leukemia. NF1 patients are also at risk for a spectrum of orthopedic and neurological disorders, including bone abnormalities and speech and learning disorders. This book, edited by Matthias Karajannis, MD, MS and Jeffrey Allen, MD, who direct the Comprehensive NF Center at NYU Langone Medical Center in New York, represents a valuable resource for both scientists and clinicians involved in NF1 research and patient care. Each chapter is written by expert authors in the field and addresses one or several specific topics in NF1 with a focus on disease biology, genetics, diagnostics and/or clinical management. The latest scientific advances in the field of NF1 are discussed, along with practical management recommendations and an outlook on future avenues of NF1 research.

Oncogenes: Classification, Mechanisms of Activation and Roles in Cancer Development
Luciano Torres
Hardcover: 978-1-62618-868-6, $95.00.
An oncogene is a modified gene, or a series of nucleotides that encode a protein, and direct the cell to the development of a neoplastic phenotype. Usually, oncogenes are involved in tumor development and increase the possibility that the development of a cell directs towards cancer. In this book, the authors present current research in the study of the classification, mechanisms of activation and role in cancer development of oncogenes. Topics include the role of oncogenes in gynecological pathology; oncomirs as the next frontier of oncogenes affecting cancer etiology and tumor progression; the role of the epidermal growth factor receptor as a therapeutic target in glioblastoma and other malignancies; and tumor suppressors involved in DNA repair and carcinoprevention.

Recent Trends in Gene Expression
Subhrangsu S. Mandal (Department of Chemistry and Biochemistry, C.P.B. The University of Texas at Arlington, Arlington, TX, USA)
Hardcover: 978-1-62618-680-4, $175.00.
e-book: 978-1-62618-738-2, $175.00.
The term “Gene” refers to a segment of DNA present inside the genome that code for a protein. Depending on the organism, a particular genome may encode thousands of diverse types of genes responsible for various functions. These genes are differentially expressed and tightly regulated as needed at different stages of cell and physiological functions including cell differentiation and development. Gene expression may be influenced by various environmental and stimuli such as temperature, nutrients, hormones, stress etc. Though the fundamental mechanism of transcription (production of mRNA from the protein coding genes) is very similar in different organisms, the mechanism of gene regulation and the machineries involved are distinct for different organisms. In the post genomic and epigenomic era, it is increasingly being recognized that gene expression is not only
controlled gene sequences but also various other non-genomic factors that include protein and DNA modifications and non-coding RNAs. Various aspects of gene expression in prokaryotes and eukaryotes, the mechanism of transcription and gene regulation and influences of various environmental factors are highlighted in different chapters of this book.

**Sexual Selection: Evolutionary Perspectives, Mating Strategies and Long-Term Effects on Genetic Variation**
*Robert M. Geldani and Matthew A. Davin*
In series: *Genetics - Research and Issues*
Softcover: 978-1-62808-805-2. $72.00.

In this book, the authors present current research in the study of the evolutionary perspectives, mating strategies and long-term effects on genetic variation of sexual selection. Topics discussed in this compilation include sexual dimorphism in insect longevity; evidence of natural and sexual selection shaping the size of nuptial gifts among a single bush-cricket genus; mate choice copying in both sexes of the guppy; and sexual selection under parental choice.

**Whole Genome Sequencing: Privacy and Security in an Era of Genomic Advancements**
*Joseph P. Damon*
In series: *Genetics - Research and Issues*
Hardcover: 978-1-63117-157-4. $110.00.
e-book: 978-1-63117-171-0. $110.00.

Over the course of less than a decade, whole genome sequencing has progressed from being one of our nation’s boldest scientific aspirations to becoming a readily available technique for determining the complete sequence of an individual’s deoxyribonucleic acid (DNA)—that person’s unique genetic blueprint. This book focuses on the privacy and progress in whole genome sequencing; and provides a scientific background for policymakers in genetic testing.

**Health**

Abdominal Wall Defects: Prevalence, Surgical Management Strategies and Clinical Care Outcomes
*Jose J. Diaz (University of Maryland School of Medicine, Baltimore, MD, USA)*
In series: *Congenital Disorders - Laboratory and Clinical Research*
Hardcover: 978-1-62948-672-7. $150.00.

Since general surgeons first started performing laparotomies in the late 1880’s, acquired hernias and abdominal wall defects have become a surgical disease of their own. Many surgeons have made it their life’s work to develop surgical techniques, design hernia meshes or utilize biologic tissue for repair of these abdominal wall defects. Hernias are defined as a defect in the normal architecture of the abdominal wall musculo-aponeurotic structure. They are subdivided into congenital or acquired hernias. The ventral or incisional hernia defects are rare due to the failure of normal healing of the incision after a laparotomy. The approach to the initial repair may be quite straightforward in the patient with a simple fascial defect who is otherwise healthy. As the size of the defect gets beyond 4 cm, or the patient has a significant co-morbid disease, other considerations must come into play. The component separation technique for abdominal wall reconstruction has brought many new young surgeons to focus their skills toward improving it. With the advances in critical care and peri-oparative resuscitation, together with knowledge of the abdominal compartment syndrome, surgeons are addressing very complicated ventral hernias. They commonly have significant loss of domain, tissue loss due to infection or tumor, or an entero-atmospheric intestinal fistula. The combined information in this text will help the surgeon identify the right surgical technique for the right patient. The focus of the text is the evaluation, prevalence, surgical techniques, and outcomes of patients undergoing complex ventral hernia repairs. The use of preoperative evaluation imaging is reviewed. The multiple etiologies of hernia and abdominal wall defects are mentioned. The surgical repairs utilizing tissue repairs, both synthetic and biologic mesh are reviewed, and the component separation is discussed in detail. New endo/laparoscopic component separation techniques are also described. This text will become a must-have for every surgeon who takes care of patients with complex ventral hernias.

**Apheresis: Methods, Types and Potential Complications**
*Kronos Kostandin*
In series: *Recent Advances in Hematology Research*
2014.
Softcover: 978-1-63117-442-1. $72.00.

Lipoprotein apheresis is a selective lipid-lowering extracorporeal treatment where atherogenic apo-B100-containing lipoproteins are removed from circulation. The successful use of plasma exchange (plasmapheresis) to treat homozygous familial hypercholesterolemia (FH) was first described in 1975. Lipoprotein apheresis is now accepted as the treatment of choice for patients with homozygous familial hypercholesterolemia and for heterozygotes with cardiovascular disease refractory to lipid-lowering drug therapy. This book discusses topics that include methods used for apheresis, the different forms of the disease, and potential complications that may occur.

**Bacteremia: Risk Factors, Treatment and Potential Complications**
*Jodie P. Williams*
In series: *Bacteriology Research Developments*
Hardcover: 978-1-63117-290-8. $95.00.
e-book: 978-1-63117-291-5. $95.00.

Expert Committees have developed antimicrobial protocols for the prevention of potential complications derived from bacteremia of oral origin, such as infective endocarditis. These preventive protocols have subsequently been revised and modified based on the extensive research that has been performed in this field, including studies on the efficacy of antimicrobial prophylaxis in the prevention of bacteremia of oral origin. This book provides insight on the potential implications of bacteremia of oral origin, and prevention of these potential implications with antibiotics and antiseptics. The book also discusses a rare cause of bacteremia known as Lactobacillemia.

**Bullying: A Public Health Concern**
*Jorge C. Srabstein and Joav Merrick (Clinic for Health Problems Related to Bullying, Children's National Medical Center, Montgomery County Outpatient Regional Center, Rockville, MD, USA)*
In series: *Health and Human Development*
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Chronic Kidney Disease: Signs/Symptoms, Management Options and Potential Complications
Rasheed A. Balogun, Emaa M. Abdel-Rahman and Seki A. Balogun (University of Virginia, Divisions of Nephrology and Geriatrics, USA)
In series: Nephrology Research and Clinical Developments
2013. 335 pp.
Hardcover: 978-1-62948-514-0. $175.00.
e-book: 978-1-62948-517-1. $175.00.
Chronic kidney disease is a non-communicable disease that has experienced a global surge in incidence and prevalence over the past few decades, and it has been increasingly considered a major contributor to the global disease burden and mortality. In prior years, most of the awareness and treatment of patients with chronic kidney disease, particularly in the developed world, had focused on patients with end stage renal disease, one of the potential outcomes of chronic kidney disease. More recent epidemiological data has shown that the majority of the burden of chronic kidney disease occurs in patients who are in the earlier stages of this condition, prior to end stage renal disease. The opportunities to recognize the signs, symptoms, and complications, and to consider extant treatment paradigms are useful in the global environment (both in developed and developing nations). We are very happy to present this work, authored by an international panel of experts, as a useful addition and tool for the global efforts to address the burden of chronic kidney disease.

Deep-Vein Thrombosis: Risk Factors, Treatment and Clinical Outcomes
Francisco Irving
In series: Recent Advances in Hematology Research
2014.
Softcover: 978-1-63117-469-8. $72.00.
 Inferior Vena Cava (IVC) filters have become an important part of deep venous thrombosis and pulmonary embolism treatment and prevention. With the advent of retrievable filters a new era of IVC instrumentation has been initiated. This book will begin to review the history of IVC filtration, indications for permanent and temporary filter use and filter use in special populations such as the pregnant patient or those with upper extremity venous thrombosis. The authors also review the technical aspects of filter placement and retrieval and discuss immediate and long-term complications from IVC filters. The book will also continue to discuss how acute spinal cord injury provides risks for developing deep vein thrombosis; and discuss the efficacy and safety of novel oral anticoagulants for venous thromboembolisms.

Evidence Based Treatments for Eating Disorders: Children, Adolescents and Adults, Second Edition
Ida F. Dancyger and Victor Fornari (Long Island Jewish Medical Center (including Cohen Children's Medical Center & Zucker Hillside Hospital), Clinical Associate, Professor of Psychology in Psychiatry, Hofstra North Shore LIJ School of Medicine, NY, USA)
In series: Eating Disorders in the 21st Century
2014.
Hardcover: 978-1-63117-400-1. $245.00.
This edited volume represents an opportunity to bring together current evidence in the treatment of eating disorders. The book includes contributions from many of the leading international experts in the field of eating disorders, as well as provides a compendium of a wide range of best studied treatments. This second edition is intended to
serve as a guide to the clinician searching about how to proceed with treatment while caring for the individual with an eating disorder. The authors generously shared their contributions, in addition to their clinical insight and wisdom. The reader will appreciate and benefit from the expertise of those assembled in this text. Ultimately, patient care relies on the artful clinician who will integrate the evidence to inform the practice and tailor the treatment for each individual. This text may serve as a useful reference, both for beginning and seasoned clinicians.

Health Promotion: Community Singing as a Vehicle to Promote Health
Jing Sun, Nicholas Buys and Joav Merrick (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
In series: Health and Human Development
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Softcover: 978-1-62618-908-9. $52.00.
Singing is a great vehicle for communal activity, but it has disappeared as a part of adulthood in many communities. Children still sing in kindergarten, but when do we as adults sing together? Singing has a wide range of personal benefits besides learning about music and how to create it. Developing and improving healthy singing techniques has been shown to have multiple physiological and social benefits for the participants, while also being a thoroughly enjoyable experience. Working with the voice has many physical benefits, such as improved posture and respiratory strength, increased energy levels and also stimulation for the mind. There are also many social and personal benefits, such as boosted self-esteem and confidence, improved communication and listening skills, raised self-awareness and awareness of others and developed team working skills. One area of communal activity that has received increasing attention is participative community singing, because it entails aerobic exercise, social interaction and promotion of a sense of connectedness. We believe it may be a good avenue to increase sense of connectedness and to promote participation in exercise activities. In this book we provide persuasive evidence from research to demonstrate the power of community singing in promoting social and emotional wellbeing, preventing depression, promoting healthy behaviours and promoting access to health services in Aboriginal and Torres Strait Islander people in Australia. In addition, the health effects of Tai Chi as another form of the arts is also explored. Academics have collaborated with practitioners to produce the study results, all of which are quantitative and report on the effects of community singing practices for a marginalised population in Australia.

Health Promotion: Strengthening Positive Health and Preventing Disease
Jing Sun, Nicholas Buys and Joav Merrick (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
In series: Health and Human Development
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Hardcover: 978-1-62257-870-2. $85.00.
The World Health Organization defines health promotion “as the process of enabling people to increase control over and to improve, their health”. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions. Discussions on how to define health promotion already emerged in the 1970s from the Lalonde report in Canada, which contained a health promotion strategy “aimed at informing, influencing and assisting both individuals and organizations so that they will accept more responsibility and be more active in matters affecting mental and physical health”. Health promotion and health service, using a socio-ecological approach, has been effective to promote mental and physical health, and improve social functioning and social support in a range of population groups. A socio-ecological approach addresses the importance of the interaction between individual level characteristics, families, institutions, and community support to promote health to an optimal level. There is increasing evidence to indicate promoting resilience at both the individual and organisation levels is important to help individuals cope with daily stress challenges, and buffer the adverse effects of distress, abuse and neglect, psychological traumatic events, and disease. The key concepts of resilience promotion is structured around self-esteem, self-efficacy, optimism, goal orientation, autonomy, and the ability to seek social and environmental support. These concepts play an important role in improving quality of life, chronic disease conditions, increasing exercise levels, and reduction of risk health behaviours.

Human Developmental Research: Experience from Research in Hong Kong
Daniel T.L. Shek, Cecilia M.S. Ma, Lu Yu and Joav Merrick (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Hardcover: 978-1-62808-166-4. $150.00.
Human development research commonly addresses the “what”, “when”, “how”, “why”, “who”, and “where” of human development. For example, with reference to the development of resilience in adolescence, researchers often ask what are the components of resilience (“what”), their development at different time points (“when”), and the related trajectories (“how”). Researchers also attempt to understand factors influencing resilience (“why”) in different adolescents (“who”) in different cultures (“where”). In many adolescent research studies, researchers are interested in asking questions about "relationships" among developmental events and concepts, such as the relationship between the family environment and resilience. Besides, research questions regarding “differences” are raised by researchers, such as differences between early adolescents and late adolescents on resilience, and differences in resilience in Chinese and African adolescents. Against this background we present in this book several chapters on the statistical analyses in human development research using real-life datasets based on the positive youth development project (P.A.T.H.S.) in Hong Kong in a pioneer attempt using different Chinese contexts with the wish that we can facilitate Chinese researchers to understand human development research and understand more about statistical analyses.

Immune Modulation by Probiotics: State of the Art
A. Di Cerbo, B. Palmieri and Maria Aponte
(Department of Surgery and Surgical Specialties,
of mesquite (Prosopis spp); common bean as an emerging model grain legume; the health benefits of legumes; and current update in methodologies for extraction and analysis of proteins and isoflavones.

**Listeria monocytogenes: Food Sources, Prevalence and Management Strategies**

*Edmund C. Hambrick*

In series: *Bacteriology Research Developments*

2014. 325 pp.

Hardcover: 978-1-63117-054-6. $150.00.

Listeria monocytogenes has emerged as one of the major foodborne pathogens, characterized by high hospitalization and case fatality rates in humans. In this book the authors present current research in the study of this foodborne pathogen. Topics discussed include the natural approaches for controlling L. monocytogenes; L. monocytogenes in ready-to-eat foods and intervention strategies; carbohydrate utilization by L. monocytogenes and its influence on virulence gene expression; ozone and atmospheric cold plasma for control of L. monocytogenes; the potential of visible light as a means of controlling L. monocytogenes in the food chain; spatial distribution of L. monocytogenes and pseudomonas fluorescens in mixed biofilms; the main hygienic aspects of the processing and marketing of L. monocytogenes and Salmonella; detection of L. monocytogenes and Listeria spp. in food and feed products; prevalence and control of L. monocytogenes in food processing environments; antimicrobial resistance, and growth kinetics of L. monocytogenes in ready-to-eat foods; novel technologies for controlling L. monocytogenes in ready-to-eat foods; the effect of soil abiotic and biotic factors on the preservation and reproduction of L. monocytogenes; the structure and function of the pathogen; and the prevalence of L. monocytogenes and occurrence of listeriosis from ready-to-eat fresh fruits and vegetables.

**Nematodes: Comparative Genomics, Disease Management and Ecological Importance**

*Lee M. Davis*

In series: *Parasites and Parasitic Diseases*


Hardcover: 978-1-62948-764-9. $95.00.
e-book: 978-1-62948-765-6. $95.00.

Nematodes are a highly assorted group of invertebrates occupying many terrestrial and aquatic habitats. Recent research has focused on the examination of nematode life history and biological traits to reflect the key functional attributes and infer the effects of environmental variables and human activities. In this book, the authors discuss the interaction between lectins and nematodes, biodiversity and distribution of nematodes belonging to the families Longidoridae and Trichodoridae in different habitats, analytical method for chemical characterization of nematodes, and the use of plants as natural sources of nematicides.

**Posture: Types, Exercises and Health Effects**

*Sarah A. Curran (Wales Centre for Podiatric Studies, Cardiff School of Health Sciences, Cardiff Metropolitan University, Cardiff, UK)*

In series: *Human Anatomy and Physiology*


Hardcover: 978-1-63117-252-6. $150.00.
e-book: 978-1-63117-254-0. $150.00.

This book presents an overview of human posture and focuses on how it can be influenced by a number of sporting and physical activities as well as biomechanical, physiological, and psycho-sociological factors. It presents a range of chapters that discuss various assessment protocols to posture and details how certain approaches such as yoga, postural change theory, and pilates can be integrated into various management programs. It brings together invited contributions from...
Sepsis: Diagnosis, Management and Health Outcomes  
Nancy Khardori  
In series: Allergies and Infectious Diseases  
Hardcover: 978-1-63117-244-1. $150.00.  
The book discusses multiple aspects of sepsis syndrome seen in all age groups of patients and by all specialties in medicine. The syndrome is the aftermath of the dissemination of an infectious process into and through the bloodstream. This allows the bacteria, bacterial products and cytokines to reach multiple organs, resulting in their dysfunction. In spite of the advances in supportive care and antibiotic therapy, the outcome of sepsis has not changed significantly. The inadequacies in the current diagnostic modalities and conflicting inconclusive results of investigations on novel treatments have contributed significantly to the lack of progress in the management of sepsis. Antibiotic overuse in and outside the intensive care unit driven by the lack of microbiological data and definitive diagnosis lends to the creation and transmission of antibiotic resistant bacteria, which has added to the challenges and poor outcomes of sepsis syndrome. The nine chapters in this book are authored by experts in various aspects of sepsis from North America, South America, Europe and Asia. State of the art information is provided in the areas of pathogenesis, epidemiology, diagnosis and management of sepsis. Each chapter has a contribution on the role of various evidence-based preventive strategies to reduce the incidence and subsequent poor outcomes of sepsis syndrome.
as the main causes of suicide. How do we comfort and explain to suicide survivors suicide of a loved one having bombarded the society with the fact that suicide is a preventable death? Is it a matter of convenience for all concerned to have something to blame suicide on for our failure to prevent it? As long as we allow politics to govern suicide prevention, the cost of suicide will increase year upon year and cycles in suicide trends will continue their pattern. Prevention starts at home, in school and in the community at the earliest age possible.

Textbook on Evidence-Based Holistic Mind-Body Medicine: Healing the Mind in Traditional Hippocratic Medicine
Søren Ventegodt (Quality of Life Research Center, Copenhagen, Denmark) and Joav Merrick (Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
In series: Health and Human Development
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
2013. 270 pp.
Hardcover: 978-1-62257-112-3, $150.00.
e-book: 978-1-62257-175-8, $150.00.
Holistic medicine, or quality of life as medicine, as we often call it, is basically a strategy for improving the patients quality of life, through mobilizing of inner resources. This can never harm and will almost always benefit the patient’s wellbeing and often also help him or her to fight back the disease. The cure is very much the same for all patients: Help to know yourself better and to step into character and be more yourself, and more in tune with the universe. So it can be started right away, also without a specific diagnosis. Is modern, holistic medicine powerful? Oh yes, very much so. Holistic medicine is a truly powerful medicine, in spite of nobody really understanding the deepest structures of consciousness, the connection between mind and body, and the way holistic medicine works. But just because our scientific understanding admittedly still is limited we should not stop doing what we know works. In this book the authors cover the basic principles of healing and ethics of traditional Hippocratic medicine from a new and modern scientific approach.

Type 1 Diabetes: Causes, Treatment and Potential Complications
Zachary Pearce
In series: Endocrinology Research and Clinical Developments
Softcover: 978-1-63117-000-3, $72.00.
e-book: 978-1-63117-001-0, $72.00.
Type 1 diabetes is a chronic autoimmune disease. Type 1 diabetes was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes. Type 1 diabetes develops when the body’s immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin that regulates blood glucose. To survive, people with type 1 diabetes must have insulin delivered by injection or a pump. Topics discussed in this compilation include genetic and epigenetic studies of type 1 diabetes; blood pressure and diabetes during pregnancy; comparison of diseases-specific quality of life, metabolic control and cardiorespiratory fitness in physically active and inactive youths with type 1 diabetes; stem cells for the treatment of patients with type 1 diabetes; and the causes and potential complications of type 1 diabetes.

Urinary Tract Infections: Epidemiology, Pathogenesis and Prevention
Kristen E. Murrell
In series: Renal and Urologic Disorders
Hardcover: 978-1-63117-180-2, $95.00.
Urinary tract infections (UTI) are one of the most common bacterial infections seen. Episodes of UTI can effectively be treated with antibiotics, often given on an empirical basis. In this book, the authors present current research in UTIs. Topics discussed in this compilation include the antibiotic and non-antibiotic methods of prophylaxis for recurrent UTIs; UTIs in children; virulence factors of uropathogenic Escherichia coli and their role in development of UTIs; and the treatment for UTIs due to multidrug-resistant bacteria.

Venous Thrombosis: Risk Factors, Management and Complications
Caroline H. Gutmann
In series: Recent Advances in Hematology Research
Hardcover: 978-1-63117-293-9, $120.00.
e-book: 978-1-63117-294-6, $120.00.
Thrombophilia can be defined as a group of inherited or acquired disorders that increase the risk of developing thrombosis. Venous thromboembolism (VT) is considered a multifactorial disease produced by a sum of risk factors that predispose to the thrombotic event. This predisposition includes genetic and acquired defects. Thrombosis can occur in any section of the venous system, but commonly manifests as deep vein thrombosis of the leg and pulmonary embolism. Major complications of venous thrombosis are a disabling post-thrombotic syndrome, pulmonary hypertension, and sudden death due to a pulmonary embolism and therefore, it poses a burden on health economy. Venous thrombosis is a common clinical challenge for doctors of all disciplines, as it is a complex multi-causal disease. This book discusses in further detail the many complications and risk factors caused by venous thrombosis.

HEALTH CARE

Bioengineering Nursing: New Horizons of Nursing Research
Hiromi Sanada (Department of Gerontological Nursing Wound Care Management) and Taketoshi Mori (Department of Life Support Technology (Molten), School of Health Sciences & Nursing, Graduate School of Medicine, the University of Tokyo, Japan)
In series: Nursing - Issues, Problems and Challenges
Hardcover: 978-1-63117-336-3, $150.00.
The human lifestyle is changing. With the emergence of an aging society, this brings about a paradigm shift from diagnostic and curative landscape to QOL care and well-being to support individuals and their society. Nursing is expected to be the core of this new scheme. A bidirectional relationship between nursing and other disciplines such as biology science, basic medicine, engineering, and information technology has been limited because of the complexity and the broad characteristics of the nursing domain. Bioengineering in nursing is a promising key solution to this challenging issue. It seeks to incorporate molecular biological methodology into the nursing science area and to deliver the findings to the clinical practice through the development of
novel technology products or services created by bioengineering in nursing. In addition, nursing translational research explores clinical problems, and visualizes and defines the target point to be resolved. This process allows the development of technology with the properties of noninvasiveness, real time assessment, and intervention with partnership. Throughout the eight chapters, this book offers a viewpoint of the way of collaboration in bioengineering nursing research. The book explains the concept of bioengineering in nursing to those who have already been involved in such research, who seek cooperation with researchers in other disciplines, or who are at the beginning of their research training, such as graduate students or postdoctoral fellows. The basic knowledge of several core research disciplines is explained to help readers from a variety of research backgrounds. The bioengineering nursing loop is illustrated by a model of developmental research with some supportive examples. The authors attempt to encourage the field of this new bioengineering in nursing concept and its educational aspect, and to promote novel nursing innovations.

Dental Services in the United States: Analysis, Costs and Trends

Yves A. Rosseau
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-62948-499-0. $110.00.
High rates of dental disease remain prevalent across the nation, especially in vulnerable and under-served populations. According to national surveys, 42 percent of adults with tooth or mouth problems did not see a dentist in 2008 because they did not have dental insurance or could not afford the out-of-pocket payments, and in 2011, 4 million children did not obtain needed dental care because their families could not afford it. In 2011, the Institute of Medicine reported that there is strong evidence that dental coverage is positively tied to access to and use of oral health care. For families without dental coverage, federally funded health centers may offer an affordable dental care option. Health centers are required to offer sliding fee schedules with discounts of up to 100 percent for many low-income patients. This book examines dental services in the United States with a focus on (1) trends in coverage for, and use of, dental services; (2) trends in payments by individuals and other payers for dental services; and (3) the extent to which dental fees vary between and within selected communities across the nation. To do this work, the Government Accountability Office (GAO) examined the office of Health and Human Services (HHS) national health survey data and national dental expenditure estimates, dental insurance claims data, and health center dental fees in 18 selected communities (based on census region, population, and dental claims volume).

Doctors and Patients – All You Wanted To Know and More

Ian McDonald (Royal Australasian College of Physicians)
In series: Health Care Issues, Costs and Access
Softcover: 978-1-62806-989-9. $75.00.
In the recently completed work entitled ‘The Crisis in Medicine and the Rise of the Reflective Physician’, a comprehensive account of the serious problems of health care and suggested solutions are discussed. In this current version, ‘Doctors and Patients - All You Wanted to Know and More’, the topics discussed are directed primarily at the interested lay person. In order to gain an overview of the argument, one can read the chapter headings, the subheadings, the first line of each paragraph and the sections highlighted. Is it yet another diatribe against the role of science in medicine? It is not; a deep respect exists for its magnificent achievements. Medicine rode to fame on the coat-tails of science during the 19th and 20th centuries. More recently, the public images of both have become somewhat tarnished. Yet there have been some brilliant medical scientific advances, to the use of autopsies to locate diseases in specific body tissues, design of ‘scopes to examine the heart and to peer into every body cavity and orifice, identification of the ‘quid divinum’ causing infectious disease - bacteria - and anaesthesia, surgery, and childbirth has become safer. Doctors have reaped rewards in the form of social prestige and formidable political clout. Nevertheless, hardly any scientific medicine had come into full flower until after World War II. Then there were signs of a backlash. Why then has medicine fallen from its former grace?

Electronic Health Records: Selected Analyses on Use and Incentive Payments

Stacie Eastman
In series: Health Care Issues, Costs and Access
Softcover: 978-1-63117-196-3. $52.00.
One goal of the federal 2009 Health Information Technology for Economic and Clinical Health (HITECH) Act is to advance the use of health information technology by providing Medicare and Medicaid incentives to physicians and hospitals that adopt and demonstrate “meaningful use” (MU) of electronic health record (EHR) systems. This book presents a nationally representative profile of physician use of EHR systems. The book also discusses the use of EHR’s in residential care communities; physician experiences with EHR systems; the use and characteristics of EHR systems among office-based physician practices; and physician adoption of EHR systems in the United States.

End-of-Life Care: Ethical Issues, Practices and Challenges

Maria Rossi and Luiz Ortiz
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-62808-555-6. $95.00.
Human death is a mystery. Although scientists have identified the criteria, states, and signs of biological death, undoubtedly the issues of dying and death have a wider meaning. In this book, the authors present current research in the study of the ethical issues, practices and challenges of end-of-life care. Topics discussed include a spiritual perspective of end-of-life experiences; a veterinary oncologist's interprofessional crossover perspective of euthanasia for terminal patients; diabetes and end-of-life care; helping families to cope after the death of a loved one; multidimensional aspects of nursing care for dying patients; spirituality at the end-of-life; challenges of promoting end-of-life care in residential care homes in Hong Kong; and the current situation and challenges of home end-of-life care for the elderly in Japan.

Health Education: Parental and Educators’ Perspectives, Current Practices and Needs Assessment

Yvon B. Larock and Denis C. Gustave
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-62948-206-4. $150.00.
Parental support is a well-accepted determinate of children’s physical activities. Effective health education strategies may also include facilitating parental involvement in community and school advocacy related to their perceived need for changes. In this book, the authors present current research in the study of health education using parental and educators’ perspectives, current practices and needs assessment.
Topics discussed in this compilation include moving beyond the hierarchical knowledge/power nexus in anti-FGC campaigns in Africa; consensus, strategies, and potential health promoting schools; community as a setting for future-oriented health promotion in Austria; parental attitudes and perceptions related to their children’s physical activity and eating patterns; influence on academic performance on perception and health habits against noise by Spanish secondary-school students; and the importance of parents and teachers as stakeholders in school-based healthy eating programs.

**Health Insurance Exchanges and the Assistance Role of Navigators**  
*Wallace V. Bremer*  
In series: *Health Care Issues, Costs and Access*  
Softcover: 978-1-62948-614-7, $52.00.  
e-book: 978-1-62948-615-4, $52.00.  
The fundamental purpose of a health insurance exchange is to provide a structured marketplace for the sale and purchase of health insurance. The authority and responsibilities of an exchange may vary, depending on statutory or other requirements for its establishment and structure. The Patient Protection and Affordable Care Act requires health insurance exchanges to be established in every state by January 1, 2014. The ACA provides certain requirements for the establishment of exchanges, while leaving other choices to be made by the states. Qualified individuals and small businesses will be able to purchase private health insurance through exchanges. Issuers selling health insurance plans through an exchange will have to follow certain rules, such as meeting the private market reform requirements in the ACA. While the fundamental purpose of the exchanges will be to facilitate the offer and purchase of health insurance, nothing in the ACA prohibits qualified individuals, qualified employers, and insurance carriers from participating in the health insurance market outside of exchanges. This book outlines the required minimum functions of exchanges, and explains how exchanges are expected to be established and administered under the ACA. The coverage offered through exchanges is discussed, and the book concludes with a discussion of how exchanges will interact with selected other ACA provisions.

**Indian Health Service: Select Issues and Developments**  
*Isaac Dubois*  
In series: *Health Care Issues, Costs and Access*  
2013. 152 pp.  
Hardcover: 978-1-62948-497-6, $110.00.  
The Indian Health Service (IHS) is an agency in the Department of Health and Human Services (HHS) that provides health care to American Indians and Alaska Natives. When care at an IHS-funded facility is unavailable, IHS’s Contract Health Service (CHS) program pays for care from non-IHS providers if the patient meets certain requirements and funding is available. The Patient Protection and Affordable Care Act requires the Government Accountability Office (GAO) to study the administration of the CHS program, including a focus on the allocation of funds. IHS uses three primary methods to determine the allocation of CHS funds to the 12 IHS geographic area offices: base funding, which accounts for most of the allocation; annual adjustments; and program increases, which are provided to expand the CHS program. This book examines (1) the extent to which IHS’s allocation of CHS funding varied across IHS areas, and (2) what steps IHS has taken to address funding variation within the CHS program.

**Medicaid and Health Insurance Exchanges: Comparing Benefits and Costs**  
*Scott Ahearn and Maria Antonino*  
In series: *Health Care Issues, Costs and Access*  
Hardcover: 978-1-62808-437-5, $135.00.  
The Patient Protection and Affordable Care Act (ACA) expands health insurance coverage primarily through two mechanisms: by expanding the existing Medicaid program and by establishing new health insurance exchanges where certain individuals and businesses can purchase private health insurance. Under ACA, Medicaid and exchanges are envisioned to work in tandem, with the potential to provide a continuous source of subsidized coverage for lower-income individuals and families, beginning in 2014. This book provides an analysis of some of the key similarities and differences between Medicaid and insurance plan structure in plans offered through exchanges. Because Medicaid services vary by population covered and by state, and exchange plans can also vary by state, this book provides insight into the complexities and issues when comparing beneficiary benefits and costs to individuals for Medicaid and the exchanges. The inherent variations in Medicaid and the uncertainty about exactly how the exchanges will operate are just two of the factors that complicate this comparison.

**Medical Data, Information Economy and Federative Networks: The Concepts Underlying the Comprehensive Electronic Clinical Record Framework**  
*Giovanni Rinaldi, Antonio Gaddi, Fabio Capello*  
(University of Bologna, Casalecchio di Reno (BO), Italy)  
In series: *Health Care Issues, Costs and Access*  
In series: *Public Health in the 21st Century*  
2013. 408 pp.  
Hardcover: 978-1-62257-845-0, $230.00.  
The book aims to present some fundamental pillars that must be taken into account for the design and construction of a medical record system. The work does not claim to be exhaustive, as the spirit of the book is to propose to reason out on some issues that have to be considered as the main features to take in consideration in the design and deployment of medical record systems, trying to bring positive issues to the general discussion. The first challenge has been to face the issues proposed in a co-productive way, in which the point of views of different actors (technicians, doctors, policy makers) are harmonized in shared visions, where the requirements that must be posed and considered become opportunities and challenges to overcome, also offering different shared solutions based on technology, organizational changes, medical actions and workflow in a unitary way.

**Private Health Insurance and the Affordable Care Act: Provisions and Reforms**  
*Duke Riggs*  
In series: *Health Care in Transition*  
2013. 132 pp.  
Softcover: 978-1-62948-770-0, $52.00.  
Private health insurance (PHI) is the predominate form of health insurance coverage in the United States. The Patient Protection and Affordable Care Act, as amended, expands federal private health insurance market requirements, and requires the creation of health insurance exchanges (marketplaces) to provide certain individuals and small employers access to private insurance, among other provisions. This book explains in further detail these private health insurance market reforms in the ACA and discusses the economic issues of the ACA.
**The Quest for Health Equity**
*Angela Sauaia (University of Colorado, Colorado, USA)*

In series: *Health Care Issues, Costs and Access*

2014.
Hardcover: 978-1-63117-075-1. $150.00.

This book focuses on the achievement of health equity. It proposes pragmatic, feasible plans to greatly reduce them or perhaps eliminate them. Health is taken here in its most global sense, as defined by the WHO: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”, which includes the achievement of one’s full career potential (e.g., equality of opportunity for minorities to become public health professionals). In this book, the author address disparities existing in several populations to include (but not be limited to) low-income, racial and ethnic minorities, women, children, low literacy, disabled, GLBTI, as well as other groups who are victims of health disparities. While the needs of these populations are discussed openly and candidly, the author vigorously fights stereotyping of specific groups. The book will expose the institutionalized, personally-mediated and internalized mechanisms, which cause or perpetuate differences in opportunities, stresses and exposures as well as in health care access and quality. Currently, health disparities represent the most important challenge of public health. This book proposes to unveil often unnoticed, neglected aspects of health disparities embedded in all aspects of health and healthcare as well as medical research. Concepts are discussed based on critical appraisal of available evidence in current literature. Uncomfortable issues such as racism and discrimination in health and health care are discussed respectfully but openly. These issues are never easy to talk about; however, being too comfortable often means very little change. Being uncomfortable can be a stimulus for change.

**MARINE BIOLOGY**

**Diatoms: Diversity and Distribution, Role in Biotechnology and Environmental Impacts**
*Flaubert C. Bour*

In series: *Biotechnology in Agriculture, Industry and Medicine*

Softcover: 978-1-62948-210-1. $69.00.

In this book, the authors present current research in the study of the diversity and distribution, role in biotechnology and environmental impacts of diatoms. Topics discussed in this compilation include the determination of biogenic aluminum and rare earth element composition in diatom opal and its implication for marine chemistry of diatom frustule, an impure entity; diatom flora of fresh and brackish composition in diatom opal and its implication for marine chemistry of determination of biogenic aluminum and rare earth element impacts of diatoms. Topics discussed in this compilation include the

**Microalgae and Man**
*Dilwyn J. Griffiths (School of Biological Sciences, James Cook University, Queensland, Australia)*

In series: *Marine Biology*


Microalgae, with representatives in all but one of the major algal divisions, are an important component of the biota of the world’s aquatic environments. They include phytoplankton that are almost entirely responsible for the primary production of all marine and freshwater bodies. They occur at the base of the food chains upon which the world’s fisheries industries depend, and in the numerous aquaculture projects upon which the world will increasingly come to rely on a large portion of its protein requirement. Their use for the mass production of stock feed and for direct human consumption, already being practiced in many parts of the world, is likely to become of increasing importance in the future as is the exploitation of their ability to serve as a source of key metabolites in the food industry and in the synthesis of a range of other high-value products. The mass culture of microalgae under controlled conditions is also under consideration for its potential to provide an alternative source of biomass and for the production of biofuels, such as biodiesel, that does not compete for land that can be more profitably used for the production of traditional food crops. The potential of microalgae as a commercial source of another energy source, hydrogen, is also under investigation with a view to exploiting the ability of some microalgae, unique among oxygenic photosynthetic organisms, to release hydrogen gas produced from the photolytic splitting of water. The proven role of microalgae in waste-water treatment and in various environmental remediation processes as well as their potential contribution as a vital component of carbon-capture schemes will also be described. This book surveys our current understanding of those aspects of the biology of microalgae which constitute the basis of the range of practical applications now under consideration for their potential contribution to human health and well-being. The focus is largely on physiological and biochemical processes of microalgae as they are currently known, with the aim of providing some of the basic background information against which present and proposed future developments can be assessed. Many of these developments, if they are to be successful, will require collaboration of engineers, process biochemists and microbiologists as well as those trained to address economic and environmental considerations. It is hoped that this book, will provide for such workers and for the lay person, an overview of some of the relevant basic biology of the microalgae, highlighting their metabolic flexibility and their vast potential as a valuable resource that is yet to be fully realized.

**Shrimp: Evolutionary History, Ecological Significance and Effects on Dietary Consumption**
*Carmel A. Delaney*

In series: *Marine Biology*

In series: *Fish, Fishing and Fisheries*

Hardcover: 978-1-62948-391-7. $95.00.
e-book: 978-1-62948-392-4. $95.00.

In this book, the authors present current research in the study of the evolutionary history, ecological significance and effects on dietary consumption of shrimp. Topics include the biology, morphology and antiviral defense of penaeid shrimp (Crustacea: decapoda); shrimp (penaeus monodon) farming in the coastal areas of Bangladesh; three analytical methods that employ ion chromatography coupled with conductivity detection for the determination of sulphiting agents, polyphosphates and organic acids in shrimps; movement and habitat use by the abundant seagrass shrimp Phycowenches zostericola (Decapoda: palaemonidae); and the availability of brine shrimp bioassay as a screening technique of allelopathic compounds.

**The Invasive Lionfish: Assessments and Impact Management**
*Harris A. Sullivan*

In series: *Marine Biology*

2013. 159 pp.
Hardcover: 978-1-62948-114-2. $110.00.
Venomous Indo-Pacific lionfish (Pterois miles and P. volitans) are now established along the Southeast U.S.A. and parts of the Caribbean and pose a serious threat to reef fish communities of these regions. Lionfish are likely to invade the Gulf of Mexico and potentially South America in the near future. Introductions of lionfish were noted since the 1980s along south Florida and by 2000 lionfish were established off the coast of North Carolina. Lionfish are now one of the more numerous predatory reef fishes at some locations off the Southeast U.S.A. and Caribbean. Lionfish are largely piscivores that feed occasionally on economically important reef fishes. The trophic impacts of lionfish could alter the structure of native reef fish communities and potentially hamper stock rebuilding efforts of the Snapper –Grouper Complex. Additional effects of the lionfish invasion are far-reaching and could increase coral reef ecosystem stress, threaten human health, and ultimately impact the marine aquarium industry. Control strategies for lionfish are needed to mitigate impacts, especially in protected areas. This book provides a general overview of the biology and ecology of lionfish including genetics, taxonomy, reproductive biology, early life history and dispersal, venom defense and predation, and feeding ecology. In addition, alternative management actions for mitigating the negative impacts of lionfish, approaches for reducing the risk of future invasions, and directions for future research are provided.

MEDICINE

A Practitioner’s Guide to Pilonidal Sinus Disease
Pravin Jaiprakash Gupta (Fine Morning Hospital and Research Center, Gupta Nursing Home, Nagpur, India)
In series: Allergies and Infectious Diseases
Softcover: 978-1-63117-098-0. $52.00.
Pilonidal disease is a chronic infection of the skin in the region of the buttock crease. The condition results from a reaction to hairs embedded in the skin, commonly occurring in the cleft between the buttocks. The disease is more common in men than women and frequently occurs between puberty and age 40. It is also common in obese people and those with thick, stiff body hair. Pilonidal disease in younger people, usually men, which can result in an abscess, draining sinus tracts, and moderate debility for some. This is a condition dealt with by general practitioners, accident and emergency departments, general surgeons, colorectal surgeons, plastic surgeons, district nurses and wound-care specialists. It is an unglamorous condition that, despite its prevalence, seldom achieves priority within a busy clinical practice. However, its complex debilitating nature and negative economic effects for the predominantly affecting the young working population should not be underestimated. The primary goal of this book is to remain for all the time the most thorough, useful, readable, and understandable handbook presenting the pilonidal sinus disease. It is designed to be equally useful to students, trainees, and experts in the field. It remains a discipline in which the knowledge and skill of a surgeon combine for the welfare of all patients. This book contains seven chapters, of which the first five elaborate etiology, pathogenesis, presentations of the disease, conservative management and surgical options for sacrococcygeal pilonidal sinus disease while the sixth chapter briefs about post operative care and nursing management of the patients of pilonidal sinuses and the last chapter describes the other uncommon but important sites of pilonidal disease as well as complications attendant to the disease. Adequate illustrations have also been inserted with regard to specific presentations and treatment options appropriately. As its title indicates, this book is neither a fully detailed textbook on pilonidal sinus disease for the novice nor a comprehensive reference for the expert. Emphasis is placed on readily understandable descriptions of diagnostic and therapeutic procedures, accompanied by explanatory schematic drawings as well as pictures of the described text. A useful short glossary is also provided. Each chapter starts with key summary points and ends with summary points and adequate references. Several color plates are also provided, although the majority of the book is otherwise illustrated with occasional black and white diagrams. The chapters are well-structured throughout, with good use of tables, illustrations and summaries, to facilitate an easy dip into the subject. References at the end of each chapter are useful for those wanting to learn more about the areas covered. Nonetheless, in contrast to many standard surgical textbooks this small volume is clearly international in its perspective. It will be apparent to the reader that patient management in several areas of pilonidal surgery may still differ widely from region to region even in our ever more interconnected world, yet each chapter has been written to assess rigorously the level of evidence upon which operative and nonoperative treatment recommendations are made. As the quality of available evidence advances in a number of surgical areas, the author believes that clinical management will perform and become more uniform in most countries. The author plans to update this small volume frequently so that its readers can be assured of an accurate assessment of evidence based surgical practice to keep pace with the advancements in technologies and techniques.

Acute Coronary Syndrome: Symptoms, Treatment and Prevention
Enzo Dardenay and Charles de Cocheret
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-62948-583-6. $150.00.
Acute coronary syndrome (ACS) refers to a group of symptoms attributed to obstruction of the coronary arteries with the most common symptom presented as chest pain. In this book, the authors discuss current research in the study of the symptoms, treatment and prevention of ACS. Topics include antiplatelet therapy in ACS and novel antiplatelet agents; ACS in patients with prior coronary artery bypass graft; the incidence, impact on morbidity and mortality on atypical presentation in ACS; statins use in acute coronary syndrome; dietary assessment and cardiovascular disease risk estimation scores; the importance of renal insufficiency in ischemic heart disease; the relationship between acute coronary syndrome and leukocyte count; and ischemic heart disease in the elderly.

Advances in Hypertension Research
Ramón Rodrigo (Molecular and Clinical Pharmacology Program, Institute of Biomedical Sciences, Faculty of Medicine, University of Chile, Santiago, Chile)
In series: New Developments in Medical Research
Hardcover: 978-1-62948-857-8. $150.00.
Hypertension, also referred to as high blood pressure, is a disease affecting almost 1 billion people worldwide. Some 70 million adults in the United States are affected by hypertension. The condition also affects about two million teens and children. It is called the “silent killer” due to the deleterious damaging effects, such as stroke, myocardial infarction, renal dysfunction, visual problems, among others, derived from hypertension. It is noteworthy that one-third of patients in this condition are not even aware they are hypertensive, as this disease is usually asymptomatic for many years, even decades, until it finally damages certain critical organs and the only reliable way to detect its occurrence is to regularly check blood pressure. Therefore, considerable effort has been devoted to ascertain the causes of hypertension, as well as the mechanisms damaging the organ function. Nevertheless, about 95% of cases have unknown causes and represent
the primary or essential hypertension. This book presents an update of research advances contributing to a better understanding of relevant clinical models of hypertension, particularly; the involvement of the role of oxidative stress in various forms of hypertension as a still emerging subject. This paradigm could be applied to account for blood pressure elevation in the metabolic syndrome, renovascular disease, preeclampsia and chronic kidney disease, among others. These examples are discussed in the light of recent clinical and experimental studies providing a rational basis for diagnosis and management of the diseases. Each chapter includes a synthesis of the mechanistic approach supported by the accumulated evidence to facilitate its comprehension.

Advances in Medicine and Biology. Volume 69
Leon V. Berhardt
In series: Advances in Medicine and Biology
2013. 144 pp.
Hardcover: 978-1-62808-088-9. $95.00.
e-book: 978-1-62808-089-6. $95.00.
This continuing series gathers and presents original research results on the leading edge of medicine and biology. Each article has been carefully selected in an attempt to present substantial topical data across a broad spectrum. Topics discussed include cosmeceuticals; prostaglandins and neural function; expression and involvement of cytokines, chemokines and adhesion molecules in rheumatoid vasculitis; understanding soybean rust interaction with soybean using biotechnology; diversity and evolution of fungal phytopathogens associated with snow; development of antidiabetic herbal formulations; the action mechanism, biological effect and clinical significance in improving peripheral arterial blood flow of prostaglandin E1; molecular basis of hemiorthor in the lentil anthracnose pathogen colletotrichum truncatum; detection of gaze atypical patterns in Autism Spectrum Disorders; and game-based learning and serious game utilization for people with ADHD.

Advances in Medicine and Biology. Volume 70
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-62808-454-2. $150.00.
This continuing series gathers and presents original research results on the leading edge of medicine and biology. Each article has been carefully selected in an attempt to present substantial topical data across a broad spectrum. Topics discussed in this compilation include recent advances in family planning methods; genetic variants in periodontal diseases; culturally sensitizing STI/HIV prevention; surface electromyographic signal detection and analysis; HIV prevention among older LGBT adults; recurrent respiratory infections in children; development, production and application of quercetin; microbial pathogens in Crohn’s disease; augmentative communication application for people with ASD using android devices; and the symptoms, management and prevention of acute lower respiratory tract infections in children.

Advances in Medicine and Biology. Volume 71
Leon V. Berhardt
In series: Advances in Medicine and Biology
Softcover: 978-1-62808-824-3. $95.00.
e-book: 978-1-62808-826-7. $95.00.
This continuing series gathers and presents original research results on the leading edge of medicine and biology. Each article has been carefully selected in an attempt to present substantial topical data across a broad spectrum. Topics discussed in this compilation include a review on the optimization of the formulations of metronidazole in cancer gene therapy and targeted cell ablation; protective roles of glutathione peroxidases in diabetes; stem cell disorders and bone marrow transplantation; catalase gene mutant mice; what animal models of inflammatory arthritis teach us about bone damage; methylprednisolone use in autoimmune diseases; the clinical use of methylprednisolone in oncology; how pretreatment with methylprednisolone reduces adverse clinical effects of inflammatory response induced by heart surgery and cardiopulmonary bypass; and the potential side effects of methylprednisolone.

Advances in Medicine and Biology. Volume 72
Leon V. Berhardt
In series: Advances in Medicine and Biology
2013. 204 pp.
Hardcover: 978-1-62808-967-7. $150.00.
This continuing series gathers and presents original research results on the leading edge of medicine and biology. Each article has been carefully selected in an attempt to present substantial topical data across a broad spectrum. Topics discussed in this compilation include an examination of cosmeceutical products; essential immune responses to HIV/AIDS; parametabolic β-aggregation of proteins; a review of food antioxidants; pharmacy regulatory privatization; controlled ventilation and its modulation for advanced monitoring of the circulation in surgery and critical care; privatization of the Central Medical Supplies Public Corporation (CMS) in Sudan; development of antidiabetic herbal formulations; and the frequency of multiresistant strains of staphylococcus aureus isolated in Tbilisi, Georgia.

Advances in Medicine and Biology. Volume 73
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-62948-269-9. $120.00.
e-book: 978-1-62948-270-5. $120.00.
This continuing series gathers and presents original research results on the leading edge of medicine and biology. Each article has been carefully selected in an attempt to present substantial topical data across a broad spectrum. Topics discussed in this compilation include antioxidants in common spices and their health benefits; a review of pre-processing of photoplethysmography (PPg) signals and features analysis; blood supply in major diseases and its clinical impact; pharmaceutical regulations and the quality of medicine in the Sudanese market; blood supply and its clinical significance in wound healing and surgery; cost per dose and economic comparison of inactivated influenza virus vaccine and plasmid DNA influenza vaccine; blood transfusion and anastomotic complications in esophageal reconstructive surgery; technician voice loudness and spirometric results in healthy subjects; and the physiological aspects of oxygen transport to peripheral tissues by retrograde perfusion and distal vein arterIALIZATION.

Advances in Medicine and Biology. Volume 74
Leon V. Berhardt
In series: Agricultural Research Updates
Hardcover: 978-1-62948-379-5. $95.00.
e-book: 978-1-62948-380-1. $95.00.
This compilation examines agricultural research from across the globe and covers a broad spectrum of related topics. In this book, the authors discuss research including the impacts of the Fukushima nuclear disaster on Japanese agriculture and food chains; plant nutrients, plant growth retardants, and cotton production; response of olive trees to deficit irrigation regimes; improving selectivity in trawl fisheries; grazing management of native and naturalized pastures in harsh environments; sustainable grazing systems for the enhancement of livestock production and biodiversity in less-favored heathland areas of northern humid Spain; genomic organization and comparative analysis
of the genome of domesticated animals and poultry; and in-depth studies of cattle-manure-compost activated carbons for Cu(II) ions removal.

Advances in Medicine and Biology. Volume 75
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-62948-739-7, $150.00.
This continuing series gathers and presents original research results on the leading edge of medicine and biology. Each article has been carefully selected in an attempt to present substantial topical data across a broad spectrum. Topics discussed in this book include chemokines for stem cell mobilization; the first cases of syphilis; CX3CR1 in rheumatoid arthritis and related conditions; hydrogels; cell replacement therapy and retinal destructive diseases; and a situation analysis of human resource issues in the pharmacy profession in Sudan.

Advances in Medicine and Biology. Volume 76
Leon V. Berhardt
In series: Advances in Medicine and Biology
2014. 188 pp.
Hardcover: 978-1-63117-144-4, $150.00.
This continuing series gathers and presents original research results on the leading edge of medicine and biology. Each article has been carefully selected in an attempt to present substantial topical data across a broad spectrum. Topics discussed in this book include quality improvement imperative on achieving command over hospital acquired infections in intensive care units; Medicare and escalating costs; effects of exercise and the impact on cognitive health in normal, healthy, older adults; fluoroquinolones; treatment of skull base tumors; eradication antimalarial drug policies and develop new antimalarial drugs and researchers have stepped up efforts to revise antimalarial drug policies and develop new antimalarial...
strategies. Resistance has arisen to all classes of antimalarials (chloroquine, amodiaquine, meloquine and sulfadoxine-pyrimethamine) except, as yet, definitively to the artemisinin derivatives. In order to prevent widespread resistance, the concept of antimalarial combination therapy (CT) has been employed and a global resistance surveillance system (World Antimalarial Resistance Networks) has been established. This book explores the use of these drugs in current health care.

Biomedical Osteoporosis Treatment
Masayoshi Yamaguchi (Department of Hematology and Biomedical Oncology, Emory University School of Medicine, Atlanta, GA, USA)
In series: Endocrinology Research and Clinical Developments
Hardcover: 978-1-62808-745-1. $150.00.
e-book: 978-1-62808-758-1. $150.00.
Bone is a dynamic tissue that undergoes continual adaptation during vertebrate life to preserve skeletal size, shape, and structural integrity and to regulate mineral homeostasis. Bone mass is skillfully regulated through osteoclasts and osteoblasts. Bone mass is reduced through decreased osteoblastic bone formation and increased osteoclastic bone resorption. This decrease induces osteoporosis. Bone loss is also caused in various pathophysiological states including inflammatory condition, obesity, diabetes, and cancer cell bone metastasis. In addition, malnutrition or undernutrition is often observed with increasing ages and is strongly implicated in the pathogenesis and consequences of bone fracture in the osteoporotic elderly. Nutritional and functional food factors may play a pivotal role in maintaining bone health, and this will be expected as a new biomedical treatment for osteoporosis.

Biomedical Research: Strategic Planning for Success
Y. Robert Li, Michael P. Mahalik, and John M. Kauffman, Jr. (Campbell University School of Osteopathic Medicine, Buies Creek, NC, USA)
2013. 219 pp.
Hardcover: 978-1-62808-105-3. $150.00.
“Biomedical Research: Strategic Planning for Success” is the first book of its kind that takes a unique approach to introducing key aspects of modern biomedical research and providing detailed strategies for developing competitive institutional biomedical research. The book presents current information on a variety of topics of biomedical research and research development in an organized, cogent, and in-depth manner. The consistent format of writing, the full-color illustrations, and the comprehensive list of references along with the well-thought-out self-assessment questions for each of the chapters make the book highly accessible and engaging. Besides its value as a guide for those who are involved in developing biomedical research, “Biomedical Research: Strategic Planning for Success” can also be used as a textbook for undergraduate and graduate students in the field of biomedical sciences. In addition, the book will provide a useful reference for both health professionals and the general public to gain a quick and thorough understanding of biomedical research and how to develop biomedical research, a main domain of the 21st century scientific research enterprises.

Candida Albicans: Symptoms, Causes and Treatment Options
Leon A. Dietrich and Tim S. Friedmann
In series: Allergies and Infectious Diseases
Hardcover: 978-1-62808-882-3. $120.00.
e-book: 978-1-62808-883-0. $120.00.
Infections due to the Candida species are the most common among fungal infections. Candida albicans is a yeast normally found as part of the skin microbiota, mouth, intestinal tract and vagina. Certain illnesses, stress, or medications can cause the out of control growth of Candida, producing infections that range from superficial to the systemic level, and potentially life-threatening diseases. In this book, the authors discuss the symptoms, causes and treatment options of Candida albicans including the role of Candida albicans biofilms in human disease; new developments in the pathogenesis of Candida albicans; a drug delivery approach for the treatment of Candida albicans; proteins and peptides as potential antifungals for treating Candida albicans infections; antifungal therapy of candidiasis with Amphotericin B; Candida albicans infection in the lower respiratory tract among HIV/AIDS patients in Nigeria; risk factors for vaginal candidiasis; symptomatology and therapy in candidiasis; microbial inactivation of the pathogen Candida albican in marine ecosystems; and polyenes, azoles, and echinocandins for treating infections caused by Candida albicans and other Candida species.

Candidiasis: Epidemiology, Symptoms and Treatment Options
Felipe Contreras and Pedro Fuentes
In series: Dermatology - Laboratory and Clinical Research
Candidiasis or thrush is a fungal infection (mycosis) of any of the Candida species. Also commonly referred to as a yeast infection, candidiasis encompasses infections that range from superficial, such as oral thrush and vaginitis, to systemic and potentially life-threatening diseases. In this book, the authors discuss the epidemiology, symptoms and treatment options of candidiasis. Topics include invasive candidiasis and candida parapsilosis complex diagnoses and treatment; conventional and alternative treatment options for oral candidiasis; candida spp. in the oral cavity of children with immunodeficiencies; oxidative stress and the development of antifungal agents for the treatment of candidiasis; inhalation and topical steroid therapy and oral candidiasis; and fluorescent staining for the diagnosis of oral erythematous candidiasis.

Chronic Inflammation: Causes, Treatment Options and Role in Disease
Wei-Chiao Chang and Wen-Chang Chang (Taipei Medical University, Taiwan)
In series: Immunology and Immune System Disorders
Hardcover: 978-1-62808-094-0. $150.00.
The primary focus of this book is to provide readers with a comprehensive overview of the recent advances in inflammation, especially in molecular biological and clinical aspects. Chapters contained in this book are written by invited authors from all over the world, who are well-known experts in their respective fields. In the book, chapters discussed include the molecular basis of inflammatory mechanisms; the functional roles of inflammation in diseases and new treatments of anti-inflammation. This book will be useful to all who wish to understand the scientific basis of inflammatory disease.

Cirrhosis: Causes, Treatment Options and Potential Complications
Ryan M. Blackwell and Arthur P. Tyson
In series: Hepatology Research and Clinical Developments
In this book, the authors present current research in the study of the causes, treatment options and potential complications of cirrhosis. Topics discussed include optimal medical management of liver cirrhosis without liver transplant; cardiac dysfunction in end stage liver disease; bacterial infections in cirrhosis; asymmetric dimethylarginine (ADMA) and endothelial dysfunction in cirrhosis; surgical risk associated with cirrhosis; the physics of liver fibrosis and cirrhosis; endoscopic oblitative therapy with cyanoacrylate for gastric varices; and surgical resection of hepatocellular carcinoma.

**Costimulation Immunotherapy for Autoimmunity, Transplantation and Lymphomas**

Manzoor Ahmad Mir and Raid S. Al Baradie (College of Applied Medical Sciences, Majmaah University, Almajmaah, Kingdom of Saudi Arabia), Abdul Rahman O. Alharbi (Department of Medicine, Majmaah University, Kingdom of Saudi Arabia)

In series: Allergies and Infectious Diseases


Cancer is one of the most prominent causes of mortality in children and adults causing about 9 million deaths annually, is a major health problem worldwide. The transformation of normal cells to cancer cells may arise due to dysregulation of oncogenes, tumor suppressors and/or stability genes. These transformed cells are sensed by the cells of the immune system, especially T cells, through specific receptors for an effective immune response. But unfortunately even after the interaction with T cells, an effective immune response is not generated.

Considering the importance of costimulation in the regulation of immune responses against relapsed cancer, the manipulation of this pathway to increase immunity, regress the growth, augment the expression of pro-apoptotic molecules and induce the apoptosis of lymphomas represents a potential therapeutic approach. This novel strategy of costimulation activation/inhibition can be effectively exploited to develop immunotherapy either using humanized antibodies against CD80, CD86 and CD40 or CD28 fusogenic proteins for the treatment of intracellular pathogens like M. tuberculosis, HIV, L. donovani, T. cruzi, etc. This strategy can also be used as an alternative strategy or in combination with the drugs. Since this approach is based on modulating the immune system of the hosts rather than targeting the pathogen; hence it significantly diminishes chance of emergence of drug resistant strains of pathogens and if applied properly, may overcome the rising menace of infectious diseases. The potent role of costimulatory molecules is aptly established in the optimum activation of T cells and APCs; the cells that play a cardinal role in curbing the infections. Hence, immunotherapy involving costimulatory molecules can be a breakthrough strategy to treat various diseases, minimizing side effects inflicted by drug therapies and in restricting the emergence of drug resistance.

**Dermis: Structure, Composition and Role in Thermoregulation**

Rosemary E. Walling

In series: Dermatology - Laboratory and Clinical Research


Skin, which is in continuous evolution throughout our lifetime, suffers changes with age and may develop malignancies. The part of the skin most involved in its bio-mechanical functions is the dermis. Topics discussed in this compilation include the cellular and histological changes in dermis aging; non-invasive methods in the study of the dermal structure and composition; and dermal and epidermal interaction.

**Disseminated Intravascular Coagulation (DIC): Clinical Manifestations, Diagnosis and Treatment Options**

Balwinder Singh (Mayo Clinic College of Medicine, Rochester, MN, USA)

In series: Recent Advances in Hematology Research


Disseminated Intravascular Coagulation is a devastating syndrome characterized by the systemic activation of widespread activation of the coagulation cascade and thrombosis, which may result in severe bleeding and may lead to organ failure. Recent studies have shown that the incidence of DIC is decreasing, especially in men. Despite the improvements in health care delivery, the morbidity and mortality due to DIC remains very high. Early diagnosis and accurate prognosis are important in improving the outcomes of patients with DIC. However, there is a lack of a gold standard diagnostic test to diagnose DIC and there is a scarcity of treatment or management strategies. Therefore, an understanding of the pathophysiology, ability to diagnose the DIC syndrome and treat it early, is the key. This book provides an important timely update on the clinical manifestations, important risk factors, and treatment strategies for DIC, and provides in-depth information on pathophysiological aspects and various diagnostic scores used to diagnose DIC. Furthermore, we focused on certain important factors related to DIC such as sepsis, chronic DIC in cancer patients, coagulopathy of liver disorders vs. DIC, and DIC in urological malignancies. In addition, this book provides evidence from an important study determining the predictors influencing the hospital mortality rates of critically ill patients with DIC. This book offers a wide scope of information for physicians in all fields, whether they are intensivists, primary care physicians or oncologists, this will be an important source for identifying the DIC syndrome early, and the appropriate steps to improve patient outcomes will be taken sooner.

**Endometriosis: Risk Factors, Symptoms and Management**

Marta Juarez and Luna Tomas

In series: Human Reproductive System - Anatomy, Roles and Disorders

In series: Obstetrics and Gynecology Advances

2013. 308 pp.

This book presents current research in the study of the risk factors, symptoms and management of endometriosis. Topics discussed in this compilation include the association between endometriosis and ovarian cancer; modalities from science in the prevention of endometriosis; immunology as a risk factor and its role in the development of endometriosis; oxidative stress as a risk factor in endometriosis; association of bone morphogenetic protein 6 with endometriosis classification; clinical and surgical management of endometriosis-related infertility; choosing the right surgery for endometriosis and pelvic pain; the use of transvaginal ultrasound in the prediction of Pouch of Douglas Obliteration in women with suspected endometriosis; maintenance therapy after conservative surgery for moderate and severe endometriosis; the phosphoinositide signal transduction pathway in endometriosis; and the genetic factors contributing to endometriosis.
Gastrointestinal Bleeding: Symptons, Treatment and Prognosis
Ahmed Kamel Abdel Aal and Souheil Saddekni
(Department of Radiology, University of Alabama at Birmingham (UAB), Birmingham, AL, US)
In series: Emergency and Intensive Care Medicine
Gastrointestinal (GI) bleeding is one of the frequent emergencies that clinicians frequently manage in clinical practice. This book contains several chapters dedicated to the diagnosis and management of gastrointestinal bleeding. This book includes current updates on all areas of GI bleeding including upper GI, lower GI, and small bowel bleeding. It fully covers the different symptoms and signs of gastrointestinal bleeding that can occur in different conditions. The outline of the many dilemmas faced by clinicians in their approach to their patients like diagnostic predictors of clinical outcome, and risk stratification in lower GI bleeding and for upper GI bleeding. There is a dedicated chapter for the diagnosis and management of Dieulafoy lesions (DLs) which are uncommon, yet they are often an under-recognized cause of life-threatening GI bleeding occurring in both the adult and pediatric population. This book also gives a comprehensive overview of the various imaging modalities used for the diagnosis of GI bleeding with emphasis on the role of MDCT in the care of patients with GI hemorrhage. The initial management of significant GI bleeding with focuses on early identification, hemodynamic stabilization, close monitoring in the proper setting, and timely workup and intervention is described. A dedicated chapter discusses the wide range of endoscopic therapies that are now available to treat GI bleeding, with emphasis on the new advances in endoscopic therapy. There is detailed discussion on the role of transcatheter arterial embolization, which remains an important available treatment modality in the armamentarium for management of non-variceal GI bleeding. A review of the primary prevention of variceal hemorrhage, management of acute variceal hemorrhage, and secondary prevention of variceal hemorrhage is presented. A comprehensive discussion on the surgical and endovascular management of variceal bleeding using transjugular intrahepatic porto-systemic shunt (TIPS) as well as surgical shunts is included in this book. This book will be of great value to many clinicians in different specialties including general practitioners, general internal medicine, gastrointestinal medicine, interventional radiologists and gastrointestinal surgeons.

Estradiol: Synthesis, Health Effects and Drug Interactions
Rico Palmeri and Sal Grimaudo
In series: Endocrinology Research and Clinical Developments
Hardcover: 978-1-62808-962-2. $150.00.
Estradiol is the major steroid hormone which is involved in several organic functions, such as physiological sexual behavior, development and maintenance of male and female reproductive organs, control of visceral secretion, modulation of immune system, and tumorigenesis. In this compilation, the authors discuss the synthesis, health effects and drug interactions of estradiol. Topics include the occurrence of estradiol in environmental waters; estradiol in the central nervous system and its role in neurodegeneration; the effects of estradiol on male and female reproductive tissues and the influence of endocrine disruptors; estradiol and prostate cancer; hydroxysteriods and methoxyestrials as endogenous factors associated to physiological and physiopathological conditions; estrogen and functional gastrointestinal disorders; estradiol and memory; estradiol in the environment; use of combined therapy of estrogens with antidepressants; estrogen and nitric oxide as a treatment for diabetes gastroparesis; estradiol synthesis after ovarian tissue cryopreservation and transplantation; estradiol-mediated overmodulation of the neuroendocrine hormone dopamine is central to the pathophysiology of restless leg syndrome during pregnancy; and estrogen modulation on oxidative stress and synaptic plasticity in the dorsal hippocampus.

Eye Movement: Developmental Perspectives, Dysfunctions and Disorders in Humans
Laurence C. Stewart
In series: Eye and Vision Research Developments
Hardcover: 978-1-62808-601-0. $95.00.
e-book: 978-1-62808-603-4. $95.00.
In this book, the authors present current research in the study of eye movement, with a focus on developmental perspectives, dysfunctions, and disorders in humans. Topics discussed in this compilation include the formation of spiraling or circulating patterns in eye movement trajectories; utilizing dialectical behavior therapy and eye movement desensitization and reprocessing as phase-based trauma treatment; eye movement problems and differential diagnosis of Parkinsonian syndromes; developmental dyslexia, visual crowding and eye movements; gaze behavior during human adaptive locomotion; and poor binocular coordination of saccades during reading in children with visual deficits.

Gonadotropin-Releasing Hormone (GnRH): Production, Structure and Functions
Eric Scott-Sills (Pacific Reproductive Center, Orange County, CA, USA)
In series: Endocrinology Research and Clinical Developments
Hardcover: 978-1-62808-472-6. $150.00.
This book offers updates on the full range of contemporary GnRH knowledge, as articulated by authoritative contributors with extensive neurophysiology experience. In this new comprehensive volume, internationally-renowned experts explain what GnRH is, describe how it works, follow its associated pathology, and predict where future GnRH research is likely headed. These objectives are clearly developed over sixteen concise yet thorough chapters covering themes across human clinical medicine, veterinary science, marine organisms, and transitional states as observed in so-called “living fossils”, as well as invertebrate biology. The authors depict GnRH fundamentals as a starting-point for examination of more recent data in this rapidly evolving field. Although ideally suited for the senior GnRH researcher, anyone with an early, basic interest in neuroendocrinology will also find this book highly approachable. Fully illustrated, indexed and annotated, this edition is an essential item in any modern personal or institutional GnRH library collection.

Hamilton’s History of Medicine and Surgery
R. Shane Tubbs, Anand N. Bosmia, Meghan Richli, Marios Loukas, Paul S. Agutter and Mohammadali M. Shojai (Pediatric Neurosurgery, Children’s Hospital, Birmingham, AL, USA)
In series: Distinguished Men and Women of Science, Medicine and the Arts
Hardcover: 978-1-62948-882-0. $150.00.
William Hamilton’s History of Medicine, Surgery and Anatomy, penned during the early nineteenth century, is an elegantly written discussion of the development of medicine and surgery from the dawn
of humanity to the eighteenth century. The authors have rewritten this chronicle, replacing the British English of the period with modern American English, to suit a contemporary readership and thereby add a valuable resource to the arsenal of medical students, healthcare professionals, and other individuals who wish to study with enthusiasm and intellectual curiosity the history of medicine and surgery. The authors hope that this current work makes an obscure masterpiece readily accessible and comprehensible to the modern reader. The original 737-page text has been reduced to 161 pages and retitled Hamilton’s History of Medicine and Surgery. Hamilton’s rhetorical flights and repetitions, characteristic of English non-fiction written during the early nineteenth century, have been removed to make the text easier to understand, and some of the more aggressively ethnocentric passages have been removed so as to provide a fairer account of the development of medicine and surgery. The authors have included some of Hamilton’s original footnotes and incorporated additional footnotes in order to balance respect for the original text with the needs and interests of the modern reader. Contemporary publications to which the reader can refer in order to study in greater detail various topics noted in the text are cited in new footnotes. This abridged version delineates significant events pertaining to medicine and surgery prior to the nineteenth century and discusses the lives of historical figures and the paradigms in which they practiced the art of healing in a concise manner. The original text lacks images, and the authors have incorporated 45 images of historical figures to enrich this revised version. Hamilton’s History of Medicine and Surgery richly portrays the odysseys of medicine’s champions and the social and religious milieu in which their efforts to alleviate illness took place, and presents to the reader an opportunity to comprehend more fully the evolution of the art of healing.

Integrative Medicine: It’s Role for our Future Medicine
Toku Takahashi (Medical College of Wisconsin, Milwaukee, WI, USA)
In series: New Developments in Medical Research
In series: Health Care in Transition
2013. 228 pp.
Hardcover: 978-1-62618-543-2. $150.00.
Complementary and alternative medicine (CAM) is a diverse group of health care systems, practices, and products that are not presently considered part of conventional Western medicine (CWM). CAM mainly includes mind-body therapies (meditation, Yoga, Tai-chi, Qi-gong, and music therapy, etc.) and manual therapies (chiropractic, massage, acupuncture, and touch therapy, etc.). The beneficial effects of CAM are mainly due to a reduction of stress responses and pain pathways. Mind-body therapies promote these effects by stimulating brain activity throughout its network (top-down pathway). Manual therapies promote these effects through the stimulation of peripheral sensory nerves (bottom-up pathway). Both pathways activate various neuropeptides in the brain, such as opioid and oxytocin, which mediate anti-stress and analgesic effects. Public interest in CAM has dramatically increased over the past decade, and a great deal of research is backing up that trend with evidence supporting the benefits of CAM therapies. A national health survey in 2007 revealed that more than $34 billion was spent on CAM annually in the US. As CAM therapies are proven to be safe and effective, CAM is destined to claim an important role in conventional health care.

Liver Failure: Etiologies, Neurological Complications and Emerging Therapies
Carmen Peralta and Luis Fontana (Experimental Liver Surgery and Liver Transplantation, Rosello, Barcelona, Spain)
In series: Hepatology Research and Clinical Developments
2013. 278 pp.
Hardcover: 978-1-62808-507-5. $150.00.
The recently published article “The Burden of Liver Disease in Europe: A Review of Available Epidemiological Data” provides a few figures on the enormous problem that liver disease poses for Europeans. Liver disease is estimated to cause 170,000 deaths annually in Europe, 47,000 of which are attributed to liver cancer; 0.5%-0.7% of the European population is affected by chronic hepatitis B; and prevalence rates of hepatitis C virus (HCV) infection in the last decade in the European population ranged from 0.13 to 3.26%. These HCV-infected populations will develop complications in the years to come. It is of great concern that about 90% of people in Europe infected by viral hepatitis are unaware of their status. Alcoholic and non-alcoholic fatty liver disease (NAFLD) must also be added to the picture. NAFLD is becoming a major concern with the increasing incidence of obesity and type 2 diabetes in Europe. The burden of liver disease is not less pessimistic in North America, Asia and the rest of the world.

Liver Hydatidosis
Jose Manuel Ramia and A. Serrablo (University Hospital of Gudalajara, Madrid, Spain)
In series: Hepatology Research and Clinical Developments
Hardcover: 978-1-62808-459-7. $150.00.
Hepatic hydatidosis is a worldwide disease with a high socio-economic cost in endemic areas. Until recently, only professionals working in these areas treated hydatidosis patients, but now, due to migration and increasing intercontinental travel, any medical doctor may have to attend to patients with hydatid disease. Therefore, proper training in the diagnosis and treatment of these patients is necessary, not just in endemic areas which already have extensive experience in managing the disease, but also in institutions in countries like the United States where hydatidosis is still rare. In this book, we update all the epidemiological, radiological, clinical and therapeutic topics in liver hydatidosis. The chapters are written by a multidisciplinary group of physicians involved in treatment of the disease: microbiologists, gastroenterologists, internists, radiologists and surgeons. We conduct a complete review of all the treatment options in hydatidosis, including antiparasitic drugs, PAIR and surgery.

Meningitis: Symptoms, Management and Potential Complications
Anthony L. Shrader
In series: Bacteriology Research Developments
2014. 146 pp.
In this book the authors present current research in the study of meningitis. Topics discussed in this compilation include the drug induced aseptic meningitis; bacterial meningitis; the role of prophylactic antibiotics in posttraumatic meningitis; meningitis associated with autoimmune diseases; sepsis and bacteremia, meningitis, influenza infection, and infectious diarrhea.
Microelectrodes: Techniques, Structures for Biosensing and Potential Applications

Kin Fong Lei (Graduate Institute of Medical Mechatronics, Department of Mechanical Engineering, Chang Gung University, Taiwan)

In series: Laboratory and Clinical Research


Hardcover: 978-1-62948-678-9. $150.00.

Based on the mature development of microfabrication technology, micro-scale electrodes, i.e., microelectrodes, for the electrical observation of activities in micro-scale environment become realizable. This technique opened a new avenue for micro-scale observation and measurement besides the optical technique. This book presents the techniques, structures, and applications of using microelectrodes in a micro-scale environment. It covers a broad spectrum of topics and the state of the art techniques in the field. As such, the book is divided into four sections, comprising 11 chapters written by recognized experts from leading groups around the world. The reader will gain a unique perspective on the challenges and emerging opportunities in the technology of microelectrodes.

Microfluidics, Nanotechnology and Disease Biomarkers for Personalized Medicine Applications

Muhammad J. A. Shiddiky, Eugene J. H. Wee, Sakandar Rauf and Matt Trau (Centre for Biomarker Research and Development, Australian Institute of Bioengineering and Nanotechnology, The University of Queensland, Australia)

In series: New Developments in Medical Research

2013. 211 pp.

Hardcover: 978-1-62808-020-9. $150.00.
e-book: 978-1-62808-039-1. $150.00.

In recent years, thousands of cancer biomarkers have been discovered and described in scientific literature. The promise of personalized medicine, where diseases such as cancer are accurately diagnosed and treatments tailored specifically for individuals, is becoming a reality. Significant advances in biomarker-based research methodologies such as Next Generation Sequencing (NGS) are at the cusp of ushering in a new era of personal medicine. However, unlike the spectacular advances in research technologies for disease biomarker discovery, biomarker-based technologies that can effectively be used in the clinic (or point-of-care) to enable personalized medicine are still lacking. In this book, we feature a selection of emerging technologies which are aimed at enabling clinical applications of personalised medicine. Each of the eight chapters is written by a leading group at the intersection of microfluidics, biology, and nanotechnology. For instance, to accelerate a major bottleneck in the development of clinically useful protein diagnostics, we discuss the application of yeast-derived single chain Fragment variable (scFv) antibody-like molecules as a potential low cost alternative to traditional antibody-based diagnostics. Circulating tumour cells (CTCs) are an emerging class of cancer biomarkers and a potential resource for understanding cancer progression; we explore various strategies combining microfluidics with nanotechnology for capturing CTCs. The book includes an evaluation of some current and emerging technologies for detecting clinical DNA methylation, another potential cancer biomarker. As personalized medicine may involve tracking a patient's response to treatment, the application of microfluidics to detect metabolites in biological fluids is also discussed. Finally, the ultimate goal of personalized medicine is targeted therapy. One promising approach is RNAi technology which uses short nucleotides to disrupt cancer pathways. In this book, nanoparticle approaches to deliver these short nucleotides are discussed.

Mind and Body Research Summaries. Volume 1

Lucille T. Cacioppo

In series: New Developments in Medical Research

In series: Health Psychology Research Focus


Hardcover: 978-1-62808-924-0. $225.00.

This new book is the first in a series of three volumes compiling research summaries with a focus on the mind and body. The summaries include contributions from authors across the globe with different expertise foundations.

Mind and Body Research Summaries. Volume 2

Lucille T. Cacioppo

In series: New Developments in Medical Research

In series: Health Psychology Research Focus


Hardcover: 978-1-62808-927-1. $225.00.

This new book is the second in a series of three volumes compiling research summaries with a focus on the mind and body. The summaries include contributions from authors across the globe with different expertise foundations.

Mind and Body Research Summaries. Volume 3

Lucille T. Cacioppo

In series: New Developments in Medical Research

In series: Health Psychology Research Focus


Hardcover: 978-1-62808-936-2. $225.00.

This new book is the third in a series of three volumes compiling research summaries with a focus on the mind and body. The summaries include contributions from authors across the globe with different expertise foundations.

Mind and Body Researcher Biographical Sketches and Research Summaries

Lucille T. Cacioppo

In series: New Developments in Medical Research


This new book compiles biographical sketches of top professionals in the field of mind and body research, as well as research summaries from a number of different focuses in this important field.

Motor Dysfunction, Etiology and Pathogenesis of Gallstones

Shing-moo Huang (Faculty of Division of Surgery, Department of Medicine, Chung Shan Medical University, Taichung, Taiwan, Republic of China)

In series: Digestive Diseases - Research and Clinical Developments

2013. 304 pp.

Hardcover: 978-1-62808-296-8. $175.00.

This book adheres to strict scientific principles and is designed to explore the whole aspect of gallstone disease from the micro world of the genetic profiles, basic metabolisms of bile lipids in cholesterol gallstone patients, to the macro world of clinical triple defects of gallstone patients. It is especially suitable for medical professionals:
internists, surgeons, residents, nurses and medical students, and for collection by libraries. This book deals with motor dysfunction in calculous gallbladders as well as reactive oxygen species in relation to gallstone formation. Etiology and pathogenesis of pigment, calcium carbonate and intra-hepatic gallstones are also discussed.

Organ Donation and Transplantation – An Interdisciplinary Approach
Mary Anne Lauri (Department of Psychology, University of Malta, Rectorate, Malta)
Hardcover: 978-1-62948-257-6, $175.00.
E-book: 978-1-62948-260-6, $175.00.
This book brings together researchers from three different continents who present different perspectives on the complex issue of organ donation. Several important authors have contributed to this edited book on organ donation discussing the phenomenon from different aspects, particularly the psychological, medico-legal, religious and communications perspectives. Some of the authors have not only studied these questions academically, but they themselves are live organ donors or organ recipients as well. The chapters by Cole, Camilleri-Zahra, Schweda and Wolhke, Siegel, Anker and Jansen give importance to the voice of organ donors, recipients and their families. They discuss the dilemmas which donors, recipients and their families face when they come to learn that a family member needs an organ transplant, and the subsequent difficult decisions that have to be made by the recipients, possible donors and family members. The phases before and after the donation of organs are as important as the donation itself. Fear, guilt and other strong emotions are intrinsic to the donation process both in live donation as well as in cadaveric donation. The psychological and health challenges presented by organ donation, discussed by Lauri, Maloney, Walker and Charlton, Shanteau and Hyde, are compounded by legal, religious and cultural issues, which will also be discussed in different chapters of the book by Ellul, Borg and Reinhart. Finally, the chapters by Alvaro, Feeley and Yang discuss how the media can influence and inform public attitudes towards organ donation and discuss how it can help increase the number of organ donors. This book is meant for those who, in some way, come in contact with people who need an organ transplant and those who have to help people come to reach informed decisions.

Pathology of Skin Infections
Yutaka Tsutsumi (Department of Pathology, Fujita Health University School of Medicine, Toyoake, Japan)
In series: Dermatology - Laboratory and Clinical Research 2013. 394 pp.
Hardcover: 978-1-62808-518-1, $150.00.
E-book: 978-1-62808-708-6, $150.00.
The aim of this 7-chapter, single-author textbook entitled “Pathology of Skin Infections” are to overview and illustrate pathological features of skin infections caused by bacteria, fungi, viruses, protozoa, helminth and arthropods with a total of 361 colored figures. Histological features based on hematoxylin and eosin staining and gross appearance comprise the major part of the illustrations. Immunostaining using the indirect immunoperoxidase or amino acid polymer method and non-isotopic in situ hybridization technique were employed when necessary. The indirect immunoperoxidase method using 1:500 to 1:1,000 diluted patients’ serum as a primary antibody was also applied to localize pathogens within the lesion fixed in 10-20% formalin and embedded in paraffin. Papanicolaou- or Giemsa-stained cytology evaluation, as well as electron microscopic analysis and polymerase chain reaction (PCR), were also performed upon request. The prompt and precise diagnosis of emerging and re-emerging infectious diseases, nosocomial infections and sexually transmitted infections has an important socio-public impact for the prevention of unnecessary transmission of microorganisms. The skin may function as a mirror of internal organs. The author, as a diagnostic pathologist, sincerely hopes that this textbook helps pathologists, dermatologists and other clinicians make an appropriate diagnosis of skin infections. He strongly believes that the proper diagnosis may lead patients to proper treatment and cure, and may finally contribute to human society by preventing infectious disorders.

Prader-Willi Syndrome
Charlotte Höybye (Senior Consultant, Associate Professor, Department of Endocrinology, Metabolism and Diabetology, Karolinska University Hospital, Stockholm, Sweden)
Hardcover: 978-1-62618-993-5, $175.00.
E-book: 978-1-62808-012-4, $175.00.
Prader-Willi syndrome (PWS) is a rare, genetic, multisystemic disorder, characterized by short stature, muscular hypotonia, intellectual disability, behavioural and psychological problems and frequently hypogonadism and impaired growth hormone secretion. PWS arises due to loss of function of paternally-expressed, imprinted genes from chromosome region 15q11-q13. In newborns and infants, the syndrome presents symptoms of muscular hypotonia and nutritional difficulties, which from the age of approximately two years is replaced by hyperphagia often leading to severe obesity. With increasing age the behavioural and psychological problems increase while the muscular hypotonia improves. During the last decades the knowledge of different aspects of PWS has increased and accordingly the treatment possibilities. However, no specific treatment exists and thus problems continue lifelong. Taking care of PWS patients is therefore a demanding task and necessitates a solid knowledge and understanding of the disorder as well as a multidisciplinary approach. This book will provide professionals taking care of patients with PWS with updated and comprehensive information and advise. The content is built up logically and it will be easy to navigate between the chapters, which cover all clinically relevant issues, genetics, signs and symptoms in children and adults, treatment, words from patients and parents, supporting organizations, and from a parent to a PWS patient.

Rare Diseases: Diagnoses, Challenges and Developing Treatments
Giorgio Di Giovanni and Pietro Marcoz
Hardcover: 978-1-62948-525-6, $120.00.
A rare disease is any disease that affects a small percentage of the population. Rare diseases can vary in prevalence between populations, so a disease that is rare in some populations may be common in others. This is especially true of genetic diseases and infectious diseases. In this book, the authors present current research on the diagnoses, challenges and developing treatments for rare diseases, from researchers across the globe. Topics discussed include commotio cordis, also known as cardiac concussion with described cases of ventricular fibrillation and sudden death from cardiac arrest; the clinical manifestations and pathophysiology of muscle-specific kinase (MuSK) myasthenia gravis (MG); neurological complications of histiocytosis; nail-patella syndrome; management of cardiac angiosarcoma; diagnosis and treatment of clear cell adenocarcinoma of the bladder; eosinophilic pancreatitis; non-traumatic splenic rupture; and alkaptonuria.
Sears and Scarring: Causes, Types and Treatment Options
Yongsoo Lee (Oracle Dermatology Clinic, Oracle Building Dunsan-dong, Seo-gu, Daejeon, South Korea)
In series: Dermatology - Laboratory and Clinical Research
Hardcover: 978-1-62808-005-6. $150.00.
In the era in which human beings began seeking aesthetic, numerous options for scar treatments have been invented. Not all, but almost all of the useful treatment options are described in this book, along with the latest discoveries of scar pathogenesis. Combinations of these treatment options and the latest options of laser treatments are described with the help of a new scar classification system. This new scar classification system is based not only on the morphology and natural behavior of scars, but also on the responses of scars to laser treatments. It is the editor’s hope that this book will illuminate the direction of future scar treatment research and provide a greater understanding of scar pathogenesis as well as practical guidance to more successful scar treatments.

Scleroderma: Symptoms, Diagnosis and Treatment
Romain De Winter
In series: Dermatology - Laboratory and Clinical Research
In series: Immunology and Immune System Disorders
2013. 142 pp.
Softcover: 978-1-62618-802-0. $69.00.
Systemic sclerosis or scleroderma is an autoimmune disease characterized by widespread microangiopathy, immune system alterations and fibrosis of the skin and internal organs. This book presents current research in the study of the symptoms, diagnosis and treatment of scleroderma. Topics discussed include the identification and treatment of the pulmonary manifestations of systemic sclerosis; interstitial lung disease in systemic sclerosis; nailfold capillaroscopy and early diagnosis of systemic sclerosis; localized scleroderma; evaluation of a new CENPB epitope array for systemic sclerosis-associated centromere autoantibodies; and iloprost in the treatment of Raynaud phenomenon secondary to scleroderma.

Sexual Dysfunctions: Risk Factors, Psychological Impact and Treatment Options
Frédérique Courtios (Department of Sexology, Université du Québec à Montréal, Canada)
In series: Sexology Research and Issues
e-book: 978-1-62808-768-0. $150.00.
Sexual dysfunctions in men and women cover a wide range of disorders that can affect any phase of the human sexual response. They can originate from a variety of etiologies including (but not restricted to) neurological conditions, vascular diseases, psychological or psychiatric disorders, diabetes, lower urinary tract syndrome and prostatic conditions, all of which are covered in this book. Identifying the sexual dysfunction and its symptomatology is the first step to understanding the patient's complaint, but the etiology of the sexual disorder can also be a part of the treatment options and influence their relative effectiveness. This book is designed for a better understanding of the basics of human sexual functioning and the impact of various pathologies on the development and treatment of these dysfunctions. Following an initial definition of sexual dysfunctions in men (erection failure, persistent erection, delayed, retrograde, premature, anhedonic or painful ejaculation) and in women (hypoactive sexual desire, sexual arousal deficit, persistent genital arousal, dyspareunia, vaginism, anorgasmia), and following a description of the normal sexual functioning in men and later in women, the book addresses the issue of contributing factors (predisposing, precipitating, maintaining factors), or etiologies, that can participate in the emergence or maintenance of sexual dysfunctions. These include neurological conditions, which also highlight the role of the brain and neural pathways in modulating sexual responses, and their impact on genital reflexes and quality of life (e.g., spinal cord injury, multiple sclerosis). They include conditions such as prostatic diseases and their treatment with radical prostatectomy, or apparently benign activities such as bicycle riding (and its resulting nerve entrapment) and their impact on men's genital innervation and resulting in sexual dysfunctions. They also include general disease such as diabetes, which affects both men and women, and depression, and their resulting impact on sexual function and quality of life. Female pathologies such as women’s urogynecological disorders and aging on women’s normal function are also addressed, along with a discussion of the assessment’s limitations and unit care concerns (e.g., palliative care), which can contribute to the emergence or maintenance of sexual dysfunctions, and which are covered throughout the chapters of this book.

Short Bowel Syndrome in Children: Current Practice and Future Perspectives
Igor Sukhotnik (The Bruce Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, Laboratory of Intestinal Adaptation and Recovery, Dept. of Pediatric Surgery, Bnai Zion Medical Center, Haifa, Israel)
In series: Digestive Diseases - Research and Clinical Developments
Hardcover: 978-1-62948-518-8. $110.00.
Short bowel syndrome (SBS) is defined as intestinal failure following a loss of intestinal length which causes malabsorption and malabsorption of dietary nutrients and induces major fecal issues, loss of energy, nitrogen, and fat. Intestinal failure and SBS continue to be important clinical problems due to their high mortality and morbidity rates, as well as their devastating socioeconomic effects. Although intestinal transplantation has emerged as a feasible alternative in the treatment of children with SBS in the last two decades, intestinal adaptation remains the only chance for survival in a subset of these patients. Intestinal adaptation is defined as a process of progressive recovery from intestinal failure following bowel resection. In this book, the etiology of SBS, its pathophysiology, and the cellular and molecular mechanisms of intestinal adaptation are reviewed. The most common complications of SBS, including intestinal failure associated liver disease and sepsis, are outlined with strategies to reduce them. The medical management and nutritional support of a patient with short bowel syndrome is complex and requires a multidisciplinary approach with the surgeon, gastroenterologist, pharmacist and dietitian working together. Using a multivariate analysis approach, the one factor which contributed most significantly to this marked improvement in survival was the implementation of a comprehensive multi-specialty care team. Other groups have reported similar improved survival rates ranging from 87% to 100% in recent years; although the precise factor which has driven this marked improvement is not precisely known. The multidisciplinary teams created to manage the complexities of this population have shown improved outcomes. A review of the pharmacologic agents and growth factors that have been studied experimentally and administered clinically for the management of short bowel syndrome is presented. The mechanisms of action of peptide growth factors in intestinal cell proliferation as well as the effects of these factors on intestinal re-growth in an animal model of
short bowel syndrome are discussed. Surgical procedures to promote intestinal adaptation and intestinal lengthening have largely changed the available options for non-transplant interventions. The potential role of tissue engineering for SBS that go beyond the “simple” generation of the tubular small intestine is discussed. Such knowledge will likely provide the basis for further advances in the treatment of patients with short bowel syndrome and suggest new therapeutic strategies to maintain gut integrity, eliminate the dependence on total parenteral nutrition, and avoid the need for intestinal transplantation.

Sickle Cell Disease: A New Vision for an Old Problem
Darío Acuña-Castroviejo and Iryna Rusanova
(Institute of Biotechnology, Biomedical Research Center, Health Sciences Technology Park, University of Granada, Granada, Spain)
In series: Recent Advances in Hematology Research
Hardcover: 978-1-62257-469-8. $150.00.
e-book: 978-1-62618-774-0. $150.00.
Sickle cell hemoglobin (HbS) is the result of a single nucleotide change (GAG → GTG) in the β-globin gene, where valine replaces glutamic acid at the sixth amino acid position in the β-globin chain. Sickle cell disease is a growing global health problem. The World Health Organization has estimated that 7% of the world population has the mutation and 300,000–400,000 affected children are born every year. The disease progresses towards a severe chronic hemolytic anemia, and it shows a heterogeneous clinical course, related with different genetic factors. Despite the fact that all subjects with sickle cell disease (SCD) have the same single base pair mutation in the DNA, we further confirmed here that the severity of the clinical and hematological manifestations is extremely variable. Increasing evidence has indicated a role of oxidative stress in the vascular pathophysiology of SCD. The vascular endothelium is central to disease pathogenesis because it displays adhesion molecules for blood cells, balances procoagulant and anticoagulant properties of the vessel wall and regulates vascular homeostasis by synthesizing vasoconstricting and vasodilating substances. In addition, recent studies support the existence of a hyperoxidative status in SCD patients that may account, at least in part, for the clinical manifestations of these patients. Moreover, SCD patients with mild clinical outcomes were associated with low oxidative stress, whereas high oxidative stress was related to severe phenotypes. Thus, the use of oxidative stress biomarkers may be important in the evaluation of the clinical condition of SCD patients. The global burden of SCD is now significantly increased and, thus, it is currently a public health problem around the world. This disease has passed from being a problem of the developing countries to affect many people in developed countries. This book summarizes the current epidemiology status and the latest discoveries in the pathophysiology of SCD, and the potential therapies that may improve the clinical course of this disease.

SPECT: Technology, Procedures and Applications
Hojjat Ahmadzadehfar and Elham Habibi
(Department of Nuclear Medicine University Hospital Bonn, Bonn, Germany)
In series: Medical Procedures, Testing and Technology
2013. 262 pp.
Hardcover: 978-1-62808-344-6. $150.00.
Single Photon Emission Computed Tomography (SPECT) cameras have revolutionarily changed nuclear imaging techniques and given us new diagnostic possibilities. They provide images that reveal subtle information about physiological and pathological processes. For some indications like cardiac and brain imaging, as well as tumor imaging, the importance of SPECT compared to planar imaging is beyond words. This book covers a broad spectrum of clinical applications of SPECT in the diagnosis of benign and malignant diseases. The opening chapters discuss the technology and physics of SPECT and its use in dosimetry. Applications covered include, among others, imaging of the bone and lungs, imaging of neuroendocrine tumors, cardiac imaging and brain SPECT for different indications like brain tumors and epilepsy. In each chapter, different radiopharmaceuticals for SPECT imaging were discussed and the scan procedures described. Readers will find this book to be a useful source for often performed SPECT imaging in the clinical routine.

Systemic Lupus Erythematosus (SLE): Prevalence, Pathophysiology and Prognosis
Syuichi Koarada (The Division of Rheumatology, Saga University, Japan)
In series: Immunology and Immune System Disorders
2013. 194 pp.
Hardcover: 978-1-62808-134-3. $85.00.
Systemic lupus erythematosus (SLE) is one of the prototypical systemic autoimmune diseases characterized by inflammation, immune complex deposition, and vasculitis. Patients with SLE show various symptoms and clinical images, both constitutional and specific organ symptoms. They include the skin, joints, muscles, kidneys, lungs, nervous system, and blood vessels. Although the etiology of the disease is still unclear, genetic, hormonal, immunologic abnormalities and environmental factors complicately play important roles in the pathophysiology in SLE. It is evident that multiple genes show genetic susceptibility to SLE. Environmental factors of SLE and immunologic abnormalities, especially the production of a number of auto-antibody, are important features of the disease. In this book, we present recent knowledge about the prevalence, pathophysiology and prognosis of SLE. The book includes various interesting chapters: Chapter One - an illustrated overview of the prevalence and clinical symptoms of systemic lupus erythematosus; Chapter Two - the pathophysiology of systemic lupus erythematosus; Chapter Three - MBL and MBL genotypes in SLE; Chapter Four - novel biological activities of autoantibodies as the potential markers of systematic lupus erythematosus; Chapter Five - cytokines in systemic lupus erythematosus (sle) with clinical aspects and prognostics; Chapter Six - prognosis in systemic lupus erythematosus; and Chapter Seven -
autoantibody-producing RP105-negative B cells in humans and a murine model of lupus erythematosus.

The Benign and Malignant Prostate
Said Fadel Mishriki (Department of Urology Aberdeen, Royal Infirmary Hospital, Scotland, UK)
In series: Renal and Urologic Disorders
2013. 349 pp.
Hardcover: 978-1-62948-321-4, $175.00.

The Benign and Malignant Prostate contains all you need to know about the prostate from its anatomy to the most recent sophisticated robotic technical procedures. This book provides a comprehensive understandable account of benign and malignant prostate conditions, and is designed to be undemanding yet thorough and informative. Medical students will find this book useful because of its concise, easy-to-follow format, in addition to its depth and breadth of knowledge. Interns and residents, as well as practicing physicians and family doctors will consider it an efficient and current reference. Each chapter is self contained to make it easier to obtain information about a particular topic without having to refer to the whole book. The book is superbly illustrated throughout in order to enhance the clarity and understanding of the contents. Over 1,500 references are cited for those who wish to have a more in-depth insight. The text is up-to-date and include the most recent innovations, ensuring that the manuscript will remain relevant for some years to come. More than 30 qualified medical practitioners have contributed to the authorship about aspects with which they are clinically involved on a regular daily basis. Some are renowned experts in their field. The book contains 15 chapters. Six chapters are devoted to the benign prostate and provide practical advice regarding diagnosis and treatment. The remaining nine chapters are devoted to the detection, diagnosis, prognosis, treatment and outcomes of prostatic cancer, which is the most common tumour found in men.

The Complex Evolution of Kidney Transplantation - Pre-Transplant Donor and Recipient Assessment, Transplant Surgery, Immunosuppression, High-Risk Transplants and Management of Post-Transplant Complications
Wai Hon Lim (Department of Renal Medicine, Sir Charles Gairdner Hospital, Nedlands, Western Australia)
In series: Organ Transplantation Research Horizons
In series: Renal and Urologic Disorders

There has been a substantial increase in the number of patients with end-stage renal disease worldwide over the last few decades. In Australia, over 2,400 patients with end-stage renal disease started renal replacement therapy in 2011 with nearly 11,000 patients currently receiving dialysis treatment at the end of 2011. According to Kidney Health Australia, the costs of treating end-stage kidney disease from 2009 to 2020 is estimated to be around $12 billion, highlighting the fact that kidney disease is a major financial burden to the community. Kidney transplantation confers a survival benefit in patients with end-stage renal disease but transplantation has become increasingly more complex over the last decade. With the greater understanding of transplant immunology along with the introduction of more potent induction and maintenance immunosuppression, clinicians are now in a better position to more accurately stratify each transplant candidate’s immunological risk as well as the ability to safely transplant high-immunological risk transplant candidates. This book covers all major aspects of kidney transplantation and was put together with the hope of providing the readers with in-depth and current knowledge of important aspects of kidney transplantation, including donor and recipient assessments, innovative surgical techniques and understanding of surgical complications, the evolution of immunological techniques to identify anti-human leukocyte antigen antibodies, the management and preparation of high-risk transplant candidates for transplantation as well as the management of longer-term complications after kidney transplantation.

The Thousand and One Facets of Actinic Keratosis
Gérard E. Piérard, Claudine Franchimont and Philippe Delvenne (CHU Sart Tilman, Liège, Belgium)
In series: Dermatology - Laboratory and Clinical Research
Softcover: 978-1-62808-106-0, $52.00.
e-book: 978-1-62808-129-9, $52.00.

In humans, actinic keratosis is the most frequent lesion of the skin initiating a cascade of tumors ending with the squamous cell carcinoma, actinic type. This health problem is increasing worldwide in incidence in the past decades. It is most prevalent in fair-skinned individuals who expose their skin to ultraviolet light from sunshine and artificial sources. The present book provides essential up-to-date information about this common condition. It is presented in a convenient and practical format. This book explains new developments in the understanding of the skin cancer cascade initiated in the field photocarcinogenesis giving rise to actinic keratosis at the source of invasive actinic squamous cell carcinoma and its metastases. Quandaries about nosology, clinical diagnosis, histopathologic assessment, molecular biology advances and management are addressed. This book assembles important new scientific information on all aspects about the skin cancer cascade induced by the environment. It covers the clinical features and epidemiology to support prevention and therapy. Early diagnosis and treatment are essential in the populations at risk. This actinic keratosis survey will be an invaluable reference for all clinical dermatologists and any other physicians and researchers interested in skin cancerology covering the spectrum of chronically sun-exposed skin. The thousand and one facets of actinic keratosis was written to fit the clinical needs of very busy dermatologists, oncologists, skin investigators, pharmacologists, physician assistants and any practitioner caring for patients particularly exposed to a sunny environment.

Tuberculosis and Multidrug-Resistant Tuberculosis: Epidemiology, Diagnosis, Resistance Mechanisms, Treatment Strategies and Novel Drugs
Suhail Ahmad and Eiman Mokaddas (Kuwait University, Department of Microbiology, Safat, Kuwait)
In series: Allergies and Infectious Diseases
In series: Public Health in the 21st Century
2013. 143 pp.
Hardcover: 978-1-62808-309-5, $85.00.

Tuberculosis (TB), causing nine million active disease cases and 1.5 million deaths every year, is a formidable public health challenge, particularly in poor and developing countries around the world. Major reasons for global burden of TB include association of active disease with human immunodeficiency virus (HIV) co-infection or other underlying immunosuppressive conditions such as diabetes and increasing incidence of drug-resistant, multidrug-resistant (MDR) (resistant at least to rifampicin and isoniazid) and extensively drug-resistant (XDR) (additionally resistant to a fluoroquinolone plus kanamycin/amikacin/capreomycin) strains of M. tuberculosis. While treatment of drug-susceptible TB is effective in >95% of disease cases,
supervised therapy for >6 months is challenging. Inadequate/inappropriate therapy due to inability of poor patients to pay for drugs and non-adherence to treatment (regimen and duration) often results in much lower cure rates and evolution of drug-resistant strains of M. tuberculosis due to mutations occurring at a predictable rate in genes encoding drug targets. Sequential accumulation of mutations results in evolution of MDR and XDR strains of M. tuberculosis. Today, drug-resistant TB and MDR-TB have become prevalent in many parts of the world and XDR-TB strains are emerging rapidly. While MDR-TB is difficult to treat, XDR-TB is untreatable in most developing countries. Proper management of MDR-TB/XDR-TB patients relies on early diagnosis and aggressive therapy with several (5-7) expensive, toxic and less efficacious (second-line and third-line) drugs for >24 months which complicates adherence to treatment. Although current therapeutic agents are inadequate to meet the challenge, particularly in HIV-coinfected patients, several new drugs and new drug regimens are in late stages of clinical development to improve the outcome of MDR-TB/XDR-TB. This book provides an overview of the current state-of-the-art in molecular genetic basis of drug resistance in M. tuberculosis; conventional and molecular diagnosis of active TB, drug-resistant TB and MDR-TB/XDR-TB; new therapeutic approaches being used for treatment of MDR-TB/XDR-TB and anti-TB drug development pipeline.

**Update on the Epidemiology, Classification, and Genetic Factors of Gallstones and Basic Metabolism of Gallbladder Lipids**

**Shing-moo Huang (Faculty of Division of Surgery, Department of Medicine, Chung Shan Medical University, Taichung, Taiwan, Republic of China)**

In series: *Digestive Diseases - Research and Clinical Developments*

2013. 343 pp.


This book adheres to strict scientific principles and is designed to explore the whole aspect of gallstone disease from the micro world of genetic profiles, basic metabolisms of bile lipids in cholesterol gallstone patients, to the macro world of clinical triple defects of gallstone patients. It is especially suitable for medical professionals: internists, surgeons, residents, nurses and medical students, and for collection by libraries. This book contains updates of recent breakthroughs and developments in the genetic factors affecting cholesterol gallstone formation including genes for ABCB11, ABCG5/8, GPBAR1, OSTa/OSTβ, Megalin and Cubilin proteins. It also covers basic metabolisms of bile lipids in relation to stone formation, and some aspects of the epidemiology, classifications, chemical and crystallography of gallstones.

**Urinary Incontinence: Causes, Epidemiology and Treatment**

**Eric Chung (Department of Urology, Princess Alexandra Hospital, Brisbane QLD, Australia)**

In series: *Renal and Urologic Disorders*

2013. 316 pp.

Hardcover: 978-1-62618-482-4. $150.00.

In the last few years, there has been a significant volume of research published in the field of urinary dysfunction. Urinary incontinence can affect both men and women of all age-groups with varying degrees of severity. It is becoming an increasingly dominant health care issue with enormous economic burden and places considerable impact on the overall quality of life, impairing several areas with physical, social, emotional and sexual limitations. This up-to-date and exhaustively written textbook addresses a very difficult, underestimated, and probably inadequately considered clinical subject. This book provides comprehensive information on urinary incontinence and is primarily intended for medical practitioners, residents and medical students for daily practice. However the general public will find this book easy to read and provides ample information that is useful in understanding urinary incontinence.

**NEUROSCIENCE**

**Anticonvulsant Sulfonamides in Epilepsy and Other Neurological Disorders**

**Masako Kinoshita (Department of Neurology, Utano National Hospital, National Hospital Organization, Kyoto, Japan)**

In series: *Neuroscience Research Progress*


Softcover: 978-1-63117-087-4. $52.00.
e-book: 978-1-63117-337-0. $52.00.

Epilepsy is one of the most common neurological disorders, characterized by recurrent epileptic seizures, affecting all age groups which exhibit a wide range of symptoms and severities. Once seizures are well-controlled without impeding side effects or co-morbidities, patients with epilepsy can participate in various social activities and can maintain good quality of life. In order to achieve the condition, there are emerging new antiepileptic drugs with sufficient efficacy to both partial and generalized seizures, with minimum adverse events, applicable to both adults and children, and used as monotherapy or add-on therapy. Sulfonamide drugs have been originally developed as potent antimicrobial agents, and several antiepileptic sulfonamides show efficacy in epilepsy. This book will describe a recent role in epilepsy therapy, mechanism of action, use in epilepsy, and side effects of sulfonamide antiepileptic drugs, i.e., acetazolamide, sulthiame, topiramate, and zonisamide Not only practical use in the field of epilepsy, but also scientific issues as metabolism, interactions, possible effect to other neurological disorders of these drugs, will be summarized. Moreover, recent topics around wide variety of sulfonamide drugs will be covered. The author hopes to provide useful information to medical doctors, nurses, caregivers, pharmacists, and researchers engaging in epileptology, neurology and neuropharmacology, and anybody who are elaborating for a benefit of patients with epilepsy.

**Axons: Cell Biology, Molecular Dynamics and Roles in Neural Repair and Rehabilitation**

**Hiro Yamamoto and Aki Oshiro**

In series: *Neuroanatomy Research at the Leading Edge*

2013. 368 pp.

Hardcover: 978-1-62948-051-0. $150.00.

Axons are nerve fibers that typically conduct electrical impulses away from the neuron's cell body. The function of the axon is to transmit information to different neurons, muscles and glands. In this book, the authors discuss the cell biology, molecular dynamics and role in neural repair and rehabilitation of axons. Topics include the traumatic retraction of living neural processes and their inhibitions; water translocation from the axoplasm into the glioplasm during reactive reorganization of myelinated nerve fibers; problems and mechanisms in axonal afterdischarges; the putative role of axon cytoskeleton protein in MS repair; microtubules as a potential therapeutic target for the treatment of neurodegenerative diseases; morphometrical and molecular biological analyses of facial nerves in healthy adults and patients with facial nerve palsy; intrinsic axon growth potential; and
sensory axonal guidance by chemorepulsive and chemoattractive cues in higher vertebrates.

**Chronic Disorders of Consciousness: From Research to Clinical Practice**

*Rocco Salvatore and Calabrò Placido Bramanti* (IRCCS Centro Neurolesi “Bonino-Pulejo”, Messina, Italy)

In series: *Neuroscience Research Progress*

2013. 208 pp.


Chronic disorders of consciousness comprise a tragic group of conditions for which determining prognosis is a prerequisite for clinical decision-making. The Vegetative State (VS) and the Minimally Conscious State (MCS) are syndromes, encompassing a spectrum of severity with various etiologies, most commonly traumatic brain injury or hypoxic-ischemic or hemorrhagic neuronal injury. They can be a transient stage during recovery from an acute brain insult or can be chronic and stable, usually after a variable period of coma. Recent advances in neuroimaging are providing new insights into cerebral activity in patients with severe brain damage. The mapping of cognitive processes (mostly by measuring regional changes in blood flow, initially by PET and currently by fMRI, and by measuring regional metabolic changes by MRSI) is providing insight into the functional neuroanatomy and metabolic assessment of consciousness. However, differential diagnosis of SV and MCS is still difficult and their complex management involves many different and skilled healthcare professionals. This book is aimed at examining the pathophysiology of consciousness disorders with their multifaceted assessment and treatment, including new diagnostic tools and novel prognostic markers, and the important bioethical issues concerning “the end of life” and the “dignity of the person”.

**Cognitive Dysfunctions: Biological Basis, Management of Symptoms and Long-Term Neurological Implications**

*Evan N. Burgess and Luke A. Thornton*

In series: *Neuroscience Research Progress*


Hardcover: 978-1-62948-438-9. $95.00.


In this book, the authors present current research in the study of the biological basis, management of symptoms and long-term neurological implications of cognitive dysfunction. Topics discussed in this compilation include the association of cognitive dysfunction with obstructive sleep apnea (OSA); chemotherapy-treated cancer patients who experience chemotherapy-related cognitive impairment during or after treatment sessions; alterations observed in glutamatergic/GABAergic circuitry in the brain in MS or CMS animal models that could be underlying in stress induced cognitive dysfunction; Coffin-Lowry syndrome as an X-linked intellectual disability caused by RSK2 protein kinase deficiency; bioeducational science as an emerging field to diagnose cognitive discomfort and specific learning disorders; and the systemic blockade of Cav2.1 mediated NMDA receptor signaling. Consciousness: States, Mechanisms and Disorders

**Andrea Eugenio Cavanna (Department of Neuropsychiatry, Birmingham and Solihull Mental Health NHS Foundation Trust The Barberry National Centre for Mental Health, Birmingham, United Kingdom) and Andrea Nani (University of Turin, Italy)**

In series: *Perspectives on Cognitive Psychology*


Hardcover: 978-1-62081-311-9. $150.00.

Softcover: 978-1-62948-988-9. $89.00.


The so-called “hard problem” of consciousness, i.e., the problem of explaining how and why we have conscious experiences, has received different formulations across time. Back in 1868, Thomas Henry Huxley suggested that the mystery of consciousness resides somewhere – or somehow – in the activity of the brain. Since then, both clinical and basic neurosciences have taken the problem of consciousness seriously, joining the allied disciplines of philosophy and psychology in the seemingly insurmountable quest for consciousness. This book presents some of the latest research in the multidisciplinary field of consciousness studies, dealing with both theoretical and experimental aspects encompassing a wide range of normal and pathological states of consciousness.

**Contemporary Issues in Peripheral Neuropathy**

*Daniel L. Menkes (UCHC Neurology Department, Farmington, Connecticut, USA)*

In series: *Neurology - Laboratory and Clinical Research Developments*


There are many books on polyneuropathy available that are comprehensive in nature. Many of these are encyclopedic in their scope. However, there are very few books that review the basics of clinical neurophysiological testing, genetics and the commonly encountered neuropathies. There are even fewer that are willing to address less commonly encountered neuropathies such as amyloidosis and neuropathies associated with HIV infection. Many such textbooks also avoid interdisciplinary topics such as the management of pelvic floor dysfunction and the surgical treatment of compression and traumatic neuropathies. This book addresses this void by dividing this book into three distinct sections. The first three chapter section addresses basic clinical neurophysiological techniques, genetic testing and the inherited neuropathies. The larger middle section addresses acquired demyelinating neuropathies, monoclonal gammapathies, HIV neuropathy and familial amyloidosis. The final section concludes with a summary of neuropathies affecting pelvic function and a plastic surgeon’s approach to the treatment of compression and traumatic neuropathies. The authors who wrote these chapters have extensive expertise in these topics such that the literature review was comprehensive. The final chapter on the surgical treatment of compression neuropathies may be viewed as controversial by some and even heretical by others but it provides a unique perspective on the management of patients who are symptomatic and yet have relatively unremarkable clinical and electrodagnostic investigations. The reader will find up to date information on a variety of topics; common and uncommon. This book attempts to educate as well as challenge the reader.
Dyslexia: A Visual Approach
Carlo Aleci (Department of Ophthalmology, The Gradenigo Hospital, Turin, Italy)
In series: Neurodevelopmental Diseases - Laboratory and Clinical Research
In series: Neurology - Laboratory and Clinical Research Developments
2013. 343 pp.
Hardcover: 978-1-62618-534-0. $175.00.
e-book: 978-1-62618-790-0. $175.00.
Even if the ophthalmological aspects of developmental dyslexia are generally considered negligible in comparison to the cognitive and phonological ones, a growing body of evidence suggests in many patients the presence of deficiencies related to a neuronal subpopulation along the visual pathway. Still, even in the limited area of neuro-ophthalmological research, there is no general agreement on the mechanisms underlying reading impairment and on how the ophthalmological element determines the phenotype, that is to say the typical symptomatology. Nevertheless, the spatial and temporal vision in dyslexics seem to be defective. The purpose of this work is to report in a critical way the state of the art visual research in developmental dyslexia, without considering the aspects that go beyond our competence. In the second part of the treatise, the personal approach to the visuo-perceptual impairment in this clinical condition is phenomenological rather than ophthalmological: it investigates the problem from the perceptive symptoms and signs rather than from the causal hypothesis and from the anatomofunctional demonstration. Without claiming to exhaust the subject, we have pursued a triple aim: trying to shed light on one of the most debated and controversial questions, providing a rigorous and comprehensive overview on the current acquisitions, and, why not, offering some cues to those who intend to contribute to solve this problem.

Dyslexics: Dating, Marriage and Parenthood
Neil Alexander-Passe (Middlesex University, Woodside Park, London, United Kingdom)
In series: Dyslexia. An Academic Perspective
Edited by: Neil Alexander-Passe (London, UK)
Hardcover: 978-1-61942-520-0. $195.00.
This new and innovative book aims to investigate adult dyslexics and their long-term relationships, along with their journey through parenthood. The book begins by investigating adult dyslexics and their childhoods, looking at their emotional and behavioural coping strategies. These adults, with others from a website for adult dyslexics, look at the impact childhood trauma has on dating, then on marriage/long-term partners. A commissioned study interviewing long-term partners of dyslexics brings new perspective to understanding how dyslexia affects relationships and how they interact as parents. What seems clear from combining the many perspectives is that dyslexia has a distinctive effect on relationships, with communication being one of the greatest problems. Non-dysexic partners seem to be attracted by the quirkiness that comes with dyslexia, and the dyslexic ability to think out of the box being divergent thinkers. However the effects of dyslexia can also bring difficulties in reading social non-verbal clues, an inability to express oneself coherently, and the inability to converse with peers in general conversation. The research found that many dyslexic parents feel inhibited by school homework and interactions with school, creating an unbalanced weight on non-dysexic partners to manage not only the home and finances, but all dealings with school. This extra burden can have a heavy impact on the survival of the relationship, and ‘social exchange theory’ is investigated with dyslexics. Dyslexia and careers are also investigated, with ‘post-traumatic growth theory’ used to explain why many dyslexics overcome extreme trauma in mainstream education, but still attain post-school at university and in business. This is an important theory that explains their resilience and motivation to succeed. The book ends with a comprehensive hints and tips section for dyslexics and their non-dysexic partners to aid relationships, marriage and parenthood with both dyslexic and non-dyslexic children.

Excitotoxicity: Fundamental Concepts, Pathophysiology and Treatment Strategies
Emerson D. Metzger and Keith G. Halsey
In series: Neuroscience Research Progress
Softcover: 978-1-62948-485-3. $72.00.
e-book: 978-1-62948-486-0. $72.00.
Excitotoxicity is the pathological process in which neurons are damaged and killed by overstimulation of the excitatory neurotransmitter glutamate receptors. Excitotoxicity may be involved in spinal cord injury, stroke, traumatic brain injury, hearing loss (through noise overexposure or ototoxicity) and in neurodegenerative diseases of the central nervous system (CNS) such as multiple sclerosis, Alzheimer's disease, amyotrophic lateral sclerosis (ALS), Parkinson's disease, alcoholism or alcohol withdrawal and especially benzodiazepine withdrawal, and also Huntington's disease. In this book, the authors discuss the fundamental concepts, pathophysiology and treatment strategies of excitotoxicity. Topics include the involvement of glutamate excitotoxicity in Parkinson's disease; the relevance of the excitotoxic process to schizophrenia; the role of glial cells during the regenerative process and possible strategies of treatment to avoid neuronal damage; and an overview of the current concepts related to the intermittent-hypoxia-induced excitotoxicity in obstructive sleep apnea (OSA) disease.

Globus Pallidus: Regional Anatomy, Functions/Dysfunctions and Role in Behavioral Disorders
Cynthia R. Gordon and Thomas G. Abbabelli
In series: Neuroscience Research Progress
Softcover: 978-1-62948-367-2. $72.00.
The globus pallidus is a structure in the brain involved in the regulation of voluntary movement. It is part of the basal ganglia, which, among many other things, regulate movements that occur on the subconscious level. In this book, the authors present current research in the study of the regional anatomy, functions/dysfunctions and role in behavioral disorders of the globus pallidus. Topics discussed include imaging of the globus pallidus in patients suffering from pantothenate kinase-associated neurodegeneration (PKAN); anatomofunctional territories and pathophysiological relations in the globus pallidus; a population activity model of cortico- striatal circuitry underlying behavioral inhibition in rats; and the neuropathology of the basal ganglia and its role in the Parkinsonian syndromes with special reference to the globus pallidus.

Habituation: Theories, Characteristics and Biological Mechanisms
Arie Buskirk
In series: Neuroscience Research Progress
2013. 182 pp.
Hardcover: 978-1-62808-831-1. $120.00.
e-book: 978-1-62808-832-8. $120.00.
Habituation is a decrease in responsiveness to a repeatedly presented stimulus. Habituation has an important role in attention. By reducing our sensitivity to a constant source of stimulation, it releases attention resources to process new distinct items. In this book, the authors discuss the theories, characteristics and biological mechanisms of
Habituation. Topics include the important roles for matrix metalloproteinases and cell adhesion molecules in long-term potentiation (LTP), habituation, and drug addiction; habituation theories in current models of chronic tinnitus; habituation deficits in childhood disorders and traumatic brain injury; a mathematical description of habituation and recovery of the head-shake response in rats; and the influence that habituation has on the sensory system and its involvement in many ENT fields.

**Handbook of Modern Techniques in Auditory Cortex**

**Didier A. Depireux and Mounya Elhilali (Inst. for Systems Research, University of Maryland, College Park, MD, USA)**

In series: *Otolaryngology Research Advances*

2013. 239 pp.

Hardcover: 978-1-62808-984-6. $150.00.

A host of new techniques have recently been developed in the study and modeling of the auditory pathway. These techniques, made practical thanks to recent development in computer power and memory, are often referred to as "broadband methods". These methods have allowed us to better understand how complex sounds such as music and running speech are encoded along the auditory pathway in a noise-robust fashion, and the resulting cortical models have been used in speech recognition, vehicle identification and speaker identification with great success. These techniques were developed and refined over the last 20 years, and as a result, the published literature offers a scattered, and sometimes seemingly contradictory, account. The different stimuli used might give an impression of incompatibility between the different research groups, with no clear reason to choose one approach over the other. Recently, these methods were shown to be almost equivalent. This leads to a very confusing situation for a researcher who wants to apply these new techniques to his or her current research: depending on how far back the researcher goes, the literature will appear to change over, and even to be self-contradictory. This book is the first to present, in a single volume, the different broadband methods, their different philosophies, their relative advantages and disadvantages, and a methodology that will help the would-be-practitioner get started, navigate the literature, and chose the method most appropriate to her needs.

**Horizons in Neuroscience Research. Volume 12**

**Andres Costa and Eugenio Villalba**

In series: *Horizons in Neuroscience Research*


Hardcover: 978-1-62618-964-5. $150.00.

This compilation presents original study results on the leading edge of neuroscience research. Each article has been carefully selected in an attempt to present substantial research results across a broad spectrum. Included in this volume are study results on the neuroprotective effects of N-acetylcysteine; the neuroinflammatory mediators elicited by astrocytes and microglia in response to myelin basic protein (MBP); neuromodulation in the neuromodulatory circuits of post-traumatic disorder (PTSD); invasive and non-invasive monitoring of intracranial pressure; basal ganglia and neurological soft signs in schizophrenia; magnetic and non-magnetic iron-oxide deposits in basal ganglia; N-acetylcysteine and its use in the treatment of addictive disorders; EEG processing and feature extraction for objective diagnosis of neuronal diseases as ADHD; neuronal cell regeneration in the olfactory bulb; and MRI images processing with machine learning techniques.

**Horizons in Neuroscience Research. Volume 13**

**Andres Costa and Eugenio Villalba**

In series: *Horizons in Neuroscience Research*


Hardcover: 978-1-62948-426-6. $150.00.

In this book, the authors present current research in the study of the causes, treatment options and potential complications of cirrhosis. Topics discussed include optimal medical management of liver cirrhosis without liver transplant; cardiac dysfunction in end stage liver disease; bacterial infections in cirrhosis; asymmetric dimethylarginine (ADMA) and endothelial dysfunction in cirrhosis; surgical risk associated with cirrhosis; the physics of liver fibrosis and cirrhosis; endoscopic oblitative therapy with cyanoacrylate for gastric varices; and surgical resection of hepatocellular carcinoma.

**Horizons in Neuroscience Research. Volume 14**

**Andres Costa and Eugenio Villalba**

In series: *Horizons in Neuroscience Research*


Hardcover: 978-1-63117-401-8. $150.00.

This compilation presents original study results on the leading edge of neuroscience research. Each article has been carefully selected in an attempt to present substantial research results across a broad spectrum. Included in this volume are amygdala-induced modulation of cognitive brain structures; plasticity and pathology of dentritic intrinsic excitability; the neurotropic effects of heavy metals; fundamental mechanisms of glutamate neurotoxicity; dendritic morphology and connectivity in the medial amygdala; cultured adult dorsal root ganglion neurons; cognitive function with diabetes mellitus; and the posterdorsal medial amygdala, emotion and the sexually dimorphic social behavior network.

**Huntington's Disease: Symptoms, Risk Factors and Prognosis**

**Kevin Guilloy and Alex M. Carrasco**

In series: *Neurodegenerative Diseases - Laboratory and Clinical Research*


Softcover: 978-1-62808-316-3. $95.00.
e-book: 978-1-62808-317-0. $95.00.

Huntington's disease (HD) is a progressive, neurodegenerative genetic disorder characterized by motor dysfunctions, cognitive decline, and psychiatric symptoms. In this book, the authors discuss the symptoms, risk factors and prognosis in Huntington's disease. Topics include the pathogenic mechanisms by which the expanded polyglutamine huntingtin causes neuronal dysfunction and death and the potential therapeutic strategies recently developed for this incurable disorder; the role of brain-derived neurotrophic factor in Huntington's disease; and the legal ramifications in relation to evolving impairments of capacity which can have an outcome in terms of involuntary status as mental health patients, testamentary capacity and the need for guardianship and administration orders.

**Insula: Neuroanatomy, Functions and Clinical Disorders**

**Lucina Q. Uddin (Stanford University School of Medicine, Palo Alto, CA, USA)**

In series: *Neuroscience Research Progress*


Hardcover: 978-1-63117-175-8. $95.00.
e-book: 978-1-63117-176-5. $95.00.

Recent work in cognitive neuroscience, clinical psychology, psychiatry and neurology has implicated the insular cortex in a variety of functions, ranging from lower level perceptual and basic sensory processes to high-level cognitive processes including attention and cognitive control. Given the multitude of functions supported by this diverse brain region, it is imperative for clinicians and scientists to have a resource summarizing the current literature. This volume
includes a collection of chapters from leaders in the field. A detailed neuroanatomy of the human insulin cortex is described, including what is known about its connectivity profile and pattern of interactions with other brain regions. The functional profile of the insula is reviewed, with a particular emphasis on information that is critical for clinicians to keep in mind. Scientists at all levels, from graduate students with a growing interest in the enigmatic insular cortex, to research scientists who have been actively studying this region for their entire careers, will find this volume to be a useful and concise resource.

**Intelligence Quotient: Testing, Role of Genetics and the Environment and Social Outcomes**  
Joe Kush (Department of Instruction and Leadership in Education, Duquesne University, Pittsburgh, PA, USA)  
In series: Neuroscience Research Progress  
2013. 219 pp.  
Hardcover: 978-1-62618-728-3, $150.00.  

"Intelligence Quotient: Testing, Role of Genetics and the Environment and Social Outcomes", is an edited collection that examines advances in the study of IQ tests and the variables that influence test performance. The book contains contributions from a number of prominent scholars who are internationally recognized for their expertise in the area of human intelligence. Additionally, the compilation presents a unique combination of theoretical knowledge and practical advice and will be an excellent resource for graduate students, university professors and experienced clinicians. A particular emphasis is given to the role of IQ tests, as part of a diagnostic battery, in the identification of cognitive and psychological disorders. Individual chapters cover a broad range of topics related to IQ including, the underlying structure of contemporary IQ tests, race and genomics, the relationship between IQ and achievement, measures of mental chronometry, evolutionary adaptedness, IQ and dopamine receptor genes, Ashkenazi Jews, assessment practices for gifted children and preschool students, and errors in measurement when assessing intellectual disabilities. Topics are covered in a comprehensive and up-to-date manner, yet accessible to both novice and expert professionals. A working knowledge of psychometric theory is helpful but not necessary. The book avoids any attempt to make a claim regarding exact estimates of the genetic or environmental influences on measures of IQ. Fully recognizing the complex interplay between these factors. However, the value of IQ tests in predicting scholastic achievement, diagnosing cognitive diseases, and assessing individual differences is acknowledged and affirmed, when recommendations offered by the authors are implemented within thoughtful and data-supported practices.

**Metabotropic Glutamate Receptors: Molecular Mechanisms, Role in Neurological Disorders and Pharmacological Effects**  
M. Foster Olive (Behavioral Neuroscience Area, Department of Psychology, Arizona State University, Arizona, US)  
In series: Neuroscience Research Progress  
2014.  
Hardcover: 978-1-63117-451-3, $150.00.  
e-book: 978-1-63117-466-7, $150.00.

As the most abundant excitatory neurotransmitter in the brain, glutamate plays an important role in numerous aspects of normal and pathological brain function. This book provides an overview of the role of metabotropic glutamate receptors (mGluRs) in basic brain functioning, such as autonomic regulation, synaptic plasticity, and learning and memory. Also provided are up-to-date summaries of recent progress towards identifying how mGluRs both mediate and represent novel pharmacotherapeutic targets for the treatment of various neurological and neuropsychiatric disorders, such as depression, anxiety, schizophrenia, amylodisgenous disorders and substance abuse.

**Mild Cognitive Impairment (MCI): Symptoms, Causes, Risk Factors and Clinical Outcomes**  
Leon R. Kline and Tim A. Crosby  
In series: Neuroscience Research Progress  
2013. 89 pp.  
Softcover: 978-1-62948-393-1, $72.00.  
e-book: 978-1-62948-394-8, $72.00.

Mild cognitive impairment (MCI) is a brain function syndrome involving the onset and evolution of cognitive impairments beyond those expected based on the age and education of the individual. In this book, the authors discuss the symptoms, causes, risk factors and clinical outcomes of MCI. Topics include cognitive decline in MCI and Alzheimer's disease and β-amyloidosis and tauopathy versus cerebrovascular risk; the relationship between EEG Alpha3/Alpha2 ratio and the nucleus accumbens in subjects with Mild Cognitive Impairment; brain correlates of impaired clock drawing performance in MCI and Alzheimer's disease; and a new test for the early uptake of Alzheimer's disease.

**Motor Neuron Diseases: Causes, Classification and Treatments**  
Bradley J. Turner (Univ. of Melbourne, Australia) and Julie B. Atkin (La Trobe Univ., Bundoora Victoria, Australia)  
In series: Neurology - Laboratory and Clinical Research Developments  
2014. 245 pp.  
Hardcover: 978-1-61470-101-9, $140.00.  
Softcover: 978-1-63117-342-4, $89.00.  

Motor neuron disease (MND), also commonly known as amyotrophic lateral sclerosis (ALS), is a chronic neurodegenerative disorder of the motor system in adults, characterized by the loss of motor neurons in the cortex, brain stem and spinal cord. This book presents current research from across the globe in the study of the causes, classification and treatments of MND, including membrane trafficking defects as determinants of motor neuron susceptibility and degeneration in ALS; motorneuron specific calcium dysregulation and perturbed cellular calcium homeostasis in ALS; stem cells and their application in ALS treatment; excitotoxicity and selective motor neuron degeneration and therapeutic intervention and assistive technology treatments.

**Muscular Dystrophy: Causes and Management**  
Corrado Angelini (Dipartimento di Neuroscienze, Università di Padova, Padova, Italy)  
In series: Neurodegenerative Diseases - Laboratory and Clinical Research  
In series: Muscular System - Anatomy, Functions and Injuries  
2013. 520 pp.  
Hardcover: 978-1-62618-460-2, $230.00.  

Muscular Dystrophies include a heterogeneous series of diseases that range from childhood to adult onset cases, of difficult diagnosis and treatment. This book presents the state of the art in muscular dystrophies, after the molecular revolution. In the field of patients' diagnosis, several advances have been done by recognizing new entities. New techniques such as biochemical, molecular advancements, and the use of muscle MRI are collected that allow rapid diagnosis. Also, advances in therapy and therapeutic trials are
presented in Duchenne and other muscular dystrophies and some novel treatments in glycogen storage disease by enzyme replacement are proposed. Both rehabilitation techniques and other treatments deserve particular attention for the improvements observed.

Neuro-Immune Interactions in the Adult Central Nervous System
Oscar González-Pérez (Facultad de Psicología, University of Colima, Mexico)
In series: Neuroscience Research Progress
Hardcover: 978-1-62948-646-8. $150.00.
Increasing evidence indicates that inflammatory cells and immunological cytokines can enter into the brain and modulate a number of biological and cognitive functions. Under physiological conditions, only a few immune cells, such as: macrophages, lymphocytes and dendritic cells can cross the blood-brain barrier and gain access to neural tissue. For many years, these findings supported the notion that the brain was an immunologically privileged organ. To date, increasing evidence strongly challenges this conjecture. In fact, neuroinflammation triggers a significant infiltration of immune cells into the cerebral parenchyma. The infiltration of inflammatory cells is accompanied by the release of a number of cytokines that target neurons, astrocytes and microglia. This interaction between the immune system and the central nervous system modulates many cerebral functions, such as: neural remodeling, synaptic plasticity, neurotransmitter releasing, stress-associated response, cognitive and mental disease progression, and others. The book summarizes the latest discoveries, from basic to clinical science, regarding the interactions between the immunological mediators and the neural tissue under physiological and pathological conditions. In this book, it is discussed the influence of immune cells and cytokines in neural-regulated systems. Herein, the readers can find comprehensive descriptions in diverse fields, such as: lipids and obesity, neuronal activity, neurotransmission, stress pathogenesis, rheumatologic diseases, spinal cord injuries, regulation of neural stem cells, neural control of reproduction, and others. To ensure that most of readers obtain clear and complete information, all chapters have been written by prominent experts in their respective fields, who explain these topics with a very accessible language. In summary, this book represents a highly-updated compendium about the interactions between the central nervous system and the immune system that could be very useful for undergraduate students, postgraduate students, academic educators or trainers, basic science researchers and clinical physicians.

New Developments in Sensory Processing Research
Marcel Voisin and Roger Brunel
In series: Neuroscience Research Progress
Hardcover: 978-1-62808-395-8. $95.00.
e-book: 978-1-62808-399-6. $95.00.
Sensory processing relates to the brains ability to organize and decipher different kinds of sensation entering the brain at the same time. In this book, the authors present current findings on new developments in sensory processing research. Topics discussed include descriptive sensory analysis of food; cellular principles of serotonergic modulation; sensory modalities processing in sensorimotor tasks depending on state and trait anxiety; and regulatory disorders of sensory processing.

Preventing Alzheimer's Disease – Personal Responsibility
Yoram Barak (Psychogeriatric Department, Abbarbanel Mental Health Center, Israel)
In series: Neurodegenerative Diseases - Laboratory and Clinical Research
2013. 130 pp.
Softcover: 978-1-62948-717-8. $52.00.
The prevention of dementia, and particularly of Alzheimer’s disease, is a major challenge for researchers and clinicians. In this book, the mixture of evidence, observations and hypotheses in the current literature is categorized into avenues for possible preventive interventions, as suggested by the NIH State-of-the-Science Conference. The main categories are: antihypertensive medications; nutrition; cognitive engagement; volunteering and physical activity. There is, as yet, no conclusive evidence, but each category may hold promise for the prevention of dementia. The robust findings are as follows: cognitive engagement and regular physical activity may reduce the risk of Alzheimer’s disease; the Mediterranean diet and consumption of omega-3 fatty acids deserves further elucidation; and the meticulous management of risk factors, and especially hypertension, is the infrastructure of Alzheimer’s disease prevention. Combating loneliness and volunteering both contribute to reducing the risk of dementia.

Reflections: A Dream Quest
George Holton Elder (Independent Researcher and Writer, White River Junction, VT, USA)
In series: Neuroscience Research Progress
2014. 244 pp.
Hardcover: 978-1-62948-621-5. $150.00.
This is a book that addresses the history and science of dreams. The author uses his own dreams as examples, some of which are unique due to Elder's personal and medical history. The dreams include typical experiences, such as flying, but also extend to intriguing astral events, prophecies, and messages on the nature of existence. The author employs the first-person present tense perspective when describing his dreams, which makes them exciting and fast-paced. The narrative sections follow the typical academic style, although Elder has endeavored to make the material accessible to the widest possible audience. Unlike many mass-market books on this subject, it also examines dream science and history in considerable depth, providing readers with a wealth of unique insights into what dreams are and why we have them. For example, Elder relates some forms of dream prophecy to the workings of our episodic memory system, finding a persuasive basis of support in modern schema theory and neuropsychological research. Other dreams, such as those concerning God, humanity's future, and astral adventures occasionally defy the author's tendency to find rationalistic explanations, a fact that he both dislikes and admits. The historical review stretches back to Gilgamesh, and runs up to modern findings in the neurosciences. Of course, the ideas of Freud, Jung, and others are discussed along the way, with the reader getting a great deal of information on what dreams were thought to mean over the ages. Indeed, there are over 380 sources scattered throughout the text, and a quick review of the bibliography will reveal that this is a manuscript of considerable research and substance. Readers from high school to post-graduate levels will find items of interest in this fast-moving text, which leaves a message that is as much spiritual and moral as it is scientific.
Transcranial Magnetic Stimulation: Methods, Clinical Uses and Effects on the Brain
Lucia Alba-Ferrara (Department of Psychiatry and Neuroscience, University of South Florida, Tampa, FL, USA)
In series: Neuroscience Research Progress
Hardcover: 978-1-62618-679-8, $150.00.
e-book: 978-1-62618-736-8, $150.00.
Transcranial Magnetic Stimulation (TMS) is one of the principal research methods used in systems, cognitive and clinical neuroscience. Originally envisioned as a way to measure the responsiveness and conduction speed of neurons and synapses in the brain and spinal cord, TMS has also become an important tool for changing the activity of brain neurons and the functions they underpin; and as an important adjunct to brain imaging and mapping techniques. Recently, TMS has become a therapeutic technique for neurological as well as psychiatric disorders. This book aims to bring together the basic science, fundamental principles and essential procedures of Transcranial Magnetic Stimulation (TMS), as well as its current and potential clinical applications. The first and second parts of the book present overviews of the principles of TMS, methodological issues in TMS research, the effect of TMS in the brain and its mechanism of action. These chapters also present novel data about cognitive mechanisms in the healthy brain as investigated by using TMS. The next two sections summarize state-of-the-art therapeutic uses of TMS in neurological diseases and Psychiatric disorders. TMS use is evaluated in chronic as well as acute conditions. Moreover, novel potential therapeutic interventions are suggested for some diseases in which further research using TMS is warranted. Finally, the use of TMS for children and adolescents with developmental disorders is discussed, and safety protocols for TMS treatment in the developing brain are proposed. This book should be of interest for researchers in neuroscience, neurologists, psychiatrists and psychologists.

Use of Focused Ultrasound for Stimulation of Various Neural Structures
Leonid R. Gavrilov (N.N. Andreyev Acoustics Institute, Moscow, Russia)
In series: Acoustics Research and Technology
Hardcover: 978-1-62948-929-2, $85.00.

The subject of this book is the description and analysis of research, carried out mainly in several Russian institutes, on the application of focused ultrasound for stimulation of somatosensory, hearing and other neural structures. It is well-known that focused ultrasound is used widely for local ablation of diseased or damaged biological tissues and has become one of the most popular, safe and effective methods for application in medicine amongst existing physical technologies. The content of this book is related with completely different field of investigation, namely, with application of focused ultrasound for activation of peripheral receptor structures. Stimulation of various neural structures was implemented with the use of short pulses (stimuli) of focused ultrasound in the MHz-frequency range. It was shown that the use of amplitude-modulated ultrasound for inducing of hearing sensations has become a separate and important field of research useful for application in diagnostics of different hearing disorders as well as for prosthetics of hearing function of the deaf people. An important part of the book is investigations of the main affecting factors of focused ultrasound and mechanisms of its stimulating effects. The possibilities of the practical use of these effects including their applications in clinical medicine for diagnostics of different neurological, dermatological and hearing diseases are also presented in this book. One of its aims was also to submit an analysis of numerous works carried out in many countries and, first of all, in the USA, regarding the use of focused ultrasound for reversible effects on different neural structures, including the brain structures. Such well-known effects as so called ultrasound neurostimulation and neuromodulation of the brain structures will be discussed, as well as advantages and limitations of focused ultrasound as a tool for neuromodulation of the central nervous system.

Working Memory: Developmental Differences, Component Processes and Improvement Mechanisms
Helen St. Clair-Thompson (University of Hull, UK)
In series: Neuroscience Research Progress
Hardcover: 978-1-62618-927-0, $150.00.
This book presents the latest research in working memory from around the world. There are thirteen chapters which are ordered according to three main themes. Chapters concerned with developmental differences address the relationships between working memory and children’s learning and school performance, the role of working memory in the development of planning, associations between working memory and implicit learning, and theoretical models that account for visuo-spatial working memory development. Chapters concerned with component processes address issues of visual feature binding, aspects of cognitive load theory, the processing of affective stimuli in working memory, and the role of working memory in spatial orientation and navigation. Finally, a section on improvement mechanisms is comprised of chapters related to improving working memory through the differential outcomes procedure, applying transcranial alternating stimulation to the dorsolateral prefrontal cortex, and methods of cognitive remediation including working memory training both in participants with ADHD and other populations. The chapters provide comprehensive reviews as well as presenting new empirical data concerned with these topics. They aim to further the current understanding of working memory from developmental, cognitive, and educational perspectives. The book should therefore be of interest to all academics and researchers with an interest in working memory and related skills.

NUTRITION
Carotenoids: Food Sources, Production and Health Benefits
Masayoshi Yamaguchi (Department of Hematology and Medical Oncology, Emory University School of Medicine, Atlanta, GA, USA)
In series: Nutrition and Diet Research Progress
2013. 369 pp.
Hardcover: 978-1-62808-622-5, $175.00.
e-book: 978-1-62808-625-6, $175.00.
Carotenoids are the most widespread pigments in nature. One or more carotenoids in combination give rise to colors ranging from yellow to red in birds, fishes, crustaceans, microorganisms, fruits and plants, including the dark green ones. There are over 600 known carotenoids and they are divided into two classes: xanthophylls, which contain oxygen, and carotenes, which are purely hydrocarbons and contain no oxygen. Carotenoids have many health benefits including antioxidant properties, free-radical scavengers, decreasing the risk of cardiovascular disease, anti-inflammatory properties, osteoporosis prevention and other diseases. The 15 chapters in this book have been written to outline recent topical research.
Competitive Foods in Schools: Revenue Issues and Nutrition Standards for Snacks
Jared N. Denham
In series: Nutrition and Diet Research Progress
Hardcover: 978-1-62948-006-0. $110.00.

Across America, meals provided through USDA’s National School Lunch Program (NSLP) and School Breakfast Program (SBP) supply most of the foods and beverages obtained by children at school. Most schools also sell competitive foods, or “a la carte” items, alongside USDA school meals, in vending machines, or in school stores and snack bars, with proceeds going to the school foodservice or fundraising school groups. These foods have been widely criticized as being of low nutritional value, undercutting public efforts to improve children’s diets and prevent obesity. The Healthy, Hunger-Free Kids Act of 2010 requires schools that offer USDA school meals to limit competitive foods to those that meet updated nutrition standards, under development by USDA’s Food and Nutrition Service (FNS). Limiting the types of competitive foods available for sale may result in lost revenue for school foodservices, which depend on varying degrees on this revenue stream. Because USDA school meal programs are a part of the Nation’s nutrition safety net, the contribution that competitive food revenues make to foodservices serving economically vulnerable student populations is of particular interest. This book examines how updated nutrition standards for competitive foods might affect competitive food availability, and the implications for foodservice revenues.

Dietary Fiber: Sources, Properties and their Relationship to Health
David Betancur-Ancona, Luis Chel-Guerrero and Maíra Segura-Campos (Facultad de Ingeniería Química, Campus de Ciencias Exactas e Ingenierías, Universidad Autónoma de Yucatán, Yucatán, Mexico)
In series: Nutrition and Diet Research Progress
Hardcover: 978-1-62988-931-6. $150.00.

Dietary fiber is a broad term that includes non-digestible complex carbohydrates, such as cellulose, hemicellulose, mucilage and colloids, like pectin, carrageenan and arabic, xanthan or guar gum. Dietary fiber is a plant basic structural factor and exists in water-soluble and non-soluble form. Soluble fiber is found in certain fruits and vegetables such as oranges, apples, bananas, broccoli and carrots. It also exists in large amounts in legumes such as peas, soybeans, lentils and beans. Secondary sources include oat bran, soybeans, nuts and seeds. Sources of insoluble fiber are whole grain foods, wheat bran, nuts and seeds, Vegetables, such as green beans, leek, cabbage, cauliflower, broccoli, radish and carrot are high-fiber foods. Purported benefits of fiber include gastro-intestinal health, cardiovascular health, weight management, satiety, glycemic control and prebiotics. Recommended intakes, 20-35 g/day for healthy adults and children over age 5, are not being met, because intake of good sources of dietary fiber, fruits, vegetables, whole and high-fiber grain products, and legumes are low. The importance of food fibers has led to the development of a large and potential market for fiber-rich products and ingredients and nowadays there is a trend to find new sources of dietary fiber. In recent years, dietary fiber has received increasing attention from researchers and industry due to the likely beneficial effects on the reduction of cardiovascular and diverticulitis diseases, blood cholesterol, diabetes, and colon cancer. The contributors to this volume provide an assessment of not only the impact of the biological and functional potential of different dietary fiber sources but also their health implications.

Dietary Guidelines for Americans
Tristan Favre
In series: Nutrition and Diet Research Progress
In series: Public Health in the 21st Century
2013. 190 pp.
Hardcover: 978-1-62988-388-0. $110.00.

This book is based on the recommendations put forward by the 2010 Dietary Guidelines Advisory Committee. The Committee was composed of scientific experts who reviewed and analyzed the most current information on diet and health and incorporated it into a scientific, evidence-based report. This book presents the most recent scientific evidence review and provides information and advice for choosing a healthy eating pattern, namely, one that focuses on nutrient-dense foods and beverages, and that contributes to achieving and maintaining a healthy weight. Such a healthy eating pattern also embodies food safety principles to avoid foodborne illness. The 2010 Dietary Guidelines are intended to be used in developing educational materials and aiding policymakers in designing and carrying out nutrition-related programs, including Federal nutrition assistance and education programs. The Dietary Guidelines also serve as the basis for nutrition messages and consumer materials, developed by nutrition educators and health professionals for the general public and specific audiences, such as children.

Dietary Supplements: Regulation, Policy Issues, and Emerging Trends
Kenneth H. Ponce
In series: Nutrition and Diet Research Progress
In series: Public Health in the 21st Century

Many Americans take dietary supplements with the intention of meeting their nutritional needs, as well as to improve or maintain their overall health. These consumers want accurate information on the effectiveness and proper use of dietary supplements and access to the dietary supplements of their choice. This book discusses current areas of regulatory and legislative concern, including the identification of products as dietary supplements, their role in individuals’ health and health care, and recent issues regarding supplement safety.

Milk Consumption: Select Analyses of Trends and Variables
Francisco Paul Buren
In series: Nutrition and Diet Research Progress
2013. 142 pp.
Hardcover: 978-1-62948-008-4. $110.00.

Most Americans do not consume enough dairy products. The Dietary Guidelines for Americans, 2010 recommends 2 cup-equivalents per day for children aged 2 to 3 years, 2.5 for those aged 4 to 8 years, and 3 for Americans older than age 8. However, per capita dairy consumption has long held steady at about 1.5 cup-equivalents, despite rising cheese consumption. This status in per capita dairy consumption results directly from the fact that Americans are drinking progressively less fluid milk. Since 1970 alone, per capita fluid milk consumption has fallen from 0.96 cup-equivalents to about 0.61 cup-equivalents per day. The Federal Government encourages dairy consumption, including fluid milk, cheese, and yogurt, among other foods, through the Dietary Guidelines for Americans, 2010. Special emphasis is placed on fat-free and low-fat products. USDA further supports this message through programs like the National School Lunch Program (NSLP). The NSLP stipulates that schools must provide fluid milk and it must be low-fat or skim, rather than whole. Dairy farmers and fluid milk processors are also working to promote dairy products. The popular “Got Milk?” campaign, for one, encourages drinking fluid milk. This book examines
trends in Americans’ fluid milk consumption including average portion sizes and generational differences in the frequency of milk drinking, to investigate possible explanations for the continued decreases.

New Developments in Anorexia Nervosa Research
Carla Gramaglia and Patrizia Zeppegno (Faculty of Medicine - Nova University del Piemonte Orientale “A. Avogadro”, Italy)
Hardcover: 978-1-63117-551-0. $150.00.
Eating disorders and anorexia nervosa are relevant psychiatric problems and often represent a serious challenge to patients, families and clinicians as well. There are several questions surrounding anorexia nervosa about its etiology, maintaining factors, best treatment approaches, which still lack a definite answer. Anorexia is often puzzling and difficult to understand, for patients, who may have a poor insight into the reasons and meaning of their disorder, and for their loved ones who may feel powerless and hopeless when facing a disorder they cannot figure out. Clinicians may approach this disorder in very different ways. There is still a lot to reflect on in regard to anorexia, and the contributions included in this volume aim to help the reader find interesting hints about theoretical, clinical and research issues.

Nutrient Content of the U.S. Food Supply: Recent Data and Historical Context
Yves Delage
Hardcover: 978-1-62984-154-8. $150.00.
This book presents historical data on the availability of nutrients in the U.S. food supply. The data and trends presented in this book are invaluable for monitoring the potential of the food supply to meet nutritional needs; for examining relationships between food supplies, diet and health; and for examining the dietary trends of Americans. Additionally, food supply nutrient estimates reflect Federal enrichment and fortification standards and technological advances in the food industry and contribute to the Federal dietary guidance system. As such, this data is of interest to agricultural policymakers, economists, nutrition researchers, and nutrition and public health educators. Data are provided for food energy and energy-yielding nutrients.

Polysaturated Fatty Acids: Sources, Antioxidant Properties and Health Benefits
Angel Catalá (Facultad de Ciencias Exactas, Universidad Nacional de La Plata, CONICET, CIC., La Plata, Argentina)
Hardcover: 978-1-62948-151-7. $175.00.
During the last four decades, the interest in polysaturated fatty acids (PUFA) has augmented manifold, and the number of published studies is rising each year. The current impetus for this interest has been mainly the observation that PUFA and their metabolites have several physiological roles including: energy provision, membrane structure, cell signalling and regulation of gene expression. In addition, the observation that PUFA are targets of lipid peroxidation opens a new important area of investigation. This new book presents and discusses current research on the biochemical diversity of the lipids and fatty acids contained in various species of microalgae of marine and fresh water environments, the sources and synthesis of PUFA in macroalgae, the nutritional properties of algal PUFA and their potential for future dietary use, as well as the health implications of dietary algal PUFA, notably their effects on inflammatory disorders and brain development and function.

Vitamin A and Vitamin E: Daily Requirements, Dietary Sources and Symptoms of Deficiency
Leon De Smet and Mathis Claes
Hardcover: 978-1-62808-270-8. $95.00.
e-book: 978-1-62808-271-5. $95.00.
In this book, the authors present topical research in the study of the daily requirements, dietary sources and symptoms of deficiency relating to vitamins A and E. Topics discussed include clinical use studies, medicinal and dietary aspects, and the dietary sources and health consequences of vitamins A and E. Other topics include indigenous vegetables as an excellent source of vitamin A; dietary vitamin E intake by older Japanese adults; vitamin A and other biochemical markers in obese patients with biliopancreatic bypass; and the role of vitamin E in dementia.

Vitamin C: Dietary Sources, Technology, Daily Requirements and Symptoms of Deficiency
Raquel Guiné (Food Industry Department, Portugal)
Hardcover: 978-1-62948-159-3. $150.00.
e-book: 978-1-62948-163-0. $150.00.
Vitamin C is one of the most important components to include in a regular diet. It is a powerful vitamin that provides a number of very important health benefits and affects multiple body processes. Vitamin C is not produced by our body, therefore, we need to ingest daily amounts of this nutrient for our body to function properly and to prevent disease. Vitamin C is a cofactor in at least eight enzymatic reactions, including several collagen synthesis reactions that, when dysfunctional, cause the most severe symptoms of scurvy. Vitamin C is also known to help prevent colds and flu, but it is much more than that; it is a potent antioxidant that fights free radicals in the body. As a result, it aids in preventing premature aging, strengthens bones and teeth, strengthens blood capillaries, fights infections, strengthens the immune system, helps to reduce the level of triglycerides and bad cholesterol in the blood, and it also helps our bodies absorb iron, preventing anemia. Furthermore, the antioxidants in vitamin C help ward off inflammation, infections, and viruses. Vitamin C also protects against heart attacks and strokes by helping to build proteins in various types of cellular constructions, which generally promotes improved vascular health and longevity. Studies suggest that vitamin C may even be important in preventing Alzheimer’s disease or autoimmune problems, as well as atherosclerosis. This book aims to gather valuable information about this important vitamin, including sources of this nutrient with such important biological properties, the effects of processing and a number of different approaches to the roles of this powerful vitamin in the human body, as expressed by the diversity of themes addressed in the chapters.

Vitamin D: Daily Requirements, Dietary Sources and Symptoms of Deficiency
Cobus Meer and Hendrik Smits
Hardcover: 978-1-62808-815-1. $150.00.
In this book, the authors present topical research in the study of the daily requirements, dietary sources and symptoms of deficiency of Vitamin D. Topics discussed in this compilation include the history and modern controversies of vitamin D fortification and supplementation; vitamin D in the immune system and role of its deficiency in rheumatic diseases; genetic and epigenetic changes of vitamin D related genes in cancer; advances and pitfalls in the measurement of vitamin D; vitamin D’s implications for muscle function and physical performance; evidence for positive effects of vitamin D supplementation on disease conditions beyond bone health in adults; hypovitaminosis D and osteoporosis in a haemophilia population; vitamin D and aging in the elderly; and hypovitaminosis D and cardiovascular disease.

**PEDIATRICS**

Breastfeeding: Global Practices, Challenges, Maternal and Infant Health Outcomes
*Tanya M. Cassidy (National University of Ireland, Maynooth, University of Windsor, Canada)*

In series: *Pediatrics - Laboratory and Clinical Research*

Hardcover: 978-1-62808-363-7. $150.00.

This book provides a social and cultural framework for understanding strategies for the critical feeding and nutrition of the world’s most vulnerable citizens. Ensuring that infants have access to breastmilk is one of the greatest global healthcare challenges of the twenty-first century, one that cannot be understood in exclusively biomedical terms, but demands an awareness of complex lived experiences. The familiar slogan ‘breast is best’ is skillfully and impressively annotated by this volume with an understanding of the practical and varied experiences of working women and the degree of support (or opposition) that larger communities may provide. How and when infants can be fed is not simply a matter of individual maternal choice, but has large structural implications. The international and interdisciplinary essays in this book amply illustrate the need to transcend a narrow and unfair emphasis on the ‘success’ or ‘failure’ of particular nursing mothers and seek greater societal understanding in order to effect positive societal change. Furthermore, this volume not only has significant public policy implications, but is of great value in the university classroom, illustrating how many of our most basic assumptions about healthcare and maternity need to be rethought in light of a more complex understanding of how human milk ties communities as well as individuals together.

Children, Violence and Bullying: International Perspectives
*Joav Merrick, Isack Kandel and Hatim A. Omar (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)*

In series: *Pediatrics, Child and Adolescent Health*

Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem, Israel)

e-book: 978-1-62948-345-0. $175.00.

Adolescent violence is a very visible violence in our modern society, where you just have to open the newspaper or the television and you find yourself right in the middle of it. In order to understand the scope of the problem, we need to look at the epidemiology of global violence. Each year, more than 1.6 million people worldwide lose their lives to violence and for every person who dies as a result of violence, many more are injured and suffer from a range of physical, sexual, reproductive and mental health problems. Violence places a massive burden on national economies in health care, law enforcement and lost productivity. We are talking about a major public health problem. Programs for intervention have been researched and long-term follow-up indicates that early intervention is working and one that would seem to demand a substantial economic investment, they have been proven cost-effective in the long run. In this book, we have gathered presentations on bullying, aggression, violence, suicide and prevention from an international perspective.

Chronic Disease and Disability in Childhood
*Joav Merrick (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)*

In series: *Pediatrics, Child and Adolescent Health*

Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem, Israel)

Hardcover: 978-1-62808-865-6. $150.00.

Looking back on history and especially medical history, children born with significant congenital anomalies, genetic and metabolic diseases or disabilities perished at an early age, and very few survived into adolescence and even less into adulthood. Congenital heart disease, major errors in metabolism, cancer, cystic fibrosis and many other diseases were fatal. Today with advances in medical knowledge and technology, many of these patients now live a longer life and sometimes even close to the average life expectancy for the country. In this way, childhood diseases have become lifelong disease or in other words, health care providers in adult medicine such as family practitioners, internists, cardiologists and so on now have to deal with individuals suffering from unfamiliar diseases that used to be only seen in pediatric care. Today, still many pediatricians all over the world find themselves caring for forty-year-olds with for example congenital heart disease or cystic fibrosis, because health care transition to adult care has not been possible. Leading healthcare professionals from many corners of the globe and institutions in Israel presented their work and clinical practice on a wide range of topics related to pediatric and adolescent chronic diseases and human development.

Disability and Chronic Disease
*Joav Merrick, Shoshana Aspler and Mohammed Morad (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)*

In series: *Disability Studies*

Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem, Israel)

Hardcover: 978-1-62948-288-0. $175.00.

Once upon a time, pediatrics was involved with infectious disease and acute disorders, but a new pattern of morbidity has emerged. Social difficulties, behavioral problems, developmental difficulties, disabilities and chronic disease have become main parts of the scope of pediatric practice. Among adults, multiple chronic disease is increasingly prevalent, whereas the prevalence of impairment and disability remain stable, but substantial and therefore, present day health professionals must be aware of disability and chronic disease.
Just a few decades ago, children born with significant congenital anomalies or genetic and metabolic diseases perished at an early age and very few survived into their teens and even less into adulthood. Congenital heart disease, major errors in metabolism, cancer, cystic fibrosis and many other major diseases were fatal. Because of that, many physicians in adult primary care did not have the opportunity to see patients with these problems and thus were unable to learn how to care for them. With major advancements in medical knowledge, technology, imaging techniques, surgical skills and pharmaceutical products as well as prosthetic devices, many of these patients now live much longer lives and sometimes even close to the average life expectancy for the country, at least in the developed world. With that, a new medical care challenge has been created and we have to take a life span approach.

Guidelines for the Healthy Integration of the III Child in the Educational System: Experience from Israel Yosefa Isenberg (Special Education Teacher Training Program, Achva Academic College for Education, Gedera, Israel)
In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
2013. 222 pp.
Hardcover: 978-1-62808-350-7, $150.00.
e-book: 978-1-62808-353-8, $150.00.
Learning deficiencies experienced by chronically sick children have been a source for research in the field of child psychology and the field of neuro-psychology, but in the field of education, they have received only secondary attention. In addition to which, on the issue of the sick child’s adaptation to the disease, insufficient importance was paid to the educational system, and only in a very few research projects which measured such adaptation to the disease were the teachers consulted. The source for the idea of writing this book came from a belief that the work of the educationist contributes greatly in advancing the treatment of the sick child. Since treatment and recovery continue for months even years, the educational framework with all its components has a great effect on the process of rehabilitation, and there are claims that successful integration into the school is a decisive factor in rehabilitation and recovery, precisely as is the medical treatment. Moreover, correct support received by the parent and the sick child, when the child returns to the community and to the school, is a measure of his good adaptation in the future.

Non-Invasive Positive Pressure Ventilation for Pediatric Sleep-Disordered Breathing Liu Dabo, Zhou Jing and Huang Zhen-Yun (Department of Otorhinolaryngology, Guangzhou Women and Children's Medical Center, Guangzhou, China)
In series: Sleep - Physiology, Functions, Dreaming and Disorders
Softcover: 978-1-62948-676-5, $52.00.
Sleep-disordered breathing (SDB) consists of a series of disorders varying from primary snoring to OSAHS. Untreated SDB affects cognition, behavior, development, and the child’s quality of life. Tonsillectomy and adenoidectomy are the primary treatment for child SDB. However, recent studies found that many children with SDB had abnormal PSG after surgery, and in this case, NPPV should be used. Of course, non-invasive positive pressure ventilation is not just a supplemental therapy for surgical treatment of SDB. It is also an important non-surgical option with well documented clinical efficacy and safety. However, during long-term home-based therapy, intensive follow-up and close monitoring of caregivers is necessary to ensure patient safety, particularly for children in the developing countries and regions. We have done some research about children's CPAP therapy, especially in the internet-based remote monitoring field, and had published some articles. We had evaluated the practicality, convenience and satisfaction of the remote monitoring system, and we will be glad to share our experience with more people.

Pediciatric Medical Countermeasure Research: Ethical Considerations and Anthrax Vaccine Adsorption Testing
Theodore P. Bristol
In series: Pediatrics - Laboratory and Clinical Research
Hardcover: 978-1-63117-182-6, $195.00.
Safeguarding children is one of our nation’s foremost obligations. We have both a fundamental duty to protect individual children from undue risk during research and an obligation to protect all children during an emergency—to the extent ethically and practically possible—by being prepared both with the fruits of scientifically and ethically sound research and with a fulsome national readiness to respond. This book discusses safeguarding children and the challenges in the use of anthrax vaccine adsorbed in the pediatric population as a component of post-exposure prophylaxis.

Promotion of Holistic Development of Young People in Hong Kong
Daniel T.L. Shek, Tak Yan Lee and Joav Merrick (Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hunghom, Kowloon, Hong Kong, P.R. China)
In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Hardcover: 978-1-62808-019-3, $150.00.
Research findings showed that secondary school students in Hong Kong face many challenges. In particular, morbid emphasis on academic excellence has created much competition and stress in high school students. It was estimated that around one-fifth of secondary school students in Hong Kong had different forms of mental disorders. In a three-year longitudinal study, it was found that the prevalence rates of Internet addiction in Secondary 1, Secondary 2 and Secondary 3 students were 26.4%, 26.6% and 22.5%, respectively. In the same study, suicidal ideation in junior secondary school students was found in more than one-tenth of the students. At the same time, there were more than two-tenths of students showing signs of self-harm and suicidal behavior in junior secondary years. The number of adolescents experiencing economic disadvantage has increased while family solidarity has dropped in recent years. In spite of these adolescent developmental issues, the lack of life education and life skills training in secondary school students has made the situation worse. Although moral and civic education is one of the pillars in the new 6-year secondary school curriculum, there are several problems involved. First, the coverage on social and emotional learning in the curriculum guide is very thin. Second, although there are curricula materials on life skills training in the field, validated curricula are almost non-existent. In fact, in a review of adolescent prevention and positive youth development programs in Asia, Shek and Yu pointed out that there were very few validated evidence-based programs in Hong Kong.
Third, training in social-emotional learning and adolescent prevention programs is grossly inadequate in Hong Kong. Finally, while nobody would dispute the importance of life skills and psychosocial competence, such topics are seldom taught in depth in the school contexts.

School, Adolescence and Health Issues
Joav Merrick, Ariel Tenenbaum and Hatim A. Omar
(Medical Director, Health Services, Division for
Intellectual and Developmental Disabilities, Ministry
of Social Affairs and Social Services, Jerusalem,
Israel)
In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (National Institute of Child
Health and Human Development, Ministry of Social
Affairs, Jerusalem)
Hardcover: 978-1-62948-702-1. $150.00.
Adolescence is the critical period or rather process in human
development, where the individual leaves the dependency of childhood and enters a period in which dramatic changes occur, eventually resulting in what society identifies as adulthood. It is a complex developmental time involving sociological, psychological and physiological issues that starts with puberty and ends sometime in the third decade of life with central nervous system maturation (parents would want this period to be much quicker and shorter). The goal of adolescence is to develop an autonomous adult, who is capable of functioning at intellectual, sexual, and vocational levels acceptable to society. Prevention and management of health problems in children and adolescents can prevent considerable morbidity in adults. Working with adolescents is difficult, frustrating and very rewarding at the same time. In this book, we have gathered international research to show you a picture of health issues in adolescence and during the school period of human development.

PHARMACOLOGY

ACE Inhibitors: Medical Uses, Mechanisms of Action, Potential Adverse Effects and Related Topics.
Volume 1
Macaulay Amechi Onuigbo (College of Medicine,
Mayo Clinic, Rochester, MN, USA)
In series: Pharmacology - Research, Safety Testing and Regulation
Hardcover: 978-1-62948-383-2. $175.00.
This book, published in two volumes, Volume 1 and Volume 2, respectively, represents the most comprehensive and up-to-date collection of current literature on angiotensin inhibition and related topics in medicine, nephrology and cardiovascular medicine ever compiled. Top experts in the various fields of nephrology, hypertension, cardiovascular medicine, pharmacotherapeutics and related fields from all five continents have contributed essays, original papers, reviews and editorial opinions to this volume. This book has turned out to be the most authoritative reference source on ACEIs, with contributions made by leading experts in their various fields of medicine, from the USA, Europe, including the United Kingdom, South America, Australia-New Zealand, Asia including Japan, and Africa. Critically vital clinical topics are covered in this book by top world-renowned experts in different subspecialties, including classic topics such as the efficacy of ACE inhibition as an antihypertensive among the various ethnicities and races, as written from American, African, Caribbean and European perspectives. This volume should indeed serve as a major literature reference text for physicians in general, internists, researchers, cardiologists and hypertension specialists, and especially the practitioners of the art of nephrology in all the countries around the world. Medical students and various physician training programs should reach for a copy of this volume as a research and teaching tool for many years to come. There is also a place here for research scientists in the pharmaceutical industry to review current and newly emerging indications for angiotensin inhibition and the future of renoprotection.

ACE Inhibitors: Medical Uses, Mechanisms of Action, Potential Adverse Effects and Related Topics.
Volume 2
Macaulay Amechi Onuigbo (College of Medicine,
Mayo Clinic, Rochester, MN, USA)
In series: Pharmacology - Research, Safety Testing and Regulation
Hardcover: 978-1-62948-422-8. $175.00.
This book, published in two volumes, Volume 1 and Volume 2, respectively, represents the most comprehensive and up-to-date collection of current literature on angiotensin inhibition and related topics in medicine, nephrology and cardiovascular medicine ever compiled. Top experts in the various fields of nephrology, hypertension, cardiovascular medicine, pharmacotherapeutics and related fields from all five continents have contributed essays, original papers, reviews and editorial opinions in this volume. This book has turned out to be the most authoritative reference source on ACEIs, with contributions made by leading experts in their various fields of medicine, from the USA, Europe, including the United Kingdom, South America, Australia-New Zealand, Asia including Japan, and Africa. Critically vital clinical topics are covered in this book by top world-renowned experts in different subspecialties, including classic topics such as the efficacy of ACE inhibition as an antihypertensive among the various ethnicities and races, as written from American, African, Caribbean and European perspectives. This volume should indeed serve as a major literature reference text for physicians in general, internists, researchers, cardiologists and hypertension specialists, and especially the practitioners of the art of nephrology in all the countries around the world. Medical students and various physician training programs should reach for a copy of this volume as a research and teaching tool for many years to come. There is also a place here for research scientists in the pharmaceutical industry to review current and newly emerging indications for angiotensin inhibition and the future of renoprotection.

Amoxicillin: Medical Uses, Mechanism of Action and Potential Adverse Effects
Wyatt A. Leary and Logan M. Kruse
In series: Pharmacology - Research, Safety Testing and Regulation
Softcover: 978-1-62948-489-1. $72.00.
Amoxicillin represents the lead substance of the aminopenicillin group of beta-lactames, which is characterized by a broader antibacterial spectrum and acid-stability compared to penicillin G. In this book, the authors present current research in the study of the medical uses, mechanisms of action and potential adverse effects of amoxicillin. Topics discussed include microfibers of biodegradable polymers loaded with amoxicillin; the occurrence, fate and effects of amoxicillin in aquatic systems; accurate instrumental analytical methods for the
quality control of amoxicillin in the pharmaceutical industry; and the pharmacological properties and clinical applications of amoxicillin.

**Antibiotic Therapy: New Developments**

*Allen Turner and James Hall*

In series: *Pharmacology - Research, Safety Testing and Regulation*

In series: *New Developments in Medical Research*


Softcover: 978-1-62808-170-1. $72.00.


In this book, the authors present new developments in the study of antibiotic therapy. Topics discussed include angesia and sedation in severe sepsis and septic shock; combining antibiotics and photosensitizers in antibacterial treatment; biofilm formation and bacterial pathogenesis; and heliobacter pylori antibiotic resistance and the use of phage therapy.

**Antimalarial Drug Research and Development**

*Antoine C. Banet and Philippe E. Brasier*

In series: *Pharmacology - Research, Safety Testing and Regulation*


Hardcover: 978-1-62948-208-8. $150.00.


Malaria-like febrile illnesses have been described since Hippocrates as fevers that were periodic and associated with marshes and swamps. The word “malaria” comes from the Italian “mal’aria” for “bad airs”. Malaria is transmitted to humans via the bite of the infected female mosquito of anophelus species. Malaria can exist, in a mild form that is most commonly associated with flu-like symptoms; fever, vomiting, and general malaise. Most disease cases are found in the poorest countries; tropical Africa, Latin America, Southern Asia and Oceania. More concern is being given now to malaria even in countries where there is a low risk of infection due to the phenomena of global warming which is significantly increasing. In this book, the authors present current research in the study of antimalarial drug research and developments. Topics discussed in this compilation inclde the antimalarial atovaquone prodrugs based on enzyme models with molecular orbital calculations approach; new quinoline-based multiple ligands in antimalarial drug development; new molecular scaffolds as potential therapeutic agents to combat antimalarial resistance; and PfCRT mediates sensitivity of chloroquine-resistant P. Falciparum to diamidines.

**Carbamazepine: Medical Uses, Pharmacokinetics and Adverse Effects**

*Luca Gallelli (Department of Health Science, School of Medicine, University of Catanzaro and Clinical Pharmacology Unit, Mater Domini Hospital, Catanzaro, Italy)*

In series: *Pharmacology - Research, Safety Testing and Regulation*


Softcover: 978-1-62948-048-0. $52.00.


Carbamazepine (CBZ), one of the most used antiepileptic drugs (AEDs), was introduced on the market in the early 1960’s and ever since, it has become the most frequently prescribed drug for the treatment of several forms of epilepsy. It is also used to treat other pathologies, such as neuropathic pain and psychiatric disorders. This book provides a detailed description of this drug, evaluating all aspects of its pharmacology. CBZ pharmacokinetics is discussed, with a particular emphasis on its metabolism, side effects and drug interactions. Then the authors focus on its pharmacodynamic effects, and the most recent evidence indicating that CBZ-sodium channel interaction is not specific and ligand-gated ion channels are also affected by the drug. The role of oxcarbazepine, its main metabolite MHD, and other new drugs are explained in detail. Additionally, non-antiepileptic CBZ clinical effects and drug-drug interactions in the elderly under polytherapy are described. In conclusion, the occurrence of carbamazepine in the hydrosphere, its fate and the different technologies available for its remediation are also discussed.

**Chondroitin Sulfate: Structure, Uses and Health Implications**

*Vitor H. Pomin (Program of Glycobiology, Institute of Medical Biochemistry, and University Hospital Clementino Fraga Filho, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil)*

In series: *Pharmacology - Research, Safety Testing and Regulation*


Hardcover: 978-1-62808-490-0. $150.00.

e-book: 978-1-62808-495-5. $150.00.

Chondroitin sulfate (CS) is the most abundant glycosaminoglycan (GAG) of the human body. Besides its natural occurrence as side chains in physiologically active proteoglycans localized at the extracellular matrices and/or at cell surfaces, this GAG can also be found in marine organisms with differential structures and functions, such as the anticoagulant fucosylated chondroitin sulfate isolated from sea-cucumbers. In addition, CSs isolated from vertebrate sources, such as shark and whale cartilages, are used as a biomedical ingredient for alternative medicinal therapies of osteoarthritis, osteoarthrosis, and possibly osteoporosis. CS formulations for oral administration are also employed as a nutraceutical to prevent lesions or degenerations of joint cartilages, especially in those people susceptible to physical conditions of their knees, like athletes, soccer players and dancers. In terms of structure, this GAG can show different sulfation patterns that vary accordingly with the types of cell, tissue, organism, and pathological conditions. However, the saccharide backbone of CS is always made up of alternating galactosamine and an uronic acid unit, regardless the source or condition. This book presents a compilation of some of the recent achievements obtained by scientific research on CS. Overall the most relevant areas and sub-areas regarding the science of this GAG type are somewhat discussed herein. The major areas include biology, biotechnology, physiology, chemistry and pharmacology. Specific sub-areas are biosynthesis, chemical and enzymatic modifications, extraction methods, occurrence and abundance, in vitro enzymatic degradations, structural diversity versus functions, disease-related mechanisms, physiological roles, medical applications, and novel methods of structural characterization. The contributing authors of this publication are internationally recognized leaders in the field. All these features contribute significantly to the quality of this publication.

**Clopidogrel: Pharmacology, Clinical Uses and Adverse Effects**

*James P. Aliesci and Alexander Victorino*

In series: *Pharmacology - Research, Safety Testing and Regulation*


Clopidogrel is an oral thienopyridine derivative, used as an anti-platelet aggregation agent to inhibit blood clot formation in coronary artery disease, peripheral vascular disease and cerebrovascular disease. In this book, the authors discuss the pharmacology, clinical uses and adverse effects of clopidogrel. Topics include clopidogrel use in...
neurointerventional surgery; management of clopidogrel hypersensitivity; clopidogrel and gastrointestinal harm; perioperative management of clopidogrel in urological surgery; and platelet function testing to guide therapy in poor responders to clopidogrel.

Dexamethasone: Therapeutic Uses, Mechanism of Action and Potential Side Effects
Alexandre Sauvage and Maxime Levy
In series: Pharmacology - Research, Safety Testing and Regulation
2013. 219 pp.
Hardcover: 978-1-62808-405-4. $150.00.
Dexamethasone is a potent, long-term acting synthetic glucocorticoid class of steroid drugs that have anti-inflammatory and immunosuppressant properties. The authors in this book discuss the therapeutic uses, mechanisms of action and potential side effects of dexamethasone. Topics include dexamethasone for the treatment of meconium aspiration syndrome (MAS); dexamethasone effects in hyperinfection syndrome due to strongyloidiasis; dexamethasone use in retinal disease and anti-tumor activities; perioperative uses of dexamethasone; comparison between cortisol and dexamethasone negative feed-back action in humans; the effect of dexamethasone on parathyroid hormone-related protein expression by oral cancer cells; and the effects of dexamethasone on the proliferation and differentiation of osteoblasts.

Diazepam: Medical Uses, Pharmacology and Health Effects
Harold M. Walker and Paul A. Torres
In series: Pharmacology - Research, Safety Testing and Regulation
Softcover: 978-1-62948-627-7. $69.00.
Since their introduction to the market in the 1960s, benzodiazepines, and among them diazepam, have become one of the most frequently prescribed psychotropic drugs in industrial countries. These compounds are known for their sedative, hypnotic, anxiolytic, muscle-relaxant and anticonvulsant properties and their large therapeutic index. In this book, the authors present current research in the study of the medical uses, pharmacology and health effects of diazepam. Topics discussed include the consequences of early chronic exposure to diazepam on brain plasticity, cerebral functionality and behavior; diazepam use in anxiolytic animal therapy; the diazepam-like effects of medicinal plants; using zebrafish modeling as the foundation of differentiation of osteoblasts.

Diuretics: Pharmacology, Therapeutic Uses and Adverse Side Effects
Lars Wouters
In series: Pharmacology - Research, Safety Testing and Regulation
In series: Nephrology Research and Clinical Developments
Softcover: 978-1-62808-254-8. $69.00.
Diuretics are drugs that increase urine water and salt excretion, and for that reason they are widely used for treating arterial hypertension, and edematous states such as decompensated cardiac failure, cirrhosis, and nephropathy. In this book, the authors present current research in the study of the pharmacology, therapeutic uses and adverse side effects of diuretics. Topics include the aquaretic effect of vasopressin V2 receptor antagonists; basic principles of diuretic therapy; predictors to blood pressure response and the adverse side effects of thiazide diuretics; diuretic therapy in heart failure; diuretics as antiepileptics; and potent diuretics and potassium sparing agents.

Drug Compounding: Background, Issues and FDA Oversight
Martti Bram
In series: Pharmacology - Research, Safety Testing and Regulation
Hardcover: 978-1-63117-360-8. $110.00.
Compounding has been traditionally defined as a process where a pharmacist or a physician combines, mixes, or alters ingredients to create a medication tailored to the needs of an individual patient. Traditionally compounded drugs (CDs) are made in response to an individual prescription from a licensed health provider in the context of a pharmacist’s and health care professional’s relationship with a specific patient. This book provides background information on CDs and non-traditional compounding pharmacies relevant to policy discussions. This book will also examine the FDA’s regulation of drug compounding and will discuss relevant legal authorities. Specifically, the status of FDA’s authority to oversee drug compounding, and the gaps, if any, between state and federal authority will be discussed, as well as how FDA has used its data and authority to oversee drug compounding, and the actions taken or planned by states or national pharmacy organizations to improve oversight of drug compounding.

Fluconazole: Pharmacology, Clinical Uses and Health Effects
Santiago Herrera and Joaquin Acosta
In series: Pharmacology - Research, Safety Testing and Regulation
2013. 102 pp.
Softcover: 978-1-62948-101-2. $72.00.
Fluconazole is a triazole antifungal drug used in the treatment and prevention of superficial and systemic fungal infections. In this book, the authors present current research in the study of the pharmacology, clinical uses and health effects of fluconazole. Topics discussed include the utilization of fluconazole in adult intensive care units; the use of fluconazole in veterinary species and a description of variances from the human experience as well as findings in veterinary species which may have applicability in human medicine; common clinical uses and in vitro activity features on fluconazole; and the discovery and development of medically-important antifungal agents, particularly the azole derivatives and the development of fluconazole and its clinical applications.

Gentamicin: Biosynthesis, Medicinal Applications and Potential Side Effects
Emilie Kruger
In series: Pharmacology - Research, Safety Testing and Regulation
Softcover: 978-1-62808-841-0. $69.00.
e-book: 978-1-62808-842-7. $69.00.
Gentamicin is an aminoglycoside antibiotic naturally synthesized by Micromonospora, a Gram-positive genus of bacteria widely found in water and soil. This antibiotic is useful against a wide variety of bacteria, and works by binding the 30S subunit of the bacterial ribosome, which interrupts bacterial protein synthesis. In this book, the
authors discuss the biosynthesis, medicinal applications and potential side effects of Gentamicin. Topics include Gentamicin used in combination therapy and applied to medicinal materials for clinical applications; use of natural products to enhance the antibiotic activity of Gentamicin and other aminoglycosides; regiospecific Gentamicin functionalization; Gentamicin and particle engineering; and the indications and adverse effects of Gentamicin.

**Imatinib: Chemical Structure, Pharmacology and Adverse Effects**
*Majita Akhtari and Ihah Elhemaidi (University of Nebraska Medical Center, Division of Oncology/Hematology, Nebraska Medical Center, Omaha, NE, USA)*

In series: Pharmacology - Research, Safety Testing and Regulation
In series: Cancer Etiology, Diagnosis and Treatments

Hardcover: 978-1-62808-304-0. $150.00.
e-book: 978-1-62808-304-0. $150.00.

Imatinib has brought a revolution in the management of Chronic myelogenous leukemia (CML), a disease which had very limited therapeutic options including allogeneic hematopoietic stem cell transplantation and interferon-alpha 10 years ago. The clinical success of imatinib in CML and gastrointestinal tumors (GIST) has brought up a new paradigm in cancer therapy that has very broad potentials. Imatinib is active against a number of related tyrosine kinases, namely ABL, BCR-ABL, KIT, PFGFR, and TEL. Now, as more than a decade has passed since the approval of Imatinib, and after the change of CML from a rapidly fatal disease to a more chronic and manageable disease, we wanted to have a look back at what we know about the drug and its effect on various body systems. Its efficacy, side effects and how to manage its use in non-hematological malignancies is discussed in detail. Gathering all this information in one book will be of immense benefit for healthcare workers including physicians, pharmacists and nurses and this in turn will help them improve the care of their patients. It will also benefit pharmacists who are a source of clinical and pharmacological knowledge. For people undertaking research in the field of hemato-oncology or pharmacology, this will be a useful starting point for reviewing the literature. Imatinib is still being studied in patients in the clinic and laboratory models, and researchers are assessing the use of imatinib in other cancers. The editors have tried to allow information in book chapters to show different aspects and various view points on related issues.

**Internet Pharmacies: Rogue Sites and Safety Measures**
*Mohamed Gevarat
In series: Pharmacology - Research, Safety Testing and Regulation
In series: Public Health in the 21st Century

Softcover: 978-1-62808-934-9. $52.00.
e-book: 978-1-62808-935-6. $52.00.

The Internet offers consumers a convenient method for purchasing drugs that is sometimes cheaper than buying from traditional brick-and-mortar pharmacies. According to a recent FDA survey, nearly 1 in 4 adult U.S. Internet consumers have purchased prescription drugs online. However, many Internet pharmacies are fraudulent enterprises that offer prescription drugs without a prescription and are not appropriately licensed. These rogue Internet pharmacies may sell drugs that are expired, improperly labeled, or are counterfeit of other drugs. A number of federal and state agencies share responsibility for administering and enforcing laws related to Internet pharmacies, including state boards of pharmacy, FDA, DOJ, CBP, and ICE. The Food and Drug Administration Safety and Innovation Act directed the Government Accountability Office (GAO) to report on problems with Internet pharmacies. This book identifies (1) how rogue sites violate federal and state laws, (2) challenges federal agencies face in investigating and prosecuting operators, (3) efforts to combat rogue Internet pharmacies, and (4) efforts to educate consumers about the risks of purchasing prescription drugs online.

**Introduction to Drug Designing and Development**
*Rajnish Kumar, Anju Sharma and Rajesh Kumar Tiwari (Faculty, Amity Institute of Biotechnology, AMITY University, Lucknow Campus, Uttar Pradesh, India)*

In series: Pharmacology - Research, Safety Testing and Regulation

2013. 290 pp.
Hardcover: 978-1-62948-556-0. $150.00.

This book is useful to readers who are just beginning in the field of drug design and development. It starts with an introduction and some basic information about drugs. Pharmacokinetic and pharmacodynamic aspects are covered in the initial chapters. Systemic descriptions of pharmacokinetic parameters such as absorption, distribution, metabolism, and excretion are explained in simple and easy language. This book demonstrates detailed concepts of lead molecules and their sources. In addition, drug target classification, identification and validation strategies, as well as the design and development of combinatorial libraries for new lead generation are also covered. This book contains various methodologies, such as structure-based drug designing, quantitative structure activity relationship, pharmacophore modeling, and docking studies for screening and designing the drug candidates. This book will help in the identification and design of drugs that could be potentially useful in deriving the candidate drugs, which may have efficacy in animal models or cell cultures. Thus, the most effective compounds could be employed based on the above results, and will then be moved from preclinical studies to clinical trials. The last couple of chapters describe dosage drug regulatory affairs and recent advancements in healthcare. The aim of this book is to provide comprehensive ideas about overall drug design and development.

**Lidocaine: Current Concepts and Emerging Roles in Clinical Practice**
*Karen Stuart-Smith (Christchurch Hospital, Christchurch, New Zealand)*

In series: Pharmacology - Research, Safety Testing and Regulation

2014. 94 pp.
Softcover: 978-1-62948-750-2. $72.00.

Lidocaine is a short-acting local anaesthetic agent first developed in 1943. It was one of a number of synthetic local anaesthetic agents developed in the first half of the 20th Century to replace cocaine, whose toxic and addictive side-effects caused the surgical use of this drug to decline dramatically. By contrast, lidocaine has passed since the approval of Imatinib, and after the change of CML ABL, KIT, PFGFR, and TEL. Now, as more than a decade

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**Notes:**
- The text above is a natural representation of the document contents.
- The book titles, publishers, and authors are cited for reference.
- The text includes references to various chapters and topics in the field of pharmacology, toxicology, and drug design.
- The document is a collection of readings from various sources, including academic publications and industry reports.
lidocaine in acute perioperative pain is explored, including its actions at multiple neuronal sites and secondary effects on pain perception via its potent anti-inflammatory effect. These properties may explain the efficacy of lidocaine as an intravenous anesthetic. It is frequently forgotten that lidocaine, like any other drug, has a complex pharmacodynamic profile, and may be displaced from its protein binding sites by other agents, thus increasing its potency. The use of clonidine and diphenhydramine, which actively compete with lidocaine for protein binding, is discussed as a mechanism to improve the analgesic effect of lidocaine in severe oral and dental pain, which is frequently refractory to other agents. Lastly, the potentially toxic effects of lidocaine in some tissues should be remembered. The mechanism of the profoundly damaging effect of lidocaine on cartilage growth and repair is described. This evidence reinforces the clinical view that lidocaine should not be used as an analgesic for arthroscopic procedures, and acts as a reminder that even very commonly used and generally safe drugs should always be studied in detail when new uses are found.

Mannitol: Chemistry, Uses and Potential Side Effects
Paolo Fubini
In series: Pharmacology - Research, Safety Testing and Regulation
In series: Biotechnology in Agriculture, Industry and Medicine
Softcover: 978-1-62808-762-8. $69.00.
e-book: 978-1-62808-763-5. $69.00.
In this book, the authors present topical research in the study of the chemistry, uses and potential side effects of mannitol. Topics discussed include the utilization and production of D-mannitol by bacteria; concentration of mannitol and other soluble carbohydrates in the crustose lichen Rhizocarpon geographicum; disease-related changes and mannitos use for clinical disorders; use of mannitol in thermal energy storage applications; and chiral phosphorous ligands derived from D-mannitol.

Paclitaxel: Biosynthesis, Mechanisms of Action and Clinical Uses
Diego Morales
In series: Pharmacology - Research, Safety Testing and Regulation
In series: Cancer Etiology, Diagnosis and Treatments
2013. 194 pp.
Hardcover: 978-1-62808-549-5. $120.00.
e-book: 978-1-62808-550-1. $120.00.
Paclitaxel is an antimitotic drug that promotes microtubule polymerization and produces sensitization to radiation. Paclitaxel is a first-line drug for the treatment of non-small cell lung cancer and is used to treat metastatic ovarian cancer, breast cancer, head and neck cancer, and advanced cases of Kaposi's sarcoma. In this book, the authors discuss the biosynthesis, mechanisms of action and clinical uses of paclitaxel. Topics include paclitaxel resistance and overcoming strategies with structurally or functionally related drugs; molecular mechanisms that mediate resistance to paclitaxel in cancer; the biosynthesis of paclitaxel and its pharmaceutical application for cancer treatment; current status and clinical trials of paclitaxel-containing therapy for uterine cancer; mesenchymal stromal cells used for carrying and delivering paclitaxel; and the role of paclitaxel in ovarian cancer.

Propofol: Pharmacokinetics, Medical Uses and Potential Health Effects
Albertina Florence
In series: Pharmacology - Research, Safety Testing and Regulation
Softcover: 978-1-63117-436-0. $72.00.
Propofol is an injectable agent that is commonly used for general anesthesia. In addition to its central nervous system depressant action, propofol may exhibit temporary analgesia although this has been debated. Several studies have reported analgesic effects of subhypnotic doses of propofol on pain perception in humans. Moreover, some recent clinical studies have reported that surgery patients receiving propofol anesthesia experienced reduced postoperative pain. This book discusses the pharmacokinetics, medical uses and potential health effects of propofol in further detail.

Recent Advances in Drug Delivery Research
Valerio Voliani (Scuola Normale Superiore and Istituto Nanoscienze-CNR Center for Nanotechnology Innovation @ NEST, Istituto Italiano di Tecnologia, Pisa, Italy)
In series: Pharmacology - Research, Safety Testing and Regulation
Hardcover: 978-1-62948-228-6. $150.00.
It has been over 100 years since Dr. Paul Ehrlich referred to an ideal therapeutic agent able to target and treat only a highly specific site in an organism as the so-called "magic bullet." The birth of new technologies, such as nanostructures, combined with the improved knowledge on the physiology and the biochemistry at the basis of human behavior have opened completely new trails in medicine, making the research over drug delivery one of the most vital fields of science. This book presents a timely and informative summary of the current progress in a variety of subject areas, including medicine, chemistry, and biology. This book is written by experts in the field and serves as an indispensable reference to advanced researchers. The last advances in drug delivery, including nanoparticles, conjugated polyphenol, enhanced permeability and retention effect and also chimeric nanosystems, are addressed and provided by extensive and recent literature.

Ribavirin: Biochemistry, Clinical Applications and Potential Side Effects
Joris Buskirk
In series: Pharmacology - Research, Safety Testing and Regulation
2013. 120 pp.
Softcover: 978-1-62808-813-7. $69.00.
Ribavirin has been studied for over 20 years as a potential therapy against a number of RNA and DNA viruses. It is well known that Ribavirin in combination with Interferon is a key antiviral component in the treatment of Hepatitis C virus infection. In this book, the authors discuss the biochemistry, clinical applications and potential side effects of Ribavirin. Topics include optimizing Ribavirin use for the treatment of Hepatitis C; Ribavirin and its great potential in infectious diseases; the antiviral actions of Ribavirin; a novel prediction method for the responsiveness of Hepatitis C patients to drug treatment; and Ribavirin's intolerable cough during HCV combination therapy which can be overcome by replacement with Niazoanide.
Tacrolimus: Effectiveness, Safety and Drug Interactions
Dimitrios Raptis and Manousos-Georgios Pramateftakis (Surgical Department, University of Erlangen-Nuremberg, Erlangen, Germany)

In series: Pharmacology - Research, Safety Testing and Regulation

In series: Immunology and Immune System Disorders

Since its discovery in 1984, Tacrolimus has proven itself to be an invaluable tool in the armamentarium of immunosuppression after organ transplantations. Tacrolimus was first introduced as a rescue therapy in liver transplant patients and quickly showed promise in its ability to improve patient and graft survival, while nowadays there is data demonstrating its effectiveness as a monotherapy immunosuppressive regimen after liver transplantation. Moreover, Tacrolimus shows promising results in the fields of regenerative response after transplantation, dermatology, multiple autoimmune diseases, healing of colonic anastomoses, platelet activity and thrombotic disorders and Hereditary Hemorrhagic Telangiectasia (HHT). This hardcover edition comprehensively discusses different issues and aspects concerning the multimodal effects and the safety of this widely used, relatively new, immunosuppressant and could be considered an optimal tool for every clinician, since the action of Tacrolimus is no longer limited to post-transplant patients but also extends to its usage in multiple medical fields.

Vancomycin: Biosynthesis, Clinical Uses and Adverse Effects
Abu Gafar Hossion (The University of Oklahoma College of Pharmacy, Oklahoma City, OK, USA)

In series: Pharmacology - Research, Safety Testing and Regulation

2013. 175 pp.
Hardcover: 978-1-62948-559-1. $85.00.

There have been news reports with the tales of many community acquired bacterial infections that lead to serious hospitalization. The last resort drug for these infections is vancomycin; an FDA approved glycopeptide antibiotic for the treatment of several bacterial infections, including infections caused by susceptible staphylococcus, streptococcus, enterococcus, and diphtheroid organisms. Around the world in 1997, initial reports of reduced vancomycin susceptibility in clinical isolates of staphylococcus aureus generated significant concern in the medical community. There has been uncertainty regarding optimal laboratory tests and the clinical relevance of reduced vancomycin susceptibility in S. aureus; changes in the Clinical and Laboratory Standards Institute (CLSI) breakpoints for vancomycin against S. aureus; and increasing concern regarding the efficacy of vancomycin for the treatment of infection due to gram-positive bacteria, such as S. aureus. Vancomycin can be administered either intravenously or orally, but in order to treat systemic infections, vancomycin must be administered intravenously. Identifying the changes in genome content or expression, which are associated with the acquisition of the different types of vancomycin resistance, is an important step in the process of understanding the molecular basis of resistance with the potential to provide leads both for new drug targets and diagnostic biomarkers. However, considering that vancomycin has a slow bactericidal activity, clinicians have to adequately prescribe vancomycin to avoid the acquisition of resistance under therapy and to facilitate the cure.

Vincristine: Clinical Uses, Pharmacokinetics and Impacts on Health
Juan M. Coello and Yolanda D. Sabres

In series: Pharmacology - Research, Safety Testing and Regulation

Softcover: 978-1-62808-886-1. $72.00.

Vincristine is a naturally occurring alkaloid isolated from the leaves of the plant Catharanthus roseus. It has a wide range of clinical applications. Extracts of the plant have found application in wound healing, in the treatment of diabetic ulcers and diabetes mellitus, and in cancer chemotherapy. In this book, the authors discuss the clinical uses, pharmacokinetics and impacts on health of Vincristine. Topics discussed include Vincristine as an inducer of drug resistance marker expression in neoplastic cells; clinical utility of Vincristine in the treatment of human carcinomas; inadvertent intrathecal administration of Vincristine; and Vincristine's mechanism of antitumor activity.

PHYSIOLOGY

Advances in Physical Therapy Research
Frederick Belluci and Nico Baudo

In series: Pain and its Origins, Diagnosis and Treatments

Softcover: 978-1-62948-529-4. $72.00.
e-book: 978-1-62948-530-0. $72.00.

In this book, the authors present current research in the study of physical therapy applications. Topics discussed include PPARs and their role in the molecular network and disease; assessment and interventions relating to abnormal gait in patients with chronic pain; a multi-therapeutic approach in the treatment and management of a patient with a history of benign multiple sclerosis and one year post bilateral total hip arthroplasty; and an anal stretching device for use in patients with chronic prostatitis and chronic pelvic pain syndrome.

PREGNANCY

Controversies in Preeclampsia
Eyal Sheiner and Yariv Yogev (Soroka University Medical Center, Ben-Gurion University of the Negev, Beer-Sheva, Israel)

In series: Obstetrics and Gynecology Advances

Hardcover: 978-1-62948-825-7. $175.00.

Hypertensive disorders complicate 5-10% of pregnancies and are a leading cause of maternal and perinatal morbidity and mortality. This book serves to highlight the increasing importance of hypertensive disorders in pregnancy across the health care continuum. It provides a comprehensive, evidenced-based and updated review of controversy aspects relating to preeclampsia and other hypertensive complications in pregnancy. It starts with a broad overview of preeclampsia including an extensive introduction explaining definitions and epidemiology of the disease, and the differential diagnosis of preeclampsia. Risk factors such as obesity and diabetes as well as multifetal gestations are presented in separate chapters. Basic concepts dealing with the pathogenesis of the disease are thoroughly covered including the role of adipokines in preeclampsia. Specific attention is given to prediction and prevention of preeclampsia. The book concludes with short and
long term maternal outcome. Written by international experts, this book is a valuable resource for a broad spectrum of clinicians and healthcare professionals dealing with maternal fetal medicine. Medical and nursing students as well as residents in obstetrics and gynecology, and family practice will also benefit from it at any stage of their training.

**Fetal Development: Stages of Growth, Maternal Influences and Potential Complications**

**Josiah Wilburn**

In series: *Obstetrics and Gynecology Advances*  
Hardcover: 978-1-63117-069-0. $150.00.  

In this book the authors present current research in the study of fetal development and its stages of growth, maternal influences and potential complications. Topics discussed in this compilation include the equine fetal development, fetomaternal interaction and potential complications during pregnancy; comparative anatomy, development and functional significance of the mammalian yolk sac; influence of exercise training on e-NOS expression, nitric oxide production and mitochondrial function in the human placenta; maternal melanine and fetal development; and immunolocalization of syntaxin2 in sinusoidal endothelial cells during mouse liver development.

**Miscarriages: Diagnosis, Management and Coping Strategies**

**Virginia M. Pannel**

In series: *Obstetrics and Gynecology Advances*  
Hardcover: 978-1-63117-147-5. $95.00.  

A miscarriage can be defined as a pregnancy that ends spontaneously before the fetus has reached a viable gestational age. There are two types of miscarriages: sporadic (SM) and recurrent (RM). RM is defined by most clinicians as three or more consecutive miscarriages. In this book, the authors discuss topics that include prevention of recurrent miscarriages; autoimmunity and recurrent miscarriages; the efficacy and safety of Chinese medicines for threatened miscarriage; Chinese herbal medicines for recurrent miscarriage; and the genetics of miscarriages.

**The History of Cesarean Section**

**Samuel Lurie (Department of Obstetrics & Gynecology, Edith Wolfson Medical Center, Holon, Tel Aviv University, Israel)**

In series: *Surgery - Procedures, Complications, and Results*  
Hardcover: 978-1-62808-991-2. $85.00.  

The fascinating issue of operative opening of the uterus and delivering the fetus known today as cesarean section has intrigued humankind for ages. This book is the most comprehensive text on the fascinating history of cesarean section. It includes the origin of the eponym and describes many myths from ancient Greek, Roman, Persian and medieval cultures. The first documents regarding cesarean delivery arise in ancient legal texts; a cuneiform tablet dealing with the adoption of a small boy during the 23rd year of the renowned King Hammurabi of Babylon (1795–1750 BC), “Lex Regia” proclaimed by Numa Pompilius, an ancient Roman King (716-673 BC), and Mishna, the collection of ancient Jewish laws (2nd century BC – 6th century AD). The book includes a description of the oldest known drawing of a cesarean section that appears in the 1307 AD version of the book “Al-Thâr-ul- Bâkiya” by Albiruni. The book focuses on the debate about the definite perception of cesarean delivery that had at several times reached culminate conflicts, as in the medieval period, during the 18th century, during the 19th century and at the 20th-21st centuries. Although, cesarean section on maternal request is a complex issue, it seems that those in favor of allowing women to have a maternal-choice cesarean section prevail over those against it in this round. Finally, the book focuses on physicians who had changed the history of cesarean section: François Rousset (1530-1603) who had a vision on performing cesarean section on living women, Max Sanger (1853-1903) who introduced uterine sutures, John Martin Munro Kerr (1868-1960) who introduced the transverse lower uterine segment incision, and Edwin Bradford Craigin (1859-1918) with his dictum: “once a Cesarean always a Cesarean”.

**PROTEINS**

**Alanine: Dietary Sources, Physiological Functions and Health Benefits**

**Franco Olivares and Martin Gomez**

In series: *Protein Biochemistry, Synthesis, Structure and Cellular Functions*  
2013. 197 pp.  
Hardcover: 978-1-62808-504-4. $95.00.  
e-book: 978-1-62808-505-1. $95.00.

The amino acid alanine is a nonessential amino acid. It can be synthesized in the human body and used to synthesize many different proteins. Alanine is found in a wide variety of foods, but is is found in meats at higher concentrations. In this book, the authors present current research in the study of the dietary sources, physiological functions and health benefits of alanine. Topics discussed include a-alanine and calcium carbonates interaction for bio-mineralization; alanine and its role in bacterial spore biology; and the functions of alanine, beta-alanine and carnosine.

**Alpha-Synuclein: Functional Mechanisms, Structure and Role in Parkinson's Disease**

**Mark Polizzii and Howard C. Kanowitz**

In series: *Protein Biochemistry, Synthesis, Structure and Cellular Functions*  
2013. 87 pp.  
Softcover: 978-1-62948-493-8. $72.00.  

Alpha-synuclein is a synuclein protein of unknown function primarily found in neural tissue, making up as much as 1% of all proteins in the cytosol. It is predominantly expressed in the neocortex, hippocampus, substantia nigra, thalamus, and cerebellum. In this book, the authors discuss the functional mechanisms, structure and role in Parkinson’s disease of alpha-synuclein. Topics include α-synuclein accumulation in Parkinson’s disease and multiple system atrophy; α-synuclein metabolism and aggregation in the pathogenesis of Parkinson’s disease; and the potential role of α-synuclein dysregulation in Parkinson’s disease pathology.

**Androgen Receptor: Structural Biology, Genetics and Molecular Defects**

**Silvia Socorro (Universidade da Beira Interior, Faculdade de Ciências da Saúde, Covilhã, Portugal)**

In series: *Protein Biochemistry, Synthesis, Structure and Cellular Functions*  
Hardcover: 978-1-62948-693-2. $150.00.

The androgen receptor (AR) mediates a wide range of physiological actions of androgens in cells and tissues. Contributions to this volume cover distinct topics of AR signalling, extending from the structural aspects of AR to its role in androgen-associated diseases and potential clinical applications. Some key issues covered include an overview of structural aspects of AR genes and proteins in mammalian and non-mammalian vertebrate species and a description of the identified AR splice variants in pathological and non-pathological conditions. The structural and functional analysis of coding and untranslated regions of AR are discussed in the context of diseases such as androgen insensitivity syndrome, spinal and bulbar muscular atrophy, polycystic ovarian syndrome and breast, ovary and prostate cancers. The role of AR regulated genes implicated in prostate cancer progression is also explored. This book is a comprehensive conceptual review of the recent findings on AR genes and protein structure, molecular variants, ligands, target genes and signalling mechanisms. Graduate students, scientists and professionals can use it as both a study text and a reference for research purposes.

**Beta-Catenin: Structure, Function and Clinical Significance**

**Abel Braunfeld and Gabriel R. Mirsky**

In series: *Protein Biochemistry, Synthesis, Structure and Cellular Functions*


Hardcover: 978-1-62808-801-4. $120.00.
e-book: 978-1-62808-802-1. $120.00.

β-catenin is a multifunctional protein required in both cell-cell adherens junctions and canonical Wnt signalling. It is involved in a variety of developmental processes and is critical in heart development, one of the first functional organs to develop during vertebrate embryogenesis. In this book, the authors discuss the structure, function and clinical significance of β-catenin. Topics include the role of β-catenin in the context of oral squamous cell carcinoma and its clinical implications; how β-Catenin/TCF4/Survivin signaling determines the properties and fate of human corneal epithelial stem cells; β-Catenin in kidney fibrosis and cardiovascular development; the role of β-Catenin in eye development, infection and inflammation; targeting the canonical Wnt/Beta-Catenin signaling pathway in hematological malignancies; and the clinical significance of Beta-Catenin in immunological disease and dysfunction.

**Leptin: Biosynthesis, Functions and Clinical Significance**

**Edward L. Blum**

In series: *Endocrinology Research and Clinical Developments*


Hardcover: 978-1-62948-801-1. $150.00.

Leptin was originally described for its role in obesity and energy homeostasis. This book focuses on the biosynthesis, functions and overall clinical significance of leptin. Leptin's association to Alzheimer's diseases and other cognitive disorders is discussed along with the leptin-renal axis; the relationship of leptin and melanoma; the inhibition of oncogenic effects of leptin by cAMP elevation in triple negative breast cancer cells; the leptin regulation of intestinal nutrients absorption; the implications of leptin in male reproductive function; the role of leptin in early life metabolism and its physiological, pathological, and potential therapeutic implications; the skeletal effects of leptin; the physiological roles of leptin in oral and maxillofacial region; the respiratory responses to microinjections of leptin; and leptin as a reproductive modulator.

**Lipid Rafts: Properties, Controversies and Roles in Signal Transduction**

**Dan Silence (De Montfort University, Hawthorn Building, Leics LE1 9BH, United Kingdom)**

In series: *Cell Biology Research Progress*


Hardcover: 978-1-62948-961-2. $150.00.

For many years, the surface of cells was viewed as a homogeneous fluid lipid casing. However, it is now understood that the surface of cells is not homogeneous but instead contains domains selectively enriched in particular lipids and proteins. Although it is still not completely clear how these lipid platforms are formed, their existence provides a basis for the organization of many cell processes. One possibility is that microdomain formation relies on lipid phase separation in the plane of the bilayer – ‘lipid raft’ hypothesis. Lipid rafts are compelling since they provide spontaneous organization for signal transduction as well as intracellular sorting and targeting. What are the functions of these domains? Do they rely on specific interactions and how do they change in response to cell signaling processes? Do they help in the understanding of cell signaling and immune function and how may they be disrupted in disease processes such as neurodegeneration?

**Protein Engineering: Design, Selection and Applications**

**Mallorie N. Sheehan**

In series: *Protein Science and Engineering*

In series: *Protein Biochemistry, Synthesis, Structure and Cellular Functions*


Hardcover: 978-1-61668-286-6. $85.00.
Softcover: 978-1-62618-878-5. $59.00.

Protein engineering is the process of developing useful or valuable proteins. It is a young discipline, with much research currently taking place into the understanding of protein folding and protein recognition for protein design principles. There are two general strategies for protein engineering. The first is known as rational design, in which the scientist uses detailed knowledge of the structure and function of the protein to make desired changes. The second strategy is known as directed evolution and this is where random mutagenesis is applied to a protein, and a selection regime is used to pick out variants that have the desired qualities. This new book presents and reviews important data on protein engineering, such as application of engineered proteins and cell adhesive surfaces as scaffolds or other biomedical devices which has the potential to promote tissue repair and regeneration for a wide variety of tissues including bone and skin.

**Recent Advances in Proteomics Research**

**Ming D. Li (Department of Psychiatry and NB Sciences, University of Virginia, Charlottesville, VA, USA)**

In series: *Protein Biochemistry, Synthesis, Structure and Cellular Functions*


Hardcover: 978-1-62948-218-7. $150.00.

The primary objective of this book is to provide updated knowledge of recent advances in proteomics research in various fields. The topics covered include, but are not limited to, proteomic analysis for microbiomes, specific cell types from heterogeneous tissues, body fluids, mitochondria, and environmental toxicology. Almost all proteomics techniques currently used in research have been reviewed.
in at least one chapter, including traditional one- or two-dimensional gel-based, gel-free shotgun, label-based or label-free quantitative, and array-based methods. In addition, although they are not the major focus of this book, proteomics-related bioinformatics tools such as database searching, data mining, data analysis, and gene pathway analysis are briefly covered. Additionally, this book contains chapters on some technical issues related to applying proteomics technologies to specific issues, such as sample preparation for removal of contaminants and depletion of highly abundant proteins. Collectively, these chapters provide a broad view of various technologies commonly used in proteomics research and their successful applications to address different questions across various species. It is our hope that such a book can provide readers with a comprehensive understanding of proteomics technologies and their application to address various scientific questions.

PSYCHOLOGY AND PSYCHIATRY

Acts of the Body: Trilog on Pathologies of Narcissism Related to the Body
Leila Chikhani-Nacouz (Lebanese University II (Fanar) – Psychotherapy, Beirut, Lebanon), Helene Issa (Balamand University, Beirut, Lebanon) and Mounir Chalhoub (BEING LCTC, Centre for Psychotherapy, Beirut, Lebanon)
In series: Psychology of Emotions, Motivations and Actions
Softcover: 978-1-62417-622-7. $52.00.
e-book: 978-1-62618-173-1. $52.00.

The aim of this work is to show that certain acts related to the body (sport, tattoo, clothing), when practiced to excess, go beyond sanity and aesthetics. Through interviews and the administration of the TAT test to adolescents, the authors return to the origins of these acts and discover at their basis family dysfunction and a rejection of the child. A lacking parental gaze leading to a wrong body image, instability in the parent/child relationship provoking insecurity, and a narcissistic personality linked to the aesthetic of the body explain the adolescents’ dependent passage to these acts of bodybuilding to excess, excessive tattooism and exaggerated mummifism.

Advances in Psychology Research. Volume 98
Alexandra M. Columbus
In series: Advances in Psychology Research
2013. 152 pp.
Hardcover: 978-1-62808-977-6. $95.00.

This continuing series presents original research results on the leading edge of psychology. Each article has been carefully selected in an attempt to present substantial results across a broad spectrum. This book reviews research on improving the recognition and management of depression in epilepsy: a clinical contribution to the comprehension of the psychopathological effects of cochlear implants; cardiac autonomic regulation and its role in cardiovascular adverse outcomes in major depression; a review of the intentional monetary activities that maximize happiness, economic value and psychological needs; Lamotrigine treatment for the improvement of adolescent’s mood instability, impulsivity, aggression and suicidal attempts; assessing TLI (transmissible liability index) as a predictor of treatment for youth with substance use disorders; phosphoinositide signal transduction pathways and major depression; experimental studies of physical exercise to improve students sleep quality and mental health; ideal and acceptable body size in college fraternity men; and the psychobiological foundation of the theory of attitude.

Continuity versus Creative Response to Challenge: The Primacy of Resilience and Resourcefulness in Life and Therapy
Marek J. Celinski (Ontario, Canada), Kathryn M. Gow (Queensland, Australia)
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-61209-718-3. $275.00.
Softcover: 978-1-62808-312-5. $89.00.

Everyday observations indicate that people put a lot of effort into maintaining what they consider valuable, and if they are not satisfied with the status quo and opt for change, this represents a departure into new territory where the chaotic, unknown, or mysterious have both appealing and threatening qualities. It is our intention to present to our readers the rich meaning behind either type of behaviour. In order to be “in the world”, we have to experience both sides of life which in a dialectic way would motivate us to seek and achieve progress. This book extensively covers the many aspects of personal survival and the therapeutic ways by which resilience can be promoted and fostered in individuals with varying degrees of mental, emotional, and physical resources.

Emotional Relationships: Types, Challenges and Physical/Mental Health Impacts
Changiz Mohiyeddini (University of California, Berkeley, California, USA)
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62618-928-7. $150.00.

Undoubtedly, emotional relationships, as a description of the emotional bond between any two individuals or between an individual and an animal or an object, are one of the most challenging ontogenetic and developmental tasks. Hence, the main purpose of the present edition is to discuss crucial issues related to emotional relationships. The initial chapter provides the reader with a brief introduction into key aspects of emotions that delineate their high degree of importance to humans and their wide range of functions as a highly complex phenomenon. As emotions can be over powering and become debilitating and intrusive in daily life, thus, the ability to effectively regulate emotions is paramount as it serves as a protective factor against emotional distress. Considering the fact that emotions have a crucial impact on all levels of our work life, Chapter Seven focuses on managing emotions in the workplace, followed by a review on emotional intelligence (Chapter Eight) that recognizes the individual differences in processing and managing emotions in everyday life. Chapter Nine reviews the growing interest in utilizing human-animal relationships for enhancing physical and emotional well-being. Wolf and Brown explore the nature of the life-enhancing relationship between humans and animals and describes the Animal Assisted Play Therapy Program as one illustration of how the human-animal bond may facilitate well-being and can be the foundation for building other relationships.

Expanding Horizons of the Mind Science(s)
P.N. Tandon (National Brain Centre, Manesar, India), R.C. Tripathi and N. Srinivasan (University of Allahabad, India)
In series: Neuroscience Research Progress
Loneliness, as old as time itself, is not easy to define. It’s a bit like love — you know when you feel it, but cannot specifically define it. However, no one who ever walked on the face of this earth has gone through life without experiencing the pain of being lonely, alienated, and feeling unconnected to others, unloved, or even rejected. Although we, in the 21st century, pride ourselves as inventors [the Internet, computers, reaching the moon, and biomedical advances] we did not invent this one — loneliness was here way before any of us, and consequently we can find it mentioned in the Bible, literature, art, and philosophy. And, as things appear now — it is here to stay. In addition to addressing loneliness, its causes, and how it affects our health, well-being, and quality of life, we also discuss what loneliness anxiety is, and the difference between loneliness and depression, for those two may go together, but are actually different. While loneliness is inescapable, it does not mean that when we experience or feel it ‘coming’ that we just wait and embrace the pain until ‘it’ decides to leave us. People have developed various ways of coping with loneliness; learning to either avoid or better cope with it. This book lists a variety of successful methods to reduce the pain of loneliness, and in some ways, to reduce the probability of it happening.

Managing Stress: From Theory to Application
Tracey J. Devonport (School of Sport, Performing Arts and Leisure, University of Wolverhampton, Walsall, UK)
In series: Psychology Research Progress
Hardcover: 978-1-61470-691-5. $165.00.
Softcover: 978-1-62808-772-7. $79.00.
It is commonly acknowledged that stress and coping has an impact upon the productivity, health and well-being of individuals. As such, many domains of psychology are seeking to better understand the stress and coping dynamic to inform the construction of interventions intended to facilitate coping. This book is designed to profile the use of theory in guiding the structure, content and assessment of coping interventions across a range of applied domains. The domains addressed within the text include sport psychology, clinical psychology, organizational psychology, developmental psychology, police psychology and health psychology. This book brings together related issues regarding the application of theory to practice into a single source.

Mental Health of Children and Adults in the United States: Select Surveillance Efforts and Data
George H. Jackson
In series: Public Health in the 21st Century
In series: Mental Illnesses and Treatments
2013. 159 pp.
Softcover: 978-1-62808-626-3. $52.00.
e-book: 978-1-62808-627-0. $52.00.
Mental disorders among children are described as “serious deviations from expected cognitive, social, and emotional development”. These disorders are an important public health issue in the United States because of their prevalence, early onset, and impact on the child, family, and community, with an estimated total annual cost of $247 billion. A total of 13%–20% of children living in the United States experience a mental disorder in a given year, and surveillance during 1994–2011 has shown the prevalence of these conditions to be increasing. Mental illnesses account for a larger proportion of disability in developed countries than any other group of illnesses, including cancer and heart disease. In 2004, an estimated 25% of adults in the United States reported having a mental illness in the previous year. The economic cost of mental illness in the United States is substantial, approximately $300 billion in 2002. Population surveys and surveys of health-care use measure the occurrence of mental illness, associated risk behaviors (e.g., alcohol and drug abuse) and chronic conditions,
and use of mental health-related care and clinical services. This book summarizes data from selected CDC surveillance systems that measure the prevalence and impact of mental illness in the U.S. child and adult populations.

New Developments in Alternative Splicing Research
Samuel DiMaggio and Emma Braschi
In series: Genetics - Research and Issues
Hardcover: 978-1-62808-720-8. $150.00.
Alternative splicing occurs in most human genes and contributes to protein diversity by producing multiple mRNAs from each gene. In this book, the authors present new developments in alternative splicing research. Topics discussed include alternative splicing alterations in Alzheimer's disease; plant RNA-binding proteins implicate mRNA processing in abscisic acid (ABA) responses; comprehensive analyses of alternative exons in neuronally differentiated P19 cells; an epigenetic view on alternative splicing; identification of genuine alternative splicing variants for rare or long-sized transcripts; alternative RNA splicing and regulation of nitric oxide signaling; alternative splicing by analyzing human mRNA diversity using data of FLI human cDNAs; alternative splicing in human immune systems and autoimmune diseases; and poly (ADP-Ribosylation regulation in alternative splicing.

Post-Traumatic Stress and Mental Health in the U.S. Military: Issues and Response Efforts
Jeffrey N. Lentz
In series: Psychiatry - Theory, Applications and Treatments
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62948-403-7. $110.00.
In this book, the authors gather and present new research in the study of post-traumatic stress disorder. Topics discussed include the diverse emotional consequences and treatment needs of sexual assault and intimate partner violence survivors; PTSD among visible and invisible electrically injured outpatients; early life stress and emotional vulnerability; delayed effects of repeated inescapable severe stress on brain cannabinoid receptor expression and acoustic startle response in adolescent male rats; suicidal ideation associated with PCL checklist-ascertained PTSD among veterans treated for substance abuse; and veterans' engagement in psychotherapy for PTSD.

Psychology of Anger: New Research
Maurice G. Penrod and Scott N. Paulk
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62948-465-5. $150.00.
In this book, the authors present new research in the study of the psychology of anger. Topics discussed include how we look at others in anger and the development of the McLinton Interpersonal Domain-specific Anger Instrument (MIDAI); anger and moral outrage; driver anger and aggression; a test of the state-trait model of anger with middle-aged drivers; developing a valid version of the Multicultural Latin American Inventory of Anger Expression and Hostility (ML-STAXI) to measure anger in Mexican adolescents; predicting children's angry, aggressive behavior from cognitive and emotional self-regulation; measuring affect intensity for anger and frustration; the relationship between state-trait anger and aggressive driving; and mental care for anger in physically ill patients.

Psychology of Burnout: New Research
Benjamin R. Doolittle (Combined Internal Medicine & Pediatrics Residency Program, Yale University School of Medicine, CT, USA)
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62948-313-9. $150.00.
This book is an important, fresh contribution to the field of job satisfaction, workplace coping, and mental health. The compendium balances original, vigorous research and comprehensive reviews that explore questions of personality type, institutional culture, career choice, and workplace trauma. Leading researchers investigate the larger forces that shape our workplace environment as well as the specific challenges of diverse populations – clergy, physicians, coaches, social workers, and civil service workers. Attuned to the most important questions of job burnout and coping, this collection is recommended for both the researcher and committed student who wish to explore the forces that influence the modern workplace. It shows promise to be a landmark in the field and will enjoy a prominent place in psychology libraries the world over.

Psychology of Career Counseling: New Challenges for a New Era
Annamaria Di Fabio and Jacobus Gideon Maree
(Department of Psychology, University of Florence, Italy)
In series: Psychology of Emotions, Motivations and Actions
2013. 312 pp.
Hardcover: 978-1-62808-272-2. $175.00.
This Festschrift in honor of Prof. Mark L. Savickas, the world's leading researcher, scholar, and thinker in the fields of Vocational Psychology and Career Counseling, celebrates his pivotal role in articulating a new framework for career counseling for the 21st century; one that can be used to help clients choose careers and design successful lives. His contribution to these fields has immense theoretical and practical value for all of us involved in helping clients not only choose jobs in a linear manner but, more importantly, construct careers by imposing meaning on their career-related behavior experiences, and designing successful lives (Savickas, 2005; 2011). This is an advanced text that identifies and reflects the enormous global interest in Mark Savickas' work. The volume is located in a narrative, storied paradigm, promoting the notion of enabling people to design successful lives and make social contributions. Individually and collectively, the authors elaborate on the shift in career counseling towards a contemporary, contextualized approach built on respect and striving to promote career adaptability, thereby exploiting change and its effects. Emphasis is placed on identifying deep-rooted strengths and motives in clients and on using innovative techniques to empower clients to a) reflect on their career and life stories, and b) reflect on these reflections to initiate appropriate action because magic is bound to occur when clients begin to move (Savickas, 2011). The authors describe action in terms of three steps: constructing a meaningful perspective in which possibilities become available; devising a life design to enable clients to achieve these possibilities; and, eventually, accomplishing these possibilities through action. Taken together, this book provides a priceless resource for health-care professionals in general and those of us working in the twin fields of guidance and counseling in particular. The text is recommended for scholars, academics, researchers, psychologists, social workers, teachers, and postgraduate students.
Recent Hispanic Research on Sustainable Behavior and Interbehavioral Psychology
Cirilo García, Victor Corral-Verdugo, and Diana Moreno

In series: Psychology Research Progress
Hardcover: 978-1-62808-136-7. $150.00.

Sustainable behavior, the set of effective and deliberate human actions aimed at conserving present and future earth’s biophysical and social resources (Corral-Verdugo, 2010) is one of the main subjects of environmental psychology (EP). This is understandable because environmental problems have become so extreme that they pose a real threat to humankind’s existence. EP studies the interactions between people’s behavior and their socio-physical environment (Aragonés and Amérgo, 2000). Some of these interactions result in ecological and social problems: Most of the depredations of natural resources, as well as human suffering are produced by negative people’s actions. The daily behavior of men and women, along with their psychological predispositions constitute the paramount causes of ecological and social disturbances. This book incorporates works of empirical research that are derived from different conceptual models based on psychological or psychosocial theory. It presents scientific studies on psychology, done principally by Spanish-speaking researchers from different countries.

Schizophrenia Research: Recent Advances
Tomiki Sumiyoshi (University of Toyama Graduate School of Medicine and Pharmaceutical Sciences, Toyama, Japan)

In series: Mental Illnesses and Treatments
Softcover: 978-1-62808-703-1. $79.00.

Schizophrenia is a relatively common disease whose lifetime prevalence in the general population is reported to be about 1%. From the perspective of public health, the illness has been associated with serious consequences. Besides psychotic symptoms, schizophrenia is characterized by disturbances of cognitive function, which is considered to largely determine the outcome of patients. The neural and genetic substrates underlying its pathophysiology have not been fully demarcated, posing a challenge for the development of breakthrough therapeutics. This book provides key information about the latest endeavor to solve these difficulties characterizing this enigmatic disease.

Social Anxiety: Perceptions, Emotional and Triggering Symptoms and Treatment
Efrosini Kalyva (The University of Sheffield International Faculty, CITY College, Thessaloniki, Greece)

In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62808-396-5. $150.00.

Social anxiety or social phobia has become increasingly common in contemporary societies due to the increased isolation in impersonal living environments and the weakening family ties that leave many individuals feeling withdrawn and estranged. In this book, the authors present new research on the ways of assessing social anxiety, as well as the role of autonomic arousal in the development of social phobia. Special reference is made to the impact of family on the development and maintenance of social anxiety in children on a both theoretical and practical level. Social anxiety is also discussed in different groups of individuals that have unique characteristics, such as substance users and abusers, patients with chronic heart failure, individuals with autism spectrum disorders, and AIDS/HIV sufferers. Finally, suggestions are made on ways to enhance help-seeking behavior for individuals with social anxiety disorders and there is extensive reference to cognitive behavioral training and other relevant effective treatment or intervention techniques.

The Evergreen Guide: Helping People to Survive and Thrive in Later Years
Declan Lyons (Consultant Psychiatrist in Mental Health of Later Life, St. Patrick’s Hospital, Dublin, Ireland)

In series: Psychiatry - Theory, Applications and Treatments
Hardcover: 978-1-62948-714-4. $150.00.

The Evergreen Programme is a group-based therapeutic programme for older adults with acute mental illness which has been in place since 2003 at St. Patrick’s University Hospital, Dublin. The Evergreen Guide is compiled by members of the multidisciplinary team, from a diverse range of disciplines, who deliver this programme in an inpatient unit of the largest mental health facility in Ireland. This publication reflects the broad range of topics and material which form the basis of the 6-week rotational programme. The Evergreen Programme was designed to be an interactive group programme for older people with a range of psychological conditions that could bridge the gap between diversional activities and psychotherapy. We believe that this book will be of particular interest to health professionals who deliver group-based therapy to older people and will also be a resource for long-term care facilities, as well as community-based active retirement groups and day hospitals, and other acute inpatient facilities. The book reflects a holistic approach to the treatment and rehabilitation of older people recovering from acute mental illness. The chapters are presented in a format that prompts discussion and participation through the use of reflective questions at the start of each chapter, followed by six, discrete weekly ‘modules’ reflecting the present organization and operation of the Evergreen Programme. Clinicians can pick up this guide and begin to use it immediately, as a manual or road map in a group setting, for imparting the practical principles and strategies needed by older people to maximize their physical, mental and creative abilities. The breadth of topics covered is diverse ranging from successful aging, to spirituality, to the safe use of medication. All of the material is written by the team of clinicians who have considerable individual skill and knowledge, not only in relation to the theoretical material, but also in respect of the optimal methods and manner for imparting this information to groups of older people. Mental health professionals will appreciate this practical and detailed guide which will increase their effectiveness, relevance and competence in working with older people.

The Happiness Compass: Theories, Actions and Perspectives for Well-Being
Francesco Sarracino (Laboratory for Comparative Social Research, Higher School of Economics, Russia)

In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62808-817-5. $175.00.

How happy are you? This naive question proved to be so powerful as to shake up social sciences and attract the attention of media and policy makers around the globe. Everybody wants to be happy. Thanks to the recent progress in measuring subjective well-being, social sciences
have asserted that people's own evaluation about their well-being must be taken seriously. The opportunity of measuring happiness in a consistent and reliable way provides new impulse to a joint effort from a variety of disciplines to improve people's quality of life and potentially change the way modern societies are organized. This book provides a reference tool to understand current developments. It provides an overview of the evolving body of happiness research and draws some of its future trajectories. This book collects the contributions of scientists from psychology, sociology, economics, political science and other scientific domains sharing the quest for improving people's quality of life. Building on this expertise, the book provides a compass to orient the reader in a burgeoning literature to document, inform and suggest ideas for future research.

**PUBLIC HEALTH**

**Advances in Drug Resistance Research**
Christíadas Morais (Centre for Kidney Disease Research, School of Medicine, The University of Queensland, Translational Research Institute, Queensland, Australia)

In series: *Public Health in the 21st Century*
Hardcover: 978-1-63117-131-4. $150.00.

Drug resistance continues to be a major problem in the effective treatment of many diseases. Resistance to chemotherapy, whether intrinsic or extrinsic, is the result of at least three well defined mechanisms: prevention of the interaction of drug with the target, decreased intracellular concentration of the drug due to an increased efflux or a decreased influx, and enzymatic modification or destruction of the drug. With the advancement in technology, the molecular mechanisms of drug resistance have been unravelling at a rapid rate. This book is a timely review of such advances in drug resistance research. The nine chapters of this book, written by a group of clinicians and scientists, elegantly summarises recent advances in our understanding of this important clinical problem with emphasis on cisplatin, fibroblasts, natural compounds, erythropoiesis-stimulating agents, prostate cancer and kidney cancer. This book will be an important contribution to science, and an invaluable tool for researchers who are interested in drug resistance.

**Bedouin Health: Perspectives from Israel**
Joav Merrick, Alean Al-Krenawi and Salman Elbedour (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)

In series: *Health and Human Development*
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem, Israel)
Hardcover: 978-1-62948-271-2. $150.00.

The “global village” has resulted in the need to tackle cross-cultural issues in the health field. Especially the southern region of Israel (the Negev), which provides a unique opportunity to study the interaction between medicine and culture. The Negev population is a multicultural society, with Bedouin Arabs comprising almost a fifth of its population. This imposes tremendous challenges to the health establishment in the region and serves as a “cross-cultural laboratory” for educating health professionals in global health issues. Both the traditional Israeli medical school track, as well as the Medical School for International Medicine at the Ben Gurion University of the Negev, incorporate studies of cross-cultural issues in various forms and to different degrees. Studies suggest that the exposure of students to international medical experiences increases their cross-cultural sensitivity, knowledge and expertise. In this book, you will find research from this region concerned with various aspects of Bedouin health, which we hope will give you a picture of various health issues from the southern region of Israel.

**Break the Cycle of Environmental Health Disparities: Maternal and Child Health Aspects**
I. Leslie Rubin and Joav Merrick (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)

In series: *Pediatrics, Child and Adolescent Health*
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Hardcover: 978-1-62948-107-4. $150.00.

With ten Pediatric Environmental Health Specialty Units (PEHSUs) around the United States, and a few more in other countries, the prenatal field has grown significantly over time. The PEHSUs have each developed and cultivated their own specialties, styles, collaborations, partnerships and special outreach programs such as the Southeast PEHSU’s Break the Cycle program. “Break the Cycle” is an annual mentor/mentee that has been around since 2005. It brings the efforts among students of all disciplines focused on increasing the understanding disparities in environmental conditions and resulting health outcomes. “Break the Cycle” has grown in influence and geography, with an increasing number of student researchers participating each year. As a testament to its deep reach and inspiration, some of these students have changed their academic focus and professional goals following their participation in Break the Cycle, bringing to the field of children’s environmental health the numbers, passion and commitment necessary to address complex issues. This compilation presents important prenatal exposure research accomplished through this PEHSU mentorship program. The compilation demonstrates the enormous breadth and interactions between social, chemical and biological issues exemplified by the need to understand how, for example, the built environment might affect birth weight, how air pollution might affect behavior or how growth and development of males is affected by exposure to brominated flame retardants. These are the kinds of questions that stretch our minds and give us an appreciation of science, health, society and equity. In due course, the experiences of students and mentors in Break the Cycle builds a cadre of enlightened and motivated participants in the effort to promote/pursue the best environments for the children of today, tomorrow and generations to come.

**Child Health and Human Development: Social, Economic and Environmental Factors**
I. Leslie Rubin and Joav Merrick (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)

In series: *Pediatrics, Child and Adolescent Health*
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
2013. 228 pp.
In this book, we look at issues concerned with the home environment, the
amassed and allocated to address en-
will only be able to escape that cycle when children's environmental
comprehensive healthcare and appropriate educational services. They
trapped in the cycle of environmental health disparities due to low
chemical and physical factors in their environment, but often become
by envir-

Environmental Health Disparities in Children: Asthma, Obesity and Food
I. Leslie Rubin and Joav Merrick (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Hardcover: 978-1-62948-122-7, $150.00.
The children of today are the citizens and leaders of the future. It
behaves us, as responsible citizens and leaders of today, to make sure
that we provide our children and future leaders with the necessary
health, education and guidance to prepare their future for successive
generations, and to live in a safe and sustainable environment in
harmony with each other and with the world around them. In this book,
we bring research about smoking and pollution and its effect on
childhood asthma, the issue of childhood obesity and the importance of
food, not only for survival, but also for good health.

Environmental Health: Home, School and Community
I. Leslie Rubin and Joav Merrick (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Hardcover: 978-1-62948-155-5. $110.00.
Children living in circumstances of social and economic disadvantage
are at high risk for experiencing health problems caused or exacerbated
by environmental factors. They are not only vulnerable to adverse
chemical and physical factors in their environment, but often become
trapped in the cycle of environmental health disparities due to low
parental health literacy, limited social capital, and a lack of access to
comprehensive healthcare and appropriate educational services. They
will only be able to escape that cycle when children's environmental
health becomes a priority and the resources, energy and creativity are
amassed and allocated to address environmental health concerns. In
this book, we look at issues concerned with the home environment, the
school and the community. Investing in children’s environmental
health will prove cost-beneficial in the long run.

Food, Nutrition and Eating Behavior
Joav Merrick and Sigal Israeli (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
In series: Health and Human Development
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Hardcover: 978-1-62948-233-0. $175.00.
Eating habits are influenced by social, cultural, religious, economic,
environmental and individual factors. On the whole, people eat to stay
alive and get their nutrition, but they also eat to show belonging to
family or other social groups. Eating habits are linked to acceptable
patterns of behavior, which differs across countries, cultures and ethnic
or religious groups. The food you eat affects your health and also puts
you at risk for certain diseases. To eat healthier food, people may need
to change some habits and also their environment. But in the Western
world, habits are hard to change and in many countries, there is a
reputation for reckless eating. People fill their cups with fatty, sugary,
high-calorie foods instead of more nutritious fruits and vegetables that
the experts tell us to eat. The result is an increase in obesity, heart
disease and higher mortality. Our eating habits also change over time
and across generations. What we liked as kids are not the same we like
as adults, and what we eat is not what the generation before us ate. In
this book, you will find examples of the younger generation, who are
snacking not always healthy food. Chocolate bars and biscuits between
or instead of regular meals can lead to obesity and health problems. As
a person grows up and becomes more aware of the health hazards, they
also become more concerned with nutrition and health issues,
especially if they experience health problems that eventually will make
them change their eating habits. Healthy eating is not about strict
nutrition rules, but finding a way to get the right nutrition in your food
and meals, stay away from unhealthy habits and keep yourself as
healthy as possible.

Global Public Health Policy
Michael W. Popejoy and Chinua Akukwe (Florida International University, Miami, FL, USA, and George Washington University, Washington, DC, USA)
In series: Public Health in the 21st Century
Hardcover: 978-1-62417-719-4. $230.00.
Global Public Health Policy is a book that collects as many current
issues as possible on what is happening globally in public health,
medicine, and public administration related to health policy. The co-
editors structured the book to leave the specific themes relatively open
while allowing for an overall theme of globalization of health problems
so that contributors could offer their perception and reflect their
thoughts on current health issues in the widest possible perspective
without being rigidly constrained. One undercurrent theme throughout
the book is the co-editors shared concern for the necessity to forge a
stronger crosswalk relationship between public administration and
public health in many countries including the established developed
countries. It is too often a reality that the two disciplines exist in
relatively cocooned silos both at the academic level and at the
operational level where they must both operate effectively to ensure the
best service to society particularly in time of crisis when it is too late to 
forge these working relationships.

Green Care: For Human Therapy, Social Innovation, 
Rural Economy, and Education
Christos Gallis (Forest Research Institute, Vassilika, 
Thessaloniki, Greece)
In series: Public Health in the 21st Century
In series: Health Care in Transition
2013. 369 pp.
Hardcover: 978-1-62417-479-7. $175.00.

Today, on a global level, the health sector and social services need 
alternatives to traditional medical treatment, therapy, rehabilitation, and 
work training. Green Care is the use of agricultural farms and the biotic 
and abiotic elements of nature for health and therapy-promoting 
interventions as a base for promoting human mental and physical 
health, as well as quality of life. Animals, plants, crops, gardens, 
forests, and the landscape are used in recreational or work-related 
activities for: psychiatric patients, mentally disabled persons, people 
with learning disabilities, depression and burnout problems, or drug 
and alcohol addiction history, including youth and elderly people, 
young offenders, prisoners, people affected by natural disasters, and 
social service clients. Green Care practices may also be useful for 
anyone who wants to maintain a health and quality life, and for 
students in farm education. “Green Care” is a base for promoting 
mental and physical health, through normal farming activity and is a 
growing movement to provide health, social and educational benefits 
through farming for a wide range of people, providing services on a 
regular basis for participants who attend the farm or the forest activities 
regularly as part of a structured care, rehabilitation, therapeutic or 
educational program. Green Care is a new multidisciplinary science. 
Besides science and practice, Green Care is a Global Innovative 
Movement with healthcare, social, economical, educational, and 
political dimensions. This book presents up-to-date scientific 
knowledge in Green Care, its definitions and theories, and findings to 
show the beneficial effects of Green Care on human health and well 
being. Also, it presents the social, political, economical, and 
educational aspects of Green Care.

Health Literacy: Developments, Issues and Outcomes 
Robert Moore and Derek Perry
In series: Public Health in the 21st Century
Hardcover: 978-1-62808-168-8. $150.00.

Health literacy is the degree to which individuals have the capacity to 
obtain, process, and understand the basic health information and 
services that are needed to make appropriate health decisions. Health 
literacy is associated with multiple health outcomes, including 
hospitalization, global measures of health, and chronic disease 
management. In this book, the authors present current research in the 
study of the developments, issues and outcomes in health literacy.
Topics include designing communication to improve comprehension in 
populations at risk for low health literacy; mental health literacy in sub-
Saharan Africa; cancer and health literacy; mental health literacy and 
its impact on youth mental health and ADHD; ways to integrate health 
literacy into health professional practices; the health literacy of 
children who are looked after by the State; illness recognition and 
aggression-dangerousness perception of schizophrenia; and the health 
belief model and health literacy.

Klebsiella Infections: Epidemiology, Pathogenesis 
and Clinical Outcomes
Lucy A. Pereira and Andrey Santos
In series: Bacteriology Research Developments
Hardcover: 978-1-62808-502-0. $120.00.
e-book: 978-1-62808-503-7. $120.00.

Bacteria belonging to the genus Klebsiella have a dual role in human 
pathophysiology. Some of the strains are potent opportunistic 
pathogens capable of causing severe illnesses, whereas a majority of 
the klebsiellas belong to our normal flora, particularly in our 
alimentary tract. In this book, the authors present current research in 
the study of the epidemiology, pathogenesis and clinical outcomes of 
klebsiella infections. Topics discussed include interactions of klebsiella 
sp. with other intestinal flora; C-9154 derivatives with potent in vitro 
biological activity against klebsiella pneumoniae; treatment strategies 
for infections caused by carbapenem resistance and pandrug resistant 
klebsiella isolates; clinical characteristics of klebsiella pneumoniae 
pneumonia in alcoholic patients and virulence factors of the isolates; 
klebsiella pneumoniae endogenous endophthalmitis; klebsiella 
pneumoniae liver abscess; virulence mechanisms of the klebsiella; and 
multi-drug resistant klebsiella pneumoniae and K. oxytoca strains in 
Russian hospitals.

Pain Management Yearbook 2011
Joav Merrick - Series Editor (National Institute of 
Child Health and Human Development, Ministry of 
Social Affairs, Jerusalem)
In series: Health and Human Development
Edited by: Joav Merrick (National Institute of Child 
Health and Human Development, Ministry of Social 
Affairs, Jerusalem)
2013. 615 pp.

In this yearbook for 2011 we start out with a description of research 
from the University of Toronto in Canada on bone metastases. The 
next section also from the Odette Cancer Centre, Sunnybrook Health 
Sciences Centre is about brain metastases, a frequent manifestation of 
advanced cancer devastating to the patient as typically patients do not 
survive more than a year upon diagnosis and the treatment itself often 
results in significant side effects that impact a patients quality of life. 
The next section is on neuroplasticity, which reflects the ability of 
human brain to alter the pattern of neural activation in response to 
previous experience, and recent findings indicate that the effects of 
experience can lead to both structural as well as functional 
reorganization. If neuromodulatory approaches prove to be safe and 
effective, they could change the current view of best practice in pain 
management and assume a significant role in the clinic. This yearbook 
will present you with the latest research on pain management.

Pain Management Yearbook 2012
Joav Merrick - Series Editor (National Institute of 
Child Health and Human Development, Ministry of Social 
Affairs, Jerusalem)
In series: Health and Human Development
Edited by: Joav Merrick (National Institute of Child 
Health and Human Development, Ministry of Social 
Affairs, Jerusalem)

In this yearbook for 2012 we present you with the latest research on pain 
management. We start our with experience from Hong Kong on 
palliative care and the four year training program and then further 
along the pages of this yearbook you will find information about pain, 
psychological symptoms and prescription drug misuse in HIV, oxygen 
therapy in patients with advanced lung disease, pain beliefs and pain-
related profiles of older persons living in nursing homes, happiness among community-dwelling older persons, fibromyalgia in women, chronic headache, pain management programs, and the role of radiotherapy for the management of painful bone metastases. It is our hope that you as the reader will find the information of interest and useful.

Pain: International Research in Pain Management
Joav Merrick, Patricia Schofield and Mohammed Morad (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
In series: Disability Studies
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Since pain management became a specialty in its own right and following the tremendous breakthroughs made by several pioneer researchers, we have seen major developments in the field and a growing international interest represented at the many national conferences and the World Pain Congress and European Congress. But there is still much to do, as there are still groups under-represented in the research such as children, older adults and people with intellectual and developmental disabilities. Also, we do not have all the answers and pain is an area, where traditional medicine may well be complemented by the field of complementary and alternative therapies. In this book, we have gathered recent papers related to many aspects of pain and pain management and it is our hope that you will all benefit from the wisdom in the many research papers.

President’s Emergency Plan for AIDS Relief: Status and Assessments
Michelle Gautier
In series: Public Health in the 21st Century
Hardcover: 978-1-62808-493-1, $110.00.
In 2013, the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) will mark nearly ten years of success with an extraordinary year of achievements. None of this would have been possible without the vision and leadership of President Bush, President Obama, and the bipartisan support of Congress. A decade ago AIDS was wiping out an entire generation in Africa; today, PEPFAR’s efforts and those of its many partners have brought the world to a new era - a time when new HIV infections and AIDS-related deaths are on the steep decline, and an AIDS-free generation is both U.S. policy and a goal within our reach. Building off recent breakthroughs, which demonstrated the power of key evidence-based interventions to drive down the rate of new infections and save more lives, this book reflects lessons learned from almost ten years of experience in supporting countries to rapidly scale-up HIV prevention, treatment, and care services. It demonstrates the opportunity for the world to help move more countries toward and beyond the tipping point in their epidemics and put them on a path to achieving an AIDS-free generation. The U.S. commitment to the global AIDS response will remain strong, comprehensive, and driven by science - and clearly outlines what PEPFAR is doing and will continue to do to help make an AIDS-free generation a reality.

Public Health Emergency Medical Countermeasures Enterprise Strategy and Implementation Plan
Niel A. Harris
In series: Public Health in the 21st Century
Hardcover: 978-1-62808-861-8, $110.00.
The United States continues to face a range of serious threats to its national health security from the deliberate use or accidental release of chemical, biological, radiological, and nuclear (CBRN) agents, as well as from naturally occurring and emerging infectious diseases, including pandemic influenza. A failure to anticipate these threats – or the lack of a capacity to effectively respond to them – could leave an untold number of Americans dead or permanently disabled. The United States must therefore have the nimble, flexible capability to produce and effectively utilize medical countermeasures in the face of any attack or threat whether known or unknown – novel or reemerging – natural or intentional. In addition, these capabilities must be communicated to the American public both before and during an emergency. The Secretary of Health and Human Services (HHS) leads all Federal public health and medical response to public health and medical emergencies covered by the National Response Framework. Effectively fulfilling this responsibility and accomplishing these goals necessitates coordination of medical countermeasure-related activities occurring across multiple Federal departments. To provide this coordination, HHS established the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) in July 2006 to coordinate Federal efforts to enhance civilian preparedness from a medical countermeasure perspective. The PHEMCE is charged with addressing the needs to produce and make medical countermeasures available to limit potential adverse health impacts on the large and diverse U.S. civilian population. The PHEMCE is working to meet the public health emergency needs of the entire civilian population, including groups that require special medical considerations, such as children and the elderly, as well as for first responders, health personnel, and other critical infrastructure personnel, by taking a “whole of community” approach in planning, response, and recovery efforts.

Public Health Yearbook 2012
Joav Merrick - Series Editor (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
In series: Health and Human Development
Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)
Hardcover: 978-1-62808-078-0, $350.00.
In this Public Health Yearbook 2012 we will touch upon several public health topics like burns, infant mortality, malnutrition, tropical pediatrics, building community capacity, and HIV research. Tropical pediatrics is a branch of tropical medicine focusing on children in these areas. The current process of global warming and the widespread issue of international travel are bringing these conditions to many places of the globe. Advances in science, innovations in business, and technological development in the last century and the continued rapid pace of change in these areas have created an environment, where the world today in the twenty-first century knows few boundaries. Health care is a field that has been enhanced and able to expand as a result of progress in these diverse yet integrated areas. However, for all of the improvement that new drugs, health care re-organization and focused delivery, and accessible electronic medical records, for example, can afford many of the “haves” in society, there still remains a significant segment of the population in the industrialized world, and certainly in developing countries, who comprise the “have nots” and do not benefit
from this progress. This disparity in health among populations across the globe has existed for decades despite our advances in health care and will be discussed in this yearbook and in the last section a small cross-section of some of the types of approaches that contemporary social scientists are taking in their efforts to minimize the harms resulting from HIV and AIDS.

Role of the Environmental Protection Agency in Protecting Children's Health: Assessments

Paul D'Aubigne

In series: Children's Issues, Laws and Programs

2013. 144 pp.

Hardcover: 978-1-62948-505-8. $110.00.

Scientific studies have shown that because children's bodies are still developing, they can be more vulnerable than adults to certain environmental hazards, including air pollutants, pesticide residues on food, contaminants in drinking water, and toxic chemicals in the home. The Environmental Protection Agency (EPA) has made protecting children’s health part of its mission by establishing a policy in 1995 to ensure that the agency consistently considers children in its actions and creating The Office of Children’s Health Protection (OCHP) to support those efforts. In a 2010 report, the Government Accountability Office (GAO) found that the EPA had not fully utilized OCHP and other child-focused resources to protect children’s health. This book examines (1) the extent to which the EPA has implemented the GAO’s 2010 recommendations on children’s health protection and (2) the role, if any, that OCHP has played in ensuring that key EPA program offices consider children’s health protection in their regulatory activities. The report also describes how OCHP has worked with external partners to leverage its resources.

Sexual Statistics: Select Reports from the National Center for Health Statistics

Elizabeth A. Thomas

In series: Public Health in the 21st Century


Softcover: 978-1-62808-570-9. $52.00.
e-book: 978-1-62808-571-6. $52.00.

This book presents national estimates from the National Center for Health Statistics on sexual behavior, sexual attraction, and sexual identity in the United States; prevalence and timing of oral sex with opposite-sex partners among females and males aged 15-24 years; contraceptive methods women have used in the United States from 1982-2010; current contraceptive use in the United States (2006-2010); and use of emergency contraception among women aged 15-44. These behaviors and characteristics are relevant to birth and pregnancy rates, as well as to the incidence of sexually transmitted infections.

Substance Abuse

Substance Abuse Treatment and Men's Behavioral Health Needs

Adam W. Brunner

In series: Substance Abuse Assessment, Interventions and Treatment


Men in America today may have advantages that women lack. However, in spite of these advantages, men die at a younger age on average than women; men are also more likely than women to have a substance use disorder, to be incarcerated, to be homeless as adults, to die of suicide, and to be victims of violent crime. Conversely, men are less likely than women to seek medical help or behavioral health counseling for any of the problems they face. These significant problems, combined with men’s tendency to avoid addressing them, call for a response from behavioral health treatment providers. This book provides an overview of the diverse problems that men with substance use disorders face and serves as both an introduction to the topic and a summary of what is known regarding the subject to date.

'The Knotted Cord'. Transgenerational Alcohol Related Neurodevelopmental Disorder (ARND)

Kieran D. O'Malley (Child & Adolescent Psychiatrist, Our Lady’s Children’s Hospital, Crumlin Charlemont Clinic, Dublin, Ireland)

In series: Alcohol and Drug Abuse

2014.

Hardcover: 978-1-62808-712-3. $150.00.
e-book: 978-1-63117-100-0. $150.00.

The title of the book harks back to Michael Dorris’s seminal work The Broken Cord (1987) which eloquently brought this ‘hidden’ population into the light. However, the metaphorical umbilical cord is not truly broken, and the unique neurodevelopmental disorder resulting from prenatal alcohol exposure will continue to be one ghost in our delivery rooms, nurseries, and lives which haunts us. Why a different ‘knot’? Because management becomes knotted with the origins of the infant’s prenatal life, whether they are birthed, fostered, adopted, either same culture or inter-country adopted. The ‘knot’ (as in ‘Not it’), also speaks to medical professionals and society’s continued ambivalence to acknowledging another inconvenient truth. Maternal drinking in pregnancy causes Alcohol Related Neurodevelopmental Disorder (ARND) whether dysmorphic, called Fetal Alcohol Syndrome (FAS), or non dysmorphic, ARND itself. These are both transgenerational developmental psychiatric disorders. The prevalence of ARND continues to be under-recognized as it is mainly presented as a faceless ‘hidden disability’ (masquerading as ADHD, Mood Disorder or ASD), rather than a facial dysmorphic disorder. The subtle denial and minimization of transgenerational alcohol abuse is aided only by
diagnosing the far less frequent dysmorphic ARND (FAS). This creates a false security across social classes concerning alcohol’s true transgenerational epigenetic effect. Thus, the real financial costs and health care burden of transgenerational ARND, with an international prevalence of 1 in 100 live births, is avoided. The thrust of this book has come from 25 years of psychiatric clinical and academic work with children, adolescents and their families, all of whom are affected by prenatal alcohol exposure in Canada, USA, UK and now Ireland. We cannot all escape our collective histories of colonization or abusive violence, and the transgenerational history of alcohol, with trauma and abuse, lies embedded in these stories. It is a story repeated in many different countries and cultures, from Russia to Romania, from South Africa to Southern Alberta. Although I am now working in Ireland, my medical experience has taught me the untold legacies of transgenerational alcohol, in Native Americans, First Nations, disenfranchised minorities, and the seemingly invulnerable gentry. This book is not an angry polemic on the evils of Alcohol, but a passionately written academic treatise on 40 years of alcohol teratology and subsequent human research, which in many ways is still ‘stuck in the moment’, continuing to pursue the minutiae of physical facial features, neuropsychological or brain deficits. This continued approach avoids the ‘elephant in the room’, namely the murky uncharted waters of transgenerational alcohol abuse management. There are no systematic medical management approaches to ARND, and it continues to be managed in a piecemeal fashion with disconnections between the research community and the obstetric, pediatric, psychiatric, social service and alcohol addiction services. Therefore, it is also the author’s hope that in the coming generation the age related phenotypes of ARND will begin to finally be appreciated, and we/society will be better served by their eventual acknowledgement by medical professionals.

SURGERY

Current Understanding and New Techniques in Refractive Surgery
Michael O’Keefe (Mater Private Hospital, Dublin, Ireland)
In series: Surgery - Procedures, Complications, and Results
In series: Eye and Vision Research Developments
Hardcover: 978-1-62808-748-2, $175.00.
In this book, we examine the current techniques of refractive surgery, and lesser-known areas, and we describe some of the newer techniques. Our intention is to reinforce our understanding of the basic areas of LASEK, LASIK, dry eye, topography and aberrations. We have added new and controversial areas of research such as refractive surgery to patients with strabismus and paediatric refractive surgery and have highlighted the current understanding of ectasia and its management. Although refractive surgery is popular with up to a 20 year follow up, little is known about the risk of recurring refractive errors. We discuss this in detail and give our own follow up outcomes. Many regard the frontier as presbyopia, but as it is a moving target, we still lack the information to decide whether the future will be cornea or lens. We discuss the current corneal techniques such as Inlays and Supracor, their advantages and disadvantages. Our target readers are ophthalmologists in training as well as those who practice refractive surgery.

Endoscopy and Endoscopic Procedures:
Management, Technologies and Methods for Improvement
Deborah M. Grange
In series: Surgery - Procedures, Complications, and Results
2014. 120 pp.
Softcover: 978-1-63117-080-5, $72.00.
e-book: 978-1-63117-085-0, $72.00.
In this book, the authors present current research in the study of endoscopy and endoscopic procedures. Topics discussed in this compilation include the videonasopharyngoscopy of the velopharyngeal sphincter during speech and swallowing; fetal airway endoscopy in Ex Utero Intrapartum Treatment (EXIT); and diagnostic and operative endoscopy in otorhinolaryngology.

Kassandra Sarah Slavomir
In series: Surgery - Procedures, Complications, and Results
Hardcover: 978-1-63117-440-7, $95.00.
e-book: 978-1-63117-441-4, $95.00.
Bariatric surgery has become a mainstay in the treatment armamentarium of morbid obesity. Randomized trials have established the efficacy of bariatric surgery towards sustained weight loss, along with significant improvements in related comorbidities, quality of life measures, and all-cause mortality. This compilation discusses the indications and complications of bariatric surgery as well as several other topics that include omentectomy, post surgery atrial fibrillation, blood transusions, and others.

Hernias: Signs/Symptoms, Management and Surgical Complications
Mark Suckow (Department of Biological Sciences, University of Notre Dame, Notre Dame, IN, USA)
In series: Surgery - Procedures, Complications, and Results
2013. 270 pp.
Hardcover: 978-1-62948-441-9, $150.00.
e-book: 978-1-62948-446-4, $150.00.
Patients affected with a hernia continue to represent a significant clinical population. Resulting from varied causes and associated with an array of pathophysiologies, a hernia can pose marked diagnostic and treatment challenges for the clinician. Sometimes subclinical and sometimes life-threatening, a hernia may require little or substantial medical intervention. This book consists of sixteen chapters by noted clinicians and scientists. Many chapters include background pathogenesis, typical symptoms experienced by patients, diagnostic measures, and therapeutic approaches. Current information is summarized and interpretations offered where appropriate. Basic pathogenic mechanisms and pathophysiology are considered in chapters such as those on the inheritance of a groin hernia (Burchart and Rosenberg), and on alterations in arterial blood gases both before and after surgery (Tsunakw). These chapters make evident both the progress made in understanding the processes underlying hernias and related diseases, as well as the incomplete understanding we have with respect to such processes. Descriptions of clinical presentations, diagnostic approaches, and medical and surgical management are provided for several types of hernias, including inguinal, diaphragmatic, incisional, and Richter’s. The utility of new methods for correction, such as laparoscopy and components separation, is
described in the chapters by Maxwell and Baird, Marescaux et al, Mazzochi et al, and Sabino et al. These chapters reflect the technological improvements that have been brought to the successful treatment of hernias. It is likely that, with time, further definitions and refinements will additionally advance the understanding and approaches to hernias. The goal of this book is to summarize our understanding of basic concepts of hernia, at present, as a reference for scientists and clinicians.

**Hip Replacement: Procedures, Potential Complications and Postoperative Rehabilitation**

*Warren M. Burston*

In series: *Surgery - Procedures, Complications, and Results*


Softcover: 978-1-62808-659-1. $69.00.

Hip osteoarthritis is a highly prevalent health condition among adults worldwide, and hip replacement surgery is the most common intervention for treating disabling end stage hip osteoarthritis. In this book, the authors present current research in the study of the procedures, potential complications and postoperative rehabilitation in hip replacement surgery. Topics discussed include the nature and prevalence of hip replacement surgery among aging adults and the impact of prognostic factors such as age, gender, and body weight; the wear factor in total hip replacement bearing surfaces; hip replacement rehabilitation; forecast factors and management alternatives in hip fracture; and fretting wear at the stem-cement interface in total hip replacement.

**Kidney Transplantation: Lowering Barriers and Expanding Opportunities**

*Sandip Kapur (Department of Surgery, Division of Transplant Surgery, New York-Presbyterian Hospital/Weill Cornell Medical College, New York, NY, USA)*

In series: *Organ Transplantation Research Horizons*


Softcover: 978-1-62808-595-2. $52.00.

Despite significant accomplishments to date, kidney transplantation is a relatively young field in medicine. The shortage of deceased donor organs available for transplantation has led to the need to identify novel strategies to increase the organ donor pool. Due to the armamentarium of agents available to effectively suppress the immune system, the past decade has seen a shift in focus from prevention of rejection to a focus on extending the life of the allograft, with much focus on developing agents and immunosuppression combinations that are less toxic to the transplanted kidney. These concepts provide the framework for this textbook. For the first time in years, agents with novel mechanisms of action are beginning to come to market for use in kidney transplantation, and novel concepts to increase both deceased and living donor organ availability have been adapted by progressive transplant centers. Within the field of living donation, kidney paired donation and single site laparoscopic donor nephrectomy are important methods of increasing access to living donor transplantation. Utilization of expanded criteria, donation after cardiac death, hepatitis C positive, and pediatric donor organs are discussed as methods to increase deceased donor transplant opportunities for the more than 90,000 patients currently on the kidney transplant waiting list in the United States alone.

**Minimally Invasive Skull Base Surgery: Principles and Practice**

*Moncef Berhouma (Department of Neurosurgery B, Neurological and Neurosurgical Hospital, Lyon, France)*

In series: *Surgery - Procedures, Complications, and Results*


Classically defined as the art of curing by the hand, hand intended as the organ of the possible, and positive certitude according to Paul Valery, surgery is shifting toward a scientific discipline with a very high technological valence. Neurosurgery in general, and skull base surgery in particular do not stave off this natural evolution. Obviously, technological advances have driven the tremendous progress in both diagnosis (CT scan, MRI, angiography…) and therapeutic fields (ultrasonic aspiration, radiosurgery…). This technological aspect should not hide the humanistic remnant of the modern neurosurgeon, who should propose the less invasive technique in his possession to treat most efficiently his patient, keeping in mind the quality of life above all. The compromise between the invasiveness of the surgical approach to the skull base and the main goal of the surgery has shed light on the recent concept of minimally invasive skull base surgery. This concept has been conspicuously initiated by Axel Perneckzky in the late 1980’s under the descriptive “keyhole neurosurgery”, especially through the renowned eyebrow supra-orbital mini-craniotomy and the implementation of endoscope-assisted microneurosurgery. A decade after, Jho and others introduced the endoscopic endonasal approach to the skull base, with a perpetual development and an exponential rhythm of scientific publications. This recent paradigm shift toward a minimal approach-related iatrogen coupled with a maximally efficient surgical target is not so clear cut, as pioneering neurosurgeons such as Cushing, Dandy or Dott among others already adopted this philosophy of work, limited by the technology available at that time that did not permit their minimally invasive expectations. This has been possible only with the progresses made in the fields of imaging, surgical instrumentation, illumination technologies (microscope and endoscope, radiosurgery, and neuroanesthesia.

**Minimally Invasive Surgery: Evolution of Operative Techniques, Safety and Effectiveness and Long-Term Clinical Outcomes**

*Frederick T. Hawthorne*

In series: *Surgery - Procedures, Complications, and Results*


Hardcover: 978-1-62948-838-7. $120.00.
e-book: 978-1-62948-839-4. $120.00.

The field of surgery has seen significant changes over the last decade. New surgical techniques in thyroid, parathyroid and adrenal surgery characterized by reduced trauma of access and new technology have heralded minimally invasive techniques that have allowed surgeons to perform operations with results similar to traditional approaches whilst offering advantages in recovery time and cosmesis. This book focuses on topics of minimally invasive endocrine surgery; laparoscopic and robotic colorectal resection for cancer; the right anterolateral thoracotomy technique for patients with simple congenital heart disease; long-term clinical status, quality of life and functional outcomes after laparoscopic approach to achatalasia; the evolution of component separation techniques for massive incisional hernias; the advances towards beating heart surgery; and finally, the operative techniques and outcomes of needlescopic surgery.
Maxillofacial defects may be congenital or acquired and may be caused by surgical interventions for neoplasms. Because of the localizations of these defects, aesthetic problems may occur so it becomes impossible for the patients to continue their daily lives. Losing a part of the face or having a congenital defect may play a negative effect on the social life and psychology of the patient. It also affects the function adversely. Maxillofacial prostheses aim is to maintain the health of the hard and soft tissues and to improve the aesthetics of patients. But completing the process is tiring both for the patient and the prosthodontist. There is a large and rapidly growing literature on maxillofacial prosthodontics in clinical practice. In this book, brief descriptions of recent developments in the maxillofacial practice are discussed. References are provided at the end of each chapter and listed alphabetically. For clinicians, this book provides a broad perspective on prosthodontics, their possible applications and interactions between special clinics, and suggestions about future research topics, which will be helpful to their research. Regardless of your background, whether you’re a prosthodontist or a plastic surgeon, you will find the book appropriate to your needs. In this book, there are basic principles of maxillofacial prostheses and coloring, and information on patients’ ‘perspectives on the prosthetic treatment’. Also discussed is the importance of the prosthodontist-patient relationship. This book will be a guide for the prosthodontist and their approach to the patients.

**Principles of Research: From Idea to Publication**

*Louis H. Toledo-Pereyra (Michigan State University, Kalamazoo Center for Medical Studies, Kalamazoo, MI, USA)*

In series: *Surgery - Procedures, Complications, and Results*


Hardcover: 978-1-62417-968-6. $150.00.
e-book: 978-1-62417-974-4. $150.00.

Interest in surgical research was a decisive factor in the surgical advances seen in the 20th century. From the “stormy petrel” of surgery (John B. Murphy) to the pioneering Mayo brothers and the gifted surgeons who revolutionized cardiac surgery (Drs. Blalock, DeBakey, both Lilleheis, and Wangensteen), surgeons have advanced their practice by carefully planned and conducted studies. The principles of surgical research formulated by these leaders still pertain to the many challenges of contemporary surgery. Research results have a direct benefit when applied to the clinical sciences and patient care. Procedures that were once extraordinary, such as open-heart surgery, are now almost routine. Knowing that research is the basis for evidence-based medicine makes it obvious that interest in research facilitates the understanding and application of evidence-based principles. Principles of Research: From Idea to Publication draws on Dr. Toledo-Pereyra’s extensive experience as a surgeon, teacher, researcher, and research director to present profiles of accomplished scientists who exemplify the best traditions of surgical research.

**Robotic Surgery for the General Surgeon**

*Dmitry Oleynikov and Nathan D. Bills (Nebraska Medical Center, Omaha, NE, USA)*

In series: *Surgery - Procedures, Complications, and Results*


Hardcover: 978-1-62948-955-1. $175.00.

Robotic surgery has revolutionized how surgeons think about minimally invasive surgery in the new century. No longer is robotic surgery only for science fiction novels. Robots can now be used for all types of minimally invasive procedures. In many cases, they bring benefits in ergonomics, visualization, and precision of action. While the current generation of robots is limited, the future is boundless. This book explores common general surgical procedures with the use of the da Vinci® surgical system, describes patient selection, surgical tech, robotic instrumentation and positioning and also guides the general surgeon in understanding robotic surgery and implementing it in their practice.

**Single Best Answer Questions in Cardiothoracic Surgery**

*Shahzad G. Raja (Department of Cardiac Surgery, Harefield Hospital, London, UK)*

In series: *Surgery - Procedures, Complications, and Results*


This first edition of “Single Best Answer Questions in Cardiothoracic Surgery” provides a comprehensive revision aid to the candidates taking the specialty examination in Cardiothoracic Surgery worldwide. This new revision aid provides over 300 single best answer practice questions in Cardiothoracic Surgery and conforms to the recent changes in the format of specialty examinations in Cardiothoracic Surgery. Each question has been carefully formulated to cover an important topic in cardiothoracic surgery. The questions cover the complete examination syllabus and a considerable number of these have been based on previous examination questions. This book contains a substantial number of patient-based questions or clinical vignettes that will enable prospective candidates to test their ability to integrate key basic science concepts with relevant clinical problems. In addition factual recall questions have also been included that probe for basic recall of facts. Detailed and comprehensive explanations, rather than just brief answers, to questions have been provided so that the candidates do not have to consult textbooks for clarification as is the case with most other MCQs books currently available in the market. A list of relevant references is provided at the end of each answer to enable candidates to read the most up to date journal articles on the subject. The questions in this book can be used in a number of ways: (1) as a diagnostic tool (pretest), (2) as a guide and focus for further study, and (3) for self-assessment. The least effective use of these questions is to “study” them by reading them one at a time, and then looking at the correct response. These over 300 practice questions are intended to be an integral part of a well-planned review as well as an isolated resource. If used appropriately, these questions can provide self-assessment information beyond a numeric score. Furthermore, the questions have been planned in such a way that this book can be used as companion to any textbook of Cardiothoracic Surgery.
Chagas Disease: Still a Threat to our World?
Fernanda Ramos Gadelha and Eduardo de Figueiredo Peloso (Biochemistry Department, Universidade Estadual de Campinas, Campinas-SP, Brazil)
In series: Tropical Diseases - Etiology, Pathogenesis and Treatments
2013. 189 pp.
Hardcover: 978-1-62808-681-2. $85.00.
Chagas disease is a parasitosis caused by Trypanosoma cruzi, that affects approximately 10 million people around the world, mainly in Latin America. There are different types of transmission, and in the last few years, due to the increase in human migration, this pathology has been detected in other continents. Awareness that this disease is now found in places far from endemic areas is relevant since it leads to the development of strategies to prevent potential sources of transmission. The disease was discovered 100 years ago, and until now, no vaccine has been developed and the drugs currently in use, benznidazole and nifurtimox, have limited efficacy and potentially serious side effects. Chagas disease patients can have gastrointestinal, heart and nervous system related complications, requiring precise and rapid methods of diagnosis. The biology of T. cruzi has been intensively studied allowing for the translation of basic scientific knowledge into a number of selected drug candidates for the development of a more specific treatment. Coverage of the latest research techniques and advances in the topics mentioned above, and, most importantly, the new therapeutic targets noted for the development of an improved therapy will be discussed.

Detection and Decontamination of Bacillus anthracis Spores in Soil
Violet Imani
In series: Bacteriology Research Developments
Softcover: 978-1-63117-407-0. $52.00.
e-book: 978-1-63117-408-7. $52.00.
The U.S. Environmental Protection Agency (EPA) Office of Research and Development is striving to protect human health and the environment from adverse impacts resulting from acts of terror by investigating the effectiveness and applicability of technologies for homeland security (HS)-related applications. EPA has identified detection of pathogenic microorganisms in environmental samples following a terrorist attack as a critical component of an effective response. Detection of such pathogens would require development and validation of sampling techniques that could be used by multiple laboratories following a homeland security event. The Centers for Disease Control and Prevention (CDC), part of the U.S. Department of Health and Human Services (DHHS), has extensive knowledge of potential biological hazards. In this book, CDC, in collaboration with EPA, developed and improved methods for extraction of Bacillus anthracis (BA) spores from soil. This book also investigates the efficacy of four chemical decontaminants for inactivating Bacillus anthracis (causative agent for anthrax) spores in soil.

Epstein-Barr Virus (EBV): Transmission, Diagnosis and Role in the Development of Cancers
Jan Styczynski (Department of Pediatric Hematology and Oncology, Collegium Medicum, Nicolaus Copernicus University, Bydgoszcz, Poland)
In series: Virology Research Progress
2014.
Hardcover: 978-1-63117-476-6. $150.00.
The Epstein-Barr Virus (EBV), also known as Human Herpes Virus 4, has been identified and described as the etiological agent of infectious mononucleosis. It is the first human virus found to be implicated in oncogenesis. EBV is associated with a number of biologically diverse cancers, mainly lymphoproliferations of B-cell origin. With the development of basic research and clinical medicine, new ideas related to the pathogenesis and clinical aspects of EBV-associated diseases have arisen recently. A significant progress in the number of hematopoietic stem cell and solid organ transplantations performed worldwide, involving high-risk patients, has contributed to an increase in the development of EBV-associated malignant post-transplant lymphoproliferative disorders. In the stem cell transplant setting, a post-transplant lymphoproliferative disorder has in most cases the nature of a secondary cancer. Apart from post-transplant lymphoproliferative disorders, other types of lymphoproliferative disorders are recognized and presented in this book.

Virology
Advances in Viral Genomes Research
John A. Borrelli and Ylenia D. Giannini
In series: Genetics - Research and Issues
2013. 133 pp.
Softcover: 978-1-62808-723-9. $72.00.
Viral diseases have an important impact on public health worldwide. New genomic technologies are providing infectious disease scientists with a unique ability to study at the genetic level those viruses that cause disease and the interactions they have with infected hosts. In this book, the authors present new research in viral genomes. Topics include improvements in HSV-1 derived amplicon vectors for gene transfer; viral genome research in papillomavirus; the synthetic synthesis of viral genomes; and a novel bioinformatic method to analyze more than 10,000 influenza virus strains simultaneously.

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Journey through the World of Malaria
Abubakar Yaro (Africa Health Research Organization, Cantonments, Accra Ghana)
In series: Allergies and Infectious Diseases
2014.
Our understanding of the pathogenic mechanisms of the malaria parasite has accumulated over the years with the advent of genomic knowledge playing a crucial role. Although great strides have been made in the field of malaria research, malaria still remains one of the most important public health issues in the world. Years ago, malaria was eradicated in some countries but global warming is playing a part in the spectacular re-emergence of malaria in some of these countries. There is still no effective vaccine, although some research has provided interesting data and anti-malaria drug resistance is the time bomb that has the potential of detonating the field of malaria research. Funder fatigue is now derailing the progress made over the years, which makes the field of malaria research look a bit gloomy. This book reviews the most important findings associated with malaria research over the couple of years with a timely overview. The topics covered include historical perspectives of the field of Malariology, life cycle of the parasite, recent advances in the epidemiology of malaria, pathogenesis with sub topics such as the parasite and immune system, virulence factors and clinical manifestations analyzed in detail. The updated antimalarial drug treatment, development and resistance are also discussed in detail. Finally, the social and economic burdens of malaria are looked at and various potential control strategies are put forward. This book will be essential to everyone interested in infectious diseases.
Viral Infections: Causes, Treatment Options and Potential Complications
Deborah Shinn
In series: Virology Research Progress
Hardcover: 978-1-63117-221-2, $150.00.

Viral infection is a disease caused by microorganisms, which invade a living cell and use its mechanisms to reproduce. Viruses need to colonize a host organism in order to fulfill its vital functions because it lacks the biochemical organizations that replication requires. This book discusses several topics that include viral infections in obstetrics and gynecology; the management of HIV infection by Chinese medicine; antiviral activity of lactoferrin; and antiviral effects of phytochemicals of the Mediterranean medicinal plants.
SCIENCE AND TECHNOLOGY
AGRICULTURE

Agricultural Issues and Policies. Volume 4
Lindsey K. Watson
In series: Agricultural Issues and Policies
Hardcover: 978-1-62948-618-5, $110.00.
Agriculture is one of the defining elements of a nation. This series consists of analyses on a variety of agricultural issues including (but not limited to) the developments, policies, programs, trade, trends and economics of agriculture. Topics will be seen from a U.S. perspective, but not to the exclusion of other countries particularly when the discussion has an international scope. Topics discussed in this issue include the background, status, and issues related to selected environmental regulations or initiatives possibly affecting agriculture; agricultural export programs; bee health; the legal and administrative responses to deregulating genetically engineered alfalfa and sugar beets; and the economic benefits to agriculture and rural communities by fixing our immigration system.

Agricultural Research Updates. Volume 6
Prathamesh Gorawala and Srushti Mandhari
In series: Agricultural Research Updates
Hardcover: 978-1-62948-377-1, $150.00.
This compilation examines agricultural research from across the globe and covers a broad spectrum of related topics. In this book, the authors discuss research including the impacts of the Fukushima nuclear disaster on Japanese agriculture and food chains; plant nutrients, plant growth retardants, and cotton production; response of olive trees to deficit irrigation regimes; improving selectivity in trawl fisheries; grazing management of native and naturalized pastures in harsh environments; sustainable grazing systems for the enhancement of livestock production and biodiversity in less-favored heathland areas of northern humid Spain; genomic organization and comparative analysis of the genome of domesticated animals and poultry; and in-depth studies of cattle-manure-compost activated carbons for Cu(II) ions removal.

Agricultural Systems in the 21st Century
Amir Raza (Nuclear Institute of Agriculture (NIA), Pakistan)
In series: Global Agriculture Developments
Hardcover: 978-1-62808-992-9, $150.00.
e-book: 978-1-62948-026-8, $150.00.
Agriculture in this century is confronted with the challenges of ensuring global food security. Diminishing land and water resources, a rapid increase in population particularly in developing countries, and onset of climate change are the key limitations towards sustainability of the agriculture sector. The situation demands that we address the problems of agriculture using a system approach. This is a comprehensive book outlining the issues being faced by the agriculture sector worldwide. The book covers diversified topics including water scarcity, food security, international research collaboration, sustainable agriculture, soil erosion, weed management, micro nutrients, biotechnology, investment in research, sustainable viticulture and desertification. The key theme of the book is achieving food security at the national and global scale. Various dimensions of food security are addressed simultaneously while analyzing the effect of population, water scarcity, sustainable agriculture and desertification in detail. Case studies from Pakistan, Russia, the Philippines and Portugal are presented with national focus and their implications at the global level. Each chapter presents state-of-the-science synthesis on the subject matter and solutions to the specific problems. Chapters include contributions from vastly experienced scientists in their area of expertise. This book can be of particular interest for students, professors, researchers, farmers and policy makers who intend to have a food secure 21st century.

Agriculture and Energy: Evolving Relationships and Issues
Edgar N. Jenkins
In series: Agricultural Issues and Policies
In series: Energy Policies, Politics and Prices
2013. 192 pp.
Hardcover: 978-1-62948-019-0, $110.00.
e-book: 978-1-62948-020-6, $110.00.
Rising energy prices and changing energy and environmental policies have transformed the relationship between the energy and agriculture sectors. Traditionally, the relationship has been one-way, with agriculture using energy products as an input in production. During the past decade, however, the energy sector’s use of agricultural products as renewable-fuel feedstocks has increased substantially. This book examines both sector and farm-level responses to changing market and policy drivers such as the increased production of biofuel crops and other sources of renewable energy, together with changes in production practices to economize on energy-based inputs like fertilizer. Insight is provided into how farmers have adapted to the changes and new data on the evolving linkages between the energy and agriculture sectors is explored.

Barley: Physical Properties, Genetic Factors and Environmental Impacts on Growth
Kohji Hasunuma (Professor Emeritus, Kihara Institute for Biological Research, Yokohama City University, Japan)
In series: Agricultural Research Updates
Hardcover: 978-1-62948-904-9, $150.00.
e-book: 978-1-62948-907-0, $150.00.
Barley is one of the earliest crops to be domesticated and its cultivation since the beginning of the 21st century, provides new utilities for the nutrition and sustainable development. It is one of the largest source crops used in the production of fodder, alcoholic beverages, biofuels and healthful foods. This book focuses on several topics that include the organic breeding and cultivation of barley; the biological characteristics of spring barley varieties in the far east of Russia; the barley husk; the grain and endosperm biophysical characteristics of barley malting; the vacuolar H+ -PPase genes in barley; the application of barley in cereal technology; the abiotic stress response in barley and the emergent roles of microRNAs; the dynamics of oxidative processes and activation of antioxidant systems in barley leaves under drought condition of soil; and the isolation of high-yielding paraquat-resistant lines of Hordeum vulgare CV fiber snow.
Bioproduction Engineering: A Road Map for Sustainable Agricultural Practices
Tofael Ahamed, Tomohiro Takigawa, Noguchi Ryozo (Graduate School of Life and Environmental Sciences, University of Tsukuba, Ibaraki, Japan) and Lei Tian (Department of Agricultural and Biological Engineering, University of Illinois at Urbana-Champaign, IL)
In series: Global Agriculture Developments

In series: Biotechnology in Agriculture, Industry and Medicine
This book addresses the important question of how large a role bioproduction and renewable energy can play in achieving sustainable agricultural practices in the present system of agricultural production. Understanding bioproduction engineering and development can help improve the efficiency of sustainable agriculture and future renewable energy resources. With the aim of understanding this question, this book focuses on bioproduction and sustainability issues, covering sensors, agricultural decision making systems and the relationship between bioproduction and sustainable practices of agriculture. Topics discussed include information oriented technology that can be implemented to address the variability of bioproduction systems; sensors and control systems; precision agricultural technology; decision support systems in agriculture; renewable energy resources; and analytical hierarchy processes for agricultural management. This material will appeal to a wide range of readers and is designed as a resource for graduate and undergraduate students working in any area of agricultural engineering, crop sciences, or environmental science disciplines. The book also includes questions and sample model problems to allow readers to practice implementing the modeling tools.

Conservation in Agriculture: Water Demands, Irrigation, and Drought Adaptation
Dennis Hisson and Alan S. Theiss
In series: Agriculture Issues and Policies
In series: Water Resource Planning, Development and Management
Hardcover: 978-1-62808-434-4. $110.00.
Population and economic growth, changing social values about the importance of water quality and the environment, and Native American water-right claims will continue to drive growing U.S. demand for water resources. Expansion of the U.S. energy sector is expected to further increase regional demands for water. At the same time, projected climate change, through warming temperatures, shifting precipitation patterns, and reduced snow-pack, is expected to reduce water supplies and increase water demand across much of the West. These trends are placing greater pressure on existing water allocations, heightening the importance of water management and conservation for the sustainability of irrigated agriculture. This book draws on several USDA agricultural production and water-use analyses and surveys, as well as an extensive literature review, to describe the U.S. irrigated agriculture sector, existing and emerging water demands, trends in water-use efficiency in irrigated agriculture, and funding levels (private and public) for farm-level irrigation investments.

Farm Programs: Preventing Payments for Excessive Incomes and Deceased Individuals
Edward A. Roeder
In series: Agriculture Issues and Policies
2013. 87 pp.
Softcover: 978-1-62948-622-2. $52.00.
In light of high farm incomes and constrained federal budgets, the cost of federal farm and conservation programs, about $15 billion annually from 2009 through 2012, has come under scrutiny. Under the 2008 Farm Bill, participants whose incomes exceed specific limits are ineligible for certain program payments. The USDA’s Farm Service Agency (FSA) makes income eligibility determinations for programs it administers and also for conservation programs administered by the Natural Resources Conservation Service (NRCS). The FSA verifies that participants have incomes below the limits by reviewing either tax returns (with consent from participants) or statements from accountants or attorneys. The Government Accountability Office (GAO) was asked to review FSA’s income verification practices. Another concern has been the distribution of benefits to ineligible participants, including potentially improper payments to deceased individuals, which, as the GAO and others have reported, may call into question whether these farm safety net programs are benefiting the agricultural sector as intended. This book examines the FSA’s (1) review of tax returns and (2) review of accountants’ and attorneys’ statements and (3) FSA’s and NRCS’s recovery of payments to participants who exceeded income limits and (4) the extent to which procedures are in place to prevent the FSA and NRCS from making potentially improper payments to deceased individuals.

Forest Service Trails: Maintenance and Sustainability Issues
Adam D. Faydeu
In series: Agriculture Issues and Policies
In series: Environmental Research Advances
Softcover: 978-1-62808-834-2. $52.00.
The Forest Service manages more than 158,000 miles of recreational trails offering hikers, horseback riders, cyclists, off-highway-vehicle drivers, and others access to national forests. To remain safe and usable, these trails need regular maintenance, such as removal of downed trees or bridge repairs. This book examines (1) the extent to which the Forest Service is meeting trail maintenance needs, and effects associated with any maintenance not done; (2) resources, including funding and labor, that the agency employ to maintain its trails; (3) factors, if any, complicating agency efforts to maintain its trails; and (4) options, if any, that could improve the agency’s trail maintenance efforts.

Global Agriculture: Developments, Issues, and Research. Volume 4
Marvin R. Robertson and Jeffrey J. Schmidt
In series: Global Agriculture: Developments, Issues, and Research
Hardcover: 978-1-62948-017-6. $110.00.
This book explores the developments, issues and research outlook of global agriculture. Topics discussed in this compilation include the policy, technology, and efficiency of Brazilian agriculture; Southeast Asia’s rice surplus; and specialty crop access to U.S. markets and a case study of Indian mangoes.
Handbook on Herbicides: Biological Activity, Classification and Health & Environmental Implications
Daiki Kobayashi and Eito Watanabe
In series: Global Agriculture Developments
Hardcover: 978-1-62948-053-4. $150.00.
e-book: 978-1-62948-054-1. $150.00.

In this handbook, the authors present current research in the study of the biological activity, classification and health and environmental implications of herbicides. Topics discussed include productive degradation of dichlorprop by transconjugant strains; weeds and their mechanisms of resistance to herbicides; application of 31P-NMR spectroscopy to glyphosate studies in plants; lethal and sublethal glyphosate effects on non-target fish species; chemical properties and genotoxic effects of phenylurea herbicides; action mode of triazines and toxic effects on vertebrates; photolysis experiments on alachlor and glyphosate; and biological responses of bamboo to its transformation product; glyphosate-resistant weeds in Southern Europe; herbicide paraquat genotoxicity-enhancement by the phenolic antioxidants DI-A-tocopherol and 2,6-Di-Tert-Butyl-P-Cresol; glyphosate adsorption in a soil depth profile; adsorption-desorption processes and mobility of (4-Chloro-2-Methylphenoxoy) acetic acid (Mcpa) in Irish grassland soils; pesticides and cancer with a study on the interaction of phenoxy acid herbicides with DNA; herbicidal activity of pyrazole derivatives; behavior of herbicides in paddy water and soil after application; and laboratory lysisimeter for pesticide transport studies.

Honey Bees and Colony Collapse Disorder: Select Analyses
Ayden N. Caudill
In series: Agriculture Issues and Policies
In series: Insects and Other Terrestrial Arthropods: Biology, Chemistry and Behavior
Softcover: 978-1-62808-286-9. $52.00.

Starting in late 2006, commercial migratory beekeepers along the East Coast of the United States began reporting sharp declines in their honey bee colonies. Because of the severity and unusual circumstances of these colony declines, scientists named this phenomenon colony collapse disorder (CCD). Reports indicate that beekeepers in most states have been affected. Overall, the number of managed honey bee colonies dropped an estimated 35.8% and 31.8% in the winters of 2006-2007 and 2007-2008, respectively. To date, the precise reasons for colony losses are not yet known. Honey bees are the most economically valuable pollinators of agricultural crops worldwide. Scientists at universities and the USDA frequently assert that bee pollination is essential to the production and consumption of a wide range of fruits, vegetables, tree nuts, forage crops, and specialty crops. The median value of honey bee production in the U.S. is estimated at $15-20 billion annually. This book provides an overview of the importance of honey bee pollination to U.S. agricultural production and the extent and symptoms of CCD and how it differs from previous honey bee colony losses. Also discussed are the policy options and actions that Congress has taken to address this issue.

Potatoes: Production, Consumption and Health Benefits
Claudio Caprara (University of Bologna, Italy)
In series: Agriculture Issues and Policies
Hardcover: 978-1-62100-703-6. $140.00.
Softcover: 978-1-63117-151-2. $89.00.

This book presents an overview of the cultivation of the potato, pointing out some aspects in relation to its production, consumption and importance for consumer health. The aim is to offer a glimpse of the potential of the forest rather than the single tree, but not failing to focus on "a few trees." The approach is interdisciplinary, and in this sense the history and the climatic aspects that favour cultivation are highlighted first, ideally starting with contributions on the South-America and then moving eastwards, following the diffusion of the potato in the rest of the world. Some technological aspects are then tackled linked to cultivation, harvest, postharvest, production and utilization of potatoes. Lastly some aspects are dealt with, nutritional and not, relating to the importance of potatoes on the health of the consumer.

Seeds as Functional Foods and Nutraceuticals: New Frontiers in Food Science
Rosalva Mora-Escobedo, Jose De J. Berrios and Gustavo Fidel Gutierrez Lopez (National Polytechnic Institute, National School of Biological Sciences, Prol. Carpio y Plan de Ayala, S/N Col. Sto. Tomás, México)
In series: Food Science and Technology
Hardcover: 978-1-62808-489-4. $175.00.

The attention and direction of food science has been shifting in recent years from food safety and food flavor research to functional foods and nutraceuticals – foods that convey healthy and disease-prevention benefits to consumers that go way beyond their basic nutritional role. The purpose of this book is to bring together the latest information from fundamental and applied research on the role of seeds and their products as functional foods and nutraceuticals, and to discuss the benefits of consuming them. In this book you will find relevant information regarding the origin and taxonomy of seeds, global markets, physicochemical composition, and the effect of phytochemicals in seed components on chronic degenerative diseases, such as obesity, diabetes, cancer, cardiovascular disease, inflammation and arthritis. Given the importance and challenges derived from environmental concern, with regard to the effective utilization of the residues of industrial by-products and agroindustrial wastes, this book also discusses the inclusion of seeds and certain fruit by-products in foods, as well as the presence of phytochemicals with potential medicinal benefits.

Sustainable Rural Communities: Federal Programs, Resources, and Case Studies
Mohamed Pelletier
In series: Agriculture Issues and Policies
Softcover: 978-1-62808-733-8. $52.00.
e-book: 978-1-62808-734-5. $52.00.

Rural communities across America are working to strengthen their economies, provide better quality of life to residents, and build on assets such as traditional main streets, agricultural and working lands, and natural resources. The Partnership for Sustainable Communities, in collaboration with the U.S. Department of Agriculture (USDA), established a Rural Work Group to reinforce these initiatives and ensure that the four agencies’ spending, policies, and programs support rural communities’ efforts to be economically vibrant and environmentally sustainable. Strengthening federal support for rural communities by coordinating and aligning these programs is a key Partnership goal. In August 2010, the Partnership established a Rural Work Group comprised of staff from HUD, DOT, EPA, and USDA to guide its approach to rural sustainable communities. This book, which summarizes the work group’s efforts, explores how the Partnership can contribute to more resilient economies, healthy environments, and
quality of life in rural America. It also sets out a framework for the Partnership’s future work with rural communities.

Women-Operated and Family Farms in the United States: Characteristics and Trends
Julian Wallace and Andrea Marshall
In series: Agriculture Issues and Policies
Hardcover: 978-1-62808-430-6. $110.00.
Farms and ranches operated by women have more than doubled in the last 30 years. Since 1978, the first year the Census of Agriculture collected data on the gender of farmers, the share of women-operated farms has grown from 5 percent of U.S. farms to 14 percent. The number of women-operated farms increased in all sales classes (based on annual sales, with adjustments for price changes). In contrast, farms operated by men declined substantially, with only the largest and smallest sales classes ($500,000 or more and less than $1,000) increasing. This book examines various characteristics of women farm operators and their farms, including: changes in the distribution of women-operated farms and ranches by sales class; age, education, and off-farm work and income of women principal operators; financial performance of women-operated farms; farm and operator characteristics by commodity specialization; and sources of Government payments to women-operated farms.

Daphnia: Biology and Mathematics Perspectives
M. El-Doma (Faculty of Mathematical Sciences, University of Khartoum, Khartoum, Sudan)
In series: Animal Science, Issues and Professions
2014.
e-book: 978-1-63117-030-0. $230.00.
The purpose of this book is twofold: on one hand, it gives a mathematical perspective of Daphnia which comprises studies focusing on introducing size-structured population dynamics models of Daphnia and their unification, as well as developing and analyzing mathematical models of size-structured population dynamics of several species of Daphnia. These include proving the well-posedness of the model and related regularity properties, determining the steady states and proving the principle of linearized stability and studying the (in)stability of the steady states. The mathematical perspective of Daphnia is written at a research level and it is intended for researchers in applied mathematics, differential equations, biomathematics, mathematical biology, mathematical ecology as well as graduate students in the above mentioned fields of research. The necessary background for reading the chapters is the knowledge of ordinary differential equations, partial differential equations, integral equations and functional analysis. On the other hand, this book also provides a biological perspective of Daphnia by focusing on topics such as: the swimming behaviour, inducible defense mechanisms in order to avoid predation, sexual reproduction, the use of Daphnia as a classroom organism and the role of Daphnia in ecotoxicological evaluations of contaminants. In addition, it contains several video movies attached to some chapters. The biological perspective of Daphnia is written at a research level and intended for researchers in biology, chemistry, ecology and environment as well as graduate students in the above-mentioned fields of research.

Drosophila melanogaster: Genome Evolution, Behavior and Economic Importance
Jessika L. Regan
In series: Insects and Other Terrestrial Arthropods: Biology, Chemistry and Behavior
2014.
Softcover: 978-1-63117-515-2. $72.00.
Drosophila melanogaster is a species of fly in the family drosophilidae. It is generally known as the common fruit fly or vinegar fly. The use of Drosophila melanogaster in biological sciences has spanned over 100 years. Its history has a promising beginning, where D. melanogaster become one of the most popular models for studies involving modern biology. The fly is small and yellow-brown, with brick red eyes and transverse black rings across the abdomen. Although it has a relatively simple body structure, Drosophila has a number of characteristics which make it a suitable model for studying host interactions with important human pathogens. The contributors of this book discuss genes linked to species diagnostic phenotype in Drosophila; Drosophila melanogaster and how it relates to human malignancies; and Drosophila melanogaster as a host model for studying the pathogenesis and host-pathogen interaction of the Staphylococcus aureus infection.

Honeybees: Foraging Behavior, Reproductive Biology and Diseases
Cameron Malloy
In series: Insects and Other Terrestrial Arthropods: Biology, Chemistry and Behavior
2013. 189 pp.
Hardcover: 978-1-62948-660-4. $120.00.
e-book: 978-1-62948-661-1. $120.00.
Honeybees are a subset of bees in the genus Apis, primarily distinguished by the production and storage of honey and the construction of perennial, colonial nests out of wax. In this book, the authors present current research in the study of the foraging behavior, reproductive biology and diseases relating to honeybees. Topics discussed include research into diseases affecting honeybees; the status of bee health and colony losses in Argentina; situational choices among alternative visual stimuli in honeybees and paper wasps when foraging; regulation of the crop content for foragers upon departing the hive; sex differences of dopamine control systems associated with reproduction in honeybees; and the roundtrip-structure of the foraging honeybee (Apis mellifera).

Invasive Species: Selected Laws and the Role of Federal Agencies
Cecilia Kimble
In series: Animal Science, Issues and Professions
Hardcover: 978-1-63117-370-7. $110.00.
An “invasive” species (alternatively known as an alien, exotic, injurious, introduced or naturalized, non-native, nonindigenous, nuisance or noxious species) refers to an animal or plant that is introduced into an environment where it is not native. The introduction of invasive species to the United States—whether deliberate or unintentional—from around the globe can pose a significant threat to native animal and plant communities. It may result in extinctions of native animals and plants, species disruptions as native and non-native species compete for limited resources, reduced biodiversity, and altered terrestrial or aquatic habitats. This book provides an overview of the federal laws and directives in the United States that govern invasive species, and the role of selected federal agencies. This book also examines the Lacey Act which addresses illegal wildlife trade to
protection species at risk and bars importing species found to be injurious to the United States.

**Mammary Glands: Anatomy, Development and Diseases**
Edmund B. Rucker

*In series: Veterinary Sciences and Medicine*
Hardcover: 978-1-62948-853-0, $150.00.
e-book: 978-1-62948-856-1, $150.00.

This book is a compilation of manuscripts that encom-pass a breadth of information from different species including rodents, dogs, cows, goats, and sheep. Normal developmental processes are covered and anatomical features are discussed, as well as the impact and significance of environmental chemicals and epigenetics on the mammary gland. In terms of disease states, cancer and mastitis are the most impactful in the fields of human medicine and livestock management, respectively, in the context of mammary gland biology. Therefore, this book presents in depth analyses of these diseases over several chapters and different model systems. Rodent and canine cancer models are discussed, which are very relevant in understanding the roles that genes and the environment play in human breast cancer. In the livestock industry, mastitis in the dairy sector has a deep economic impact globally, and results in over a billion dollar loss annually. Several chapters are devoted towards this disease in dairy cattle, sheep and goats, with an underlying theme of generating newer detection strategies to detect infections at an earlier stage. An up-to-date description of the most important signaling pathways and mechanisms that impact both development and disease are included. A gamut of sub-disciplines are found throughout the book that covers the main aspects of anatomy, physiology, cell biology, genetics, and molecular biology in both development and diseases of the mammary gland.

**Rabbits: Biology, Diet and Eating Habits and Disorders**
Gianni Adamo and Albert Costanza

*In series: Animal Science, Issues and Professions*
2013. 146 pp.
Hardcover: 978-1-62948-267-5, $95.00.

In this book, the authors present current research in the study of the biology, diet, eating habits and disorders of rabbits. Topics discussed in this volume include the rabbit brain as a model of structural neuroplasticity; a survey on the studies of rabbit prion proteins; the effect of reduced dietary consistency on the fiber properties of rabbit jaw muscles; the use of rabbits to investigate the pathogenesis of disease; the assessment of sperm DNA damage in rabbits using the Halomax assay; nutritional effects of plant oil and seeds in rabbit feeding; and current studies on the etiology of obstructive dysfunction of the male rabbit urinary bladder.

**Sexual Plasticity and Gametogenesis in Fishes**
Balasubramanian Senthilkumaran (Department of Animal Sciences, School of Life Sciences-Centre for Advanced Studies, University of Hyderabad, Hyderabad, AP State, India)

*In series: Fish, Fishing and Fisheries*
In series: Marine Biology
Hardcover: 978-1-62618-848-8, $230.00.

Sex determination, differentiation and gamete maturation are well organized molecular events in vertebrates. In vertebrates, sex determination and differentiation are two important events in the development of gonads (testis or ovary). Sex determination is the genetic (sex chromosomes) or environmental process by which the sex (male or female) of an individual is established. During embryonic development, primordial germ cells migrate from the site of origin to the gonadal primordia where they differentiate along with somatic cells and finally form the indifferent/bipotential gonads. Depending on the action of various factors the bipotential gonads give rise to either testis or ovaries. In most vertebrates, excluding fishes and some amphibians, the event of sex determination is controlled genetically and later the progression of gonadal development is controlled by hormones and other factors. Interestingly, these processes in fishes are controlled not only genetically but also through hormones or environmental factors. These characteristics make fish the champions of sex reversal and serve as excellent animal models to precisely understand sexual development. The next interesting aspect is meiotic maturation which is essentially mediated by gonadotropins and progesterone metabolites to trigger final gamete maturation in fishes which is different from mammals. The novel aspects pertaining to gamete maturation has been studied in great detail in fish which depicts precise regulatory events of gamete maturation.

**Vertebrate and Invertebrate Animal Approaches**
José Rosa Gomes

*In series: Animal Science, Issues and Professions*
Hardcover: 978-1-63117-102-4, $150.00.
e-book: 978-1-63117-103-1, $150.00.

This book is comprised of important contributions from expert researchers around the world concerning the biology of animals from a variety of approaches. In particular, there are manuscripts that deal with cellular, biochemical, genetic, reproductive, and ecological themes including various manuscripts regarding invertebrate animals. Regarding this last animal class, the science provides excellent models to study a lot of biological processes that can explain the evolution and diversity of life on the earth’s surface. They are simple organisms, the studies of which can contribute to explanations of how the metabolic processes found in vertebrates and humans started and have been maintained. This book also provides results that demonstrate some effects and interactions among environmental conditions and drugs on the morphology and biochemical processes in cells, and it contains reviews concerning the interaction between pathogenic invertebrates and human diseases. The aim of these studies was to provide important results that are not commonly treated in traditional and experimental models within the current scientific scene.

**BIOCHEMISTRY**

**Biogeochemistry of Thermokarst Lakes of Western Siberia**
O.S. Pokrovsky, L.S. Shirokova and S.N. Kirpotin (CNRS, University of Toulouse, France; Institute of Ecological Problems of the North, UroRAS, Arkhangelsk, Russia and Tomsk State University, Tomsk, Russia)

*In series: Biochemistry Research Trends*
Hardcover: 978-1-62948-567-6, $85.00.

This book described the current status and possible future changes of the thermokarst (thaw) lakes of western Siberia as dominant forms of landscape and regulators of greenhouse gas exchange within the atmosphere. Thawing permafrost and resulting microbial decomposition of previously frozen organic carbon is one of the most significant terrestrial ecosystem positive feedbacks to a warming
climate. Ongoing processes of the permafrost thawing in Western Siberia are likely to increase the surface of water bodies via forming so-called thermokarst lakes, mobilizing the organic carbon (OC) from the soil pool to the rivers and, finally, to the ocean, and thus modifying the fluxes of methane (CH4) and CO2 to the atmosphere. Despite their tremendous importance for green house gases regulation and hydrological regime control, very little is known about hydrochemistry of western Siberian thaw lakes. This book assesses the variation of major and trace elements (TE) and organic carbon (OC) concentration along the chronosequence of lake development and the latitude profile of variable permafrost abundance; characterizes the colloidal status of TE and distinguishes between the relative proportion of organic and organo-mineral colloids; describes the particularity of microbiological composition of thermokarst lake waters and production/mineralization processes in the water column; and presents the perspective of water chemical composition evolution under the climate change scenario. Each of these aforementioned objectives present a scientific challenge given mainly the paucity of existing information on these important but still very poorly studied ecosystems. Taken together, understanding of these issues and identification and quantification of controlling environmental parameters should produce conceptually new knowledge of biogeochemical processes operating within the Western Siberian Plain with the possibility of extrapolation of generated knowledge to much larger territories of arctic and subarctic permafrost-affected areas.

Citric Acid: Occurrence, Biochemistry, Applications and Processing

Douglas Sackett
In series: Biochemistry Research Trends
2014. 130 pp.
Softcover: 978-1-63117-237-3, $72.00.
e-book: 978-1-63117-238-0, $72.00.
Citric acid is traditionally produced by fermentation of molds since the beginning of the 20th century. However, its overall demand continually increases due to its very widespread applications ranging from traditional food use to more specific pharmaceutical and more recent biopolymer uses. Therefore the production of citric acid is also continually improved involving the most recent tools and techniques of the field. This book discusses the metabolism of citric acid production by Aspergillus niger; biotechnological productions of citric acid; citrus fruits compounds and aging; occurrence and metabolism of citric acid by lactic acid bacteria from fruits and fermented beverages; and citric acid treatment of cancer.

Glycogen: Structure, Functions in the Body and Role in Disease

Pedro L. Weiss and Brian D. Faulkner
In series: Biochemistry Research Trends
Hardcover: 978-1-62948-395-5, $95.00.
e-book: 978-1-62948-396-2, $95.00.
Glycogen is a multibranched polysaccharide that serves as the cellular energy storage in animals, fungi, and humans. In this book, the authors present research in the study of the structure, functions in the body and role in disease of glycogen. Topics discussed include the epidemiology, pathophysiology and genetics of Glycogen Storage Disease Type II (GSDII); glycogen metabolism during chronic liver diseases; muscle and liver glycogen in helminth-infected fish; and glycogen metabolism enzymes as molecular targets for drug development.

Green Chemistry

Rafael Luque (Universidad de Cordoba, Spain)
In series: Chemistry Research and Applications
Hardcover: 978-1-61324-877-5, $140.00.

Nanotechnology, energy and the environment are three key hot topics included in green technologies present in all international challenges for the future. The urgency to identify and develop sustainable and timely solutions for our future society is demonstrated due to the alarming trends in global energy demand, the finite nature of fossil fuel reserves, the need to dramatically curb emissions of greenhouse gases (GHG) to mitigate the devastating consequences of climate change, the damaging volatility of oil prices and the geopolitical instability in supplier regions. This book examines several of these topics related to green chemistry in a multidisciplinary and unique book which covers the essence of green chemical technologies. The book also features top contributions from well-established and respected authors in worldwide research programs.

Ligands: Synthesis, Characterization and Role in Biotechnology

Paula Gawryszewska and Piotr Smoleński (Faculty of Chemistry, University of Wroclaw, Wroclaw, Poland)
In series: Biochemistry Research Trends
Hardcover: 978-1-63117-143-7, $175.00.
e-book: 978-1-63117-146-8, $175.00.
To meet the search for new therapeutic compounds this book summarizes the research on biologically active organic molecules (chapters 1, 2 and 3), metal complexes with biological activity (chapter 4), and shows the possibilities for coordination chemistry in the planning of metal complexes with interesting properties for application (chapters 5, 6, 7, 8, and 9). It should be remembered that in the design of a new potentially active metallodrug, beyond the nature of the metal, the choice of appropriate ligands which affect the thermodynamic and kinetic stability, as well as the solubility and lipophilicity of the complexes is of paramount importance. The information contained in the book concerns: 1) the interactions involving the members of the Nuclear Receptor superfamily and their ligands; 2) the role of chemokine ligands and their receptors in normal and disease processes, and the emerging therapeutic approaches of using chemokine antagonists for appropriately targeted therapy; 3) the inhibition of alkaline phosphatases by calix[4]arenes functionalysed at the macrocyclic upper rim by one or two methylenebisphosphonic acid fragments; 4) the main biological applications, enzyme modelling and antiproliferative and antimicrobial activity of such scorpionate-type complexes, which are classified by ligand and also by transition metal; 5) the silver(I) discrete and polymeric coordination compounds bearing 1,3,5-triazal-7-phosphaadamantane or its derivatives towards engineering functional silver-organic frameworks (MOFs); 6) aryldiazidylene of methylene active nitriles and their use as starting materials for the generation of new organic and coordination compounds; 7) amidophosphate ligands as promising sensizers of lanthanide ions emission; 8) N-acetylsalicylhydrazidate as a versatile ligand for the synthesis of higher nuclearity metal complexes, which are illustrated herein along with their applications; 9) the chemistry and some applications of formazans which can be used for the simultaneous selective determination of several metal cations. All chapters were compiled by renowned scientists, providing both beginners in the field and advanced researchers with comprehensive information on the subject.

Lignin: Structural Analysis, Applications in Biomaterials and Ecological Significance

Fachuang Lu (Biochemistry Department, and Great Lakes Bioenergy Research Center, University of Wisconsin-Madison, Wisconsin Energy Institute, Wisconsin, US)
In series: Biochemistry Research Trends

The use of biologically derived polymers is emerging as an important component of sustainable economic development. Technical lignins, derivatives from naturally occurring lignin polymers in woody plants, are generated commercially in large quantities—up to 70 million tons worldwide annually. Besides being burned as fuels, only a small percentage of these lignins are used for various applications because technical lignins present relatively unpredictable structural characteristics and are therefore unreliable feedstocks to make products with consistent and satisfactory quality. Over the past two decades, there has been great progress in the research and commercialization of lignin-based products and processes that add significant value to lignins. This book provides critical reviews and the latest research results relating to selected fields of lignin structural analysis and applications. Featuring the significant advances in selected topics of the lignin research field, this reference book is for college students and scientists with the intent of promoting further research and innovations in this specialized field.

Molecular and Supramolecular Bioinorganic Chemistry. Applications in Medical and Environmental Sciences. Volume 4

Ana Lucia Ramalho Mercê and Maria Ángeles Lobo Recio (Universidade Federal do Paraná, Curitiba – PR – Brazil)

In series: Biochemistry Research Trends
In series: New Developments in Medical Research
This book focuses on the newest information on metal ion contaminations and the influence of some of them in neurological diseases, a subject still not completely understood in the scientific literature so far. The book presents an extensive review on the aluminum forms of intoxication in humans and the role of this metal ion in human pathobiology by presenting live cases experienced in hospitals and discussing similar data; a review on the recent findings of the role of aluminum, zinc and copper in neurological disorders based on the chemical and bioinorganic aspects of these metal ions; a review on the genotoxic effects of the metal ions aluminum, iron and manganese either in vivo and in vitro results; information concerning arsenic and its structural effects on the human erythrocyte and some complementary model studies, and provides a study on coffee cultures in contaminated soils and its influence on human health.

New Developments in Calcium Signaling Research

Masayoshi Yamaguchi (Department of Hematology and Medical Oncology, Emory University, School of Medicine, Atlanta, Georgia, USA)

In series: New Developments in Medical Research
Hardcover: 978-1-62948-601-7. $85.00.

The calcium metabolism in the living body is skillfully regulated through calcium-regulating hormones, including the parathyroid hormone, active vitamin D3 metabolite and calcitonin. The blood calcium concentration is ten thousand-fold compared with the levels in cells. Cells use extracellular calcium to regulate cell function efficiently. Intracellular calcium homeostasis is exactly regulated through the mechanism related to various calcium transport systems in cells. Signal transduction plays a pivotal role in cellular regulation. Calcium signaling is probably the most ubiquitous cellular signal that mediates the action of many hormones, cytokines, and neurotransmitters. Calcium regulates the activity of numerous calcium-dependent proteins including protein kinases, protein phosphatases, protease and other calcium-regulating factors involved in calcium signaling. Calcium signaling plays a pivotal role in the regulation of manifold cellular functions including cell proliferation, apoptosis and gene expression. This book focuses on recent topics in calcium signaling and its related diseases.

Oligosaccharides: Food Sources, Biological Roles and Health Implications

Lori S. Schweizer and Stanley J. Krebs

In series: Biochemistry Research Trends
Hardcover: 978-1-62948-328-3. $195.00.
e-book: 978-1-62948-329-0. $195.00.
An oligosaccharide is a saccharide polymer containing a small number of component sugars, also known as simple sugars (monosaccharides). Oligosaccharides can have many functions; for example, they are commonly found on the plasma membrane of animal cells where they can play a role in cell-cell recognition. This book presents topical research data in the study of oligosaccharides, including the study of human and bovine milk oligosaccharides; the health benefits and commercial applications of prebiotic oligosaccharides; classification of oligosaccharides synthesized by enzymes; oligosaccharides from sucrose via glycansucrases; and the Mannan oligosaccharides in aquaculture.

BIOLOGY

Contraceptives: Role of Cultural Attitudes and Practices, Predictors of Use and Levels of Effectiveness

Louis Bourgois and Samuel Cauchois

In series: Obstetrics and Gynecology Advances
In this book, the authors present current research in the study of contraceptives and their predictors of use, role of cultural attitudes and practices and levels of effectiveness. Topics discussed in this compilation include the history of contraception from the ancient Egyptians to the “morning after” pill; the implicit social cognition of attitudes toward contraceptives and the implications for sexual behavior; improving contraceptive choices and use; qualities of romantic relationships and consistent condom use among dating young adults; and contraceptive use and non-use among the Black and Latina populations.

Foraminifera: Aspects of Classification, Stratigraphy, Ecology and Evolution

M. Dan Georgescu (Department of Geosciences, University of Calgary, Calgary, Alberta, Canada)

In series: Marine Biology
Hardcover: 978-1-62948-470-9. $150.00.
This book consists of a collection of ten articles covering a variety of modern research topics in foraminiferal classification, stratigraphic distribution, ecology, paleoceanography and evolution. Significant contributions include road-opening studies in the evolutionary occurrence of the group in the Early Jurassic and evolutionary classification of the Cretaceous heterohelicid, planomal nid and globotruncanid planktonics. Two general descriptions of the benthic foraminiferal assemblages from the Late Jurassic of Canada and modern sediments of the central Mediterranean Sea further add to the
The subject starting from discussions of its definition and scope and biological systems are valid across the spectrum of structural hierarchies found in paradigm. It is marked by an emphasis on integrating data on multiple technologies, systems biology. Driven by rapid developments in protein and DNA sequencing e.

**Human Genome: Components, Structural/Functional Disorders and Ethical Issues**
*Tomeo Caccavelli*
In series: Genetics - Research and Issues
2013. 197 pp.
Hardcover: 978-1-62808-803-8. $120.00.
e-book: 978-1-62808-804-5. $120.00.
The human genome is the complete set of human genetic information, stored as DNA sequences within the 23 chromosome pairs of the cell nucleus and in a small DNA molecule within the mitochondrion. In this publication, the authors present topical research in the study of the components, structural and functional disorders; and ethical issues of the human genome. Topics discussed include critical events in the pathobiology of cancer and the compilation of major biomarkers enabling improved diagnosis; and the evolution of human genome analysis and its impact on disease diagnosis and molecular diagnostics.

**New Research on Protein Synthesis**
*Carlo Bethaz and Vito Li Puma*
In series: Protein Biochemistry, Synthesis, Structure and Cellular Functions
Softcover: 978-1-62948-527-0. $72.00.
In this book, the authors present current research from across the globe in the study of protein synthesis. Topics discussed in this compilation include protein synthesis elongation factors EF-Tu and eEF1A and their application in the improvement of heat tolerance in plants; myostatin function in muscle protein homeostasis and its link with the regulation of translation; and energy regeneration systems in cell free protein in vitro.

**Recent Advances in Systems Biology Research**
*André X. C. N. Valente (University of Coimbra and Biocat - Biotechnology Innovation Center, Portugal), Abhijit Sarkar (The Catholic University of America, Vitreous State Laboratory, USA) and Yuan Gao (Johns Hopkins University, USA)*
In series: Systems Biology - Theory, Techniques and Applications
Hardcover: 978-1-62948-736-6. $150.00.
Driven by rapid developments in protein and DNA sequencing technologies, systems biology has become an important research paradigm. It is marked by an emphasis on integrating data on multiple scales and creating a framework for developing predictive models that are valid across the spectrum of structural hierarchies found in biological systems. This book consists of fourteen original chapters and an introduction that together provide a comprehensive introduction to the subject starting from discussions of its definition and scope and ending in detailed reviews of how the systems approach is affecting clinical research and practice. Most chapters are written to be accessible to a wide readership and contain references to the latest research. Altogether, this is a state-of-the-art description of the present and future of systems biology.

**BIOTECHNOLOGY**

**Dextran: Chemical Structure, Applications and Potential Side Effects**
*Garrett P. Figgs*
In series: Recent Trends in Biotechnology
Hardcover: 978-1-62948-960-5. $150.00.
Dextran and dextran derivatives are widely used in solution to provide structure and function, e.g., colloidal stability, delivery of actives, viscoelasticity, to a variety of products. Underlying these functions are inter- and intra-molecular interactions that depend on the molecular characteristics of dextran (molecular weight, architecture, chemical modifications) and the type of solvent used (typically water, but may include salts, solutes and/or organic solvents). Topics discussed in this compilation include dextran solution properties; dextran based nanoparticles for sustained drug delivery; gelation properties of whey protein and dextran conjugates obtained through maillard reaction; dextran based hydrogel and tissue adhesive agent and tissue engineering scaffold; application of DEAE-dextran to an efficient gene transfer system; conjugated dextran amines as intracellular tracers for visualizing and manipulating neurons; and effects of dextrins in the sugar industry.

**In Vivo Imaging: New Research**
*Rick Hough and Jared Camarillo*
In series: Biotechnology in Agriculture, Industry and Medicine
Hardcover: 978-1-62948-633-8. $120.00.
e-book: 978-1-62948-634-5. $120.00.
In this book, the authors present current research in the study of in vivo imaging. Topics discussed include nuclear magnetic resonance imaging of metabolites in plants and animals; the design and application of magnetic-based theranostic nanoparticle systems, an investigation on their potentially harmful effects and an exploration of their future role in personalized medicine; an overview of techniques for in vivo bone imaging, including X-ray, micro-computed tomography, magnetic resonance imaging; SPECT/PET nuclear imaging technologies, and ultrasound; and the in vivo imaging of the central nervous system anatomy, fiber connectivity and functional activity.

**Milk Production**
*Boulhba Rekik (Ecole Superieure d'Agriculture de Mateur, Mateur, Tunisia)*
In series: Food Science and Technology
Hardcover: 978-1-62100-061-7. $165.00.
Milk is unarguably the most nutritious bio-fluid in all of nature. Milk sufficiency for neonatal brain, nervous and immune systems, and bone development and supportive tissue growth for even up to two years without a major need for alternative foods is an evolutionary proof for its irreplaceable role in human nutrition. Milk production in ruminants is a bio-complex process that necessitates conversion of least available plant materials into the most enriched available nutrients. This book
presents current research in the study of milk production, with a particular focus on the biological components and nutritional quality of milk.

**BOTANY**

_Cleaved Amplified Polymorphic Sequences (CAPS) Markers in Plant Biology_

_Yuri Shavrukov (Australian Centre for Plant Functional Genomics, University of Adelaide, Waite Campus, Urrbrae, SA, Australia)_

In series: _Botanical Research and Practices_

2014.

Hardcover: 978-1-63117-553-4, $150.00.
e-book: 978-1-63117-554-1, $150.00.

The book deals with one type of molecular markers, Cleaved Amplified Polymorphic Sequences (CAPS). This is based on PCR and polymorphism of recognition sites for restriction enzymes. The chapters are written by specialists and cover different ranges of plants: from model Arabidopsis and ferns to more important crops such as oil-crops, peas, tomato, tobacco, grasses, barley and wheat. Separate chapters discuss more exotic ramie plants, wild emmer wheat and micro-rhizosphere in plants; but all the chapters are combined together in one book with the same topic: CAPS markers development and applications. A reader can find answers to questions such as: how can CAPS markers be easily developed for their research and how can they be applied to a wide range of plants? This book will respond to the quickly growing interests of scientists and students working with molecular markers for genetic, physiological and molecular-biological researches.

_Weeds and their Ecological Functions_

_Ali Reza Taab (Department of Agronomy and Plant Breeding, Faculty of Agriculture, Ilam University, Ilam, Iran)_

In series: _Agronomy Research and Developments_

In series: _Agriculture Issues and Policies_


Hardcover: 978-1-62808-332-3, $150.00.

Weeds are problematic both in agricultural and nonagricultural areas so that they potentially cause economic losses. Weed interference in crops also date back to the beginning of agriculture and they have been able to persist, in spite of long term control operations. They are able to adapt and survive in the environment due to their specific characteristics. Thus, to control weeds efficiently knowledge of weed biology, in particular their survival mechanisms, ecological responses and interactions, is of important value in weed management systems.

"Weeds and their Ecological Functions" provides information on weeds functional behaviors in their cultivations including weed seed dormancy, germination and seedling emergence, examples of beneficial and detrimental interactions between weeds and other organisms, weed behaviors in perennial crops and response of weeds to cover crops. This information is useful for students and weed scientists to analyze some of the functional behavior of weeds and to develop integrated weed management systems. Nowadays, there is a remarkable variability in environmental factors like temperature and precipitation because of climate changes around the globe. Weed and crop growth are substantially influenced by changes in the environment. Therefore, increased knowledge is needed to develop predictive tools to quantify the consequences of the changes. Moreover, weed control in the early stage of growth is of high importance. Factors regulating seedling emergence characteristics of the weeds in the field need to be well understood. The aspects of the seed dormancy system such as the effect of maternal environmental factors on primary dormancy, dormancy induction and dynamics, germinability and seedling emergence characteristics of weeds, are reviewed and discussed. Discussion is provided on the possible ecological and agricultural implications of weed seed ecophysiology. In addition, examples of seedling emergence behavior of summer and winter annual weed species are presented. Information is provided on the presence of some weeds in perennial crops that are not always harmful. Some weeds especially those characterized as perennial or invasive are highly competitive and could cause problems to the crops. However, the presence of some other weeds should be clearly reconsidered regarding their utility as cover species and their beneficial impacts. Such an approach could certainly maintain and enhance the profitability of sustainable agricultural systems like organic or low input agriculture. Cover cropping is a technique to improve soil fertility and to ensure yield stability. An overview is given on cover cropping typologies and their significance in different agricultural contexts, including their effects on physical and chemical soil characteristics, as well on the bioecosynthetic components of the agroecosystems. The main characteristics of the better-suited species for cover cropping purposes are also reported. There are possible interactions between weeds and other organisms in the environment. To understand the role of weeds in agroecosystems, weed interactions with other biotic compartments including nematodes, plant pathogens, arthropod communities, and a crop are also presented.

**CHEMICAL ENGINEERING**

_Acetate: Versatile Building Block of Biology and Chemistry_

_David A. Sanders (Markey Center for Structural Biology, Department of Biological Sciences, Purdue University, West Lafayette, IN, USA)_

In series: _Chemistry Research and Applications_


Hardcover: 978-1-62808-565-5, $150.00.
e-book: 978-1-62808-597-6, $150.00.

Acetic acid and its conjugate base acetate are amazing molecules. The combination of a methyl group and a carboxylic acid/carboxylate makes acetic acid/acetate the primordium of complex organic molecules. Acetic acid is uncommon among common biological carbon sources besides gases in that it can freely diffuse across membranes. The central role of acetate in the Global carbon cycle and the origin and evolution of life on earth are expertly portrayed by Ferry. Fermentation reduces biomass predominantly to acetate. Acetate is the metabolic currency between the bacteria and archaea domains of life. It is said that two-thirds of the methane produced in the biosphere is derived from acetate. An "energy first" hypothesis that builds on the chemosynthetic origin of life proposal that highlights the central role of acetate thioseters is advanced. This book spans from the origin of life to the latest developments in biology and chemistry. Its chapters elucidate how the versatile acetate and its derivatives and partners are critical to the metabolism, the global carbon cycle, greenhouse gas generation and climate change, among other things.

_Dendrimers: Synthesis, Applications and Role in Nanotechnology_

_Heather B. Harris and Brian L. Turner_

In series: _Chemical Engineering Methods and Technology_

In series: _Materials Science and Technologies_

2013. 290 pp.

Hardcover: 978-1-62808-604-1, $150.00.
e-book: 978-1-62808-605-8, $150.00.
In this book, the authors present topical research in the study of
dendrimers, with a focus on their synthesis, application and role in
nanotechnology. Topics discussed in this compilation include
dendrimer-based nanostructured ultrathin films formed by covalent
molecular assembly in supercritical carbon dioxide; dendrimer-based
host/guest systems for drug delivery; dendrimers for chemotherapeutic
drug delivery; dendrimer-templated gold nanoparticles; sorption in
liquid crystalline poly (propyleneimine) dendrimers by inverse gas
cromatography; dendrimer-based nanocarriers for drug controlled
release and targeted delivery; dendrimers as versatile architectures in
bio-detection technologies; nanoglobal macroyclic Gd(III) chelate
conjugates as magnetic resonance imaging contrast agents; dendrimers
quantum dots nanocomposites for chemical sensing; dendrimers for
the functionalization of textiles; and recyclable metal nanoparticulate
catalysts based on dendrimers.

**Dyeing: Processes, Techniques and Applications**
**Jie Fu (School of the Environment, Nanjing University, Nanjing, China)**

In series: *Chemical Engineering Methods and Technology*

Hardcover: 978-1-62808-847-2. $150.00.

This book focuses on the application of various dyes in the dyeing
process and treatment of dyeing wastewater. Chapter One deals with
the chemistry and application of reactive dyes, which are the most
widely used dyes for the coloration of cellulosic and allied textile
fibers. Chapters Two and Three introduce photochromic dyes. Chapter
Two gives a general description and Chapter Three describes the
chemistry of crown ether styryl dyes in detail. Chapters Four and Five
discuss indigo, the oldest known natural blue dye. Chapter Four
systematically describes indigo formation in plants and application in
textile coloration. Chapter Five discusses the mechanisms of a non-
conversional process of indigo reduction. Chapter Six also concerns
natural dyes and describes dye extraction from mango grove bark and its
application in fabric dyeing. Chapter Seven summarizes various kinds
of macromolecular auxiliaries for salt-free dyeing auxiliaries and
discusses their physicochemical properties and
advantages/disadvantages. Chapter Eight aims to investigate the
spinning technology of the sheath/core nylon/PET composite filament,
to survey the elution characteristics of the fabrics, and to analyze their
physical properties. Chapters Nine-Thirteen all discuss the treatment of
dyeing wastewater, one of the biggest contributors to water pollution.
They concern the different technologies applied in the treatment of
dyeing wastewater, including adsorption, electrochemical techniques,
coagulation/flocculation, biological treatments, and membrane
biocatalysts. From these contents, readers can get a good understanding
on the current advances and developing trends of treatment
technologies for dyeing wastewater.

**Emulsification: Processes, New Technology and Current Applications**
**Kylie M. Tannen**

In series: *Chemical Engineering Methods and Technology*


In this book, the authors discuss the processes, new technology and
current applications of emulsification. Topics include ultrasound-
assisted emulsification microextraction; microbial emulsifiers and their
environmental applications potential; alternative methods for
emulsification; the physical and chemical modifications on emulsifying
properties of proteins; low-energy nano-emulsions and their
applications as CT blood pool contrast media; and emulsification in
mini-channels for biodiesel production.

**Fluorophores: Characterization, Synthesis and Applications**
**Shota Watanabe**

In series: *Chemical Engineering Methods and Technology*

2013. 112 pp.
Softcover: 978-1-62808-268-5. $45.00.

Fluorophores are chemical compounds that can re-emit light upon light
excitation and typically contain several combined aromatic groups, or
plane or cyclic molecules with several π bonds. In this book, the
authors present current research in the study of the characteristics,
synthesis, and applications of fluorophores. Topics include
the application of fluorescent molecular probes in cell biology; fluorescent
probes based on upconverting lanthanide nanostuctures; aromatic
hydrazine-based fluorophores synthesis, spectroscopy and
bioapplications; and the concentration dependence of lumic acid
fluorescence intensity.

**Graphene: Mechanical Properties, Potential Applications and Electrochemical Performance**
**Bruce T. Edwards**

In series: *Chemistry Research and Applications*

Hardcover: 978-1-62948-795-3. $150.00.
e-book: 978-1-62948-796-0. $150.00.

Graphene has drawn considerable scientific and commercial interest
thanks to its unique structure, including being single-atom thick,
strictly two-dimensional and highly conjugated, which results in some
superb electric, optical, mechanical and thermal properties. In this book
the authors present current research in the application of graphene in
sensing technology; the adsorption of hexavalent chromium from
aqueous solutions by graphene modified with cetyltrimethylammonium
bromide; graphene-noble metal hybrid nanomaterials as advanced
electrocatalysts; the application of graphene in mass spectrometry; the
incorporation of graphene into direct-pattermable transparent
conducting oxide thin films; graphene and related nanomaterials for
environmental remediation; and configurations of structural defects in
graphene and its effects on its transport properties.

**Helium: Occurrence, Applications and Biological Effects**
**Simon B. Davis**

In series: *Chemical Engineering Methods and Technology*

Hardcover: 978-1-62808-612-6. $120.00.
e-book: 978-1-62808-613-3. $120.00.

Helium is the second most abundant element in the solar system after
the hydrogen atom and also the simplest of all atoms. In this book the
authors present topical research in the study of the occurrence,
aplications and biological effects of helium. Topics discussed include
the discontinuous yielding, stress drops and strength of metals in liquid
helium; the use of helium with oxygen at pressure as a breathing gas
mixture; the physics and chemistry of helium clusters and droplets; the
interaction of helium atoms and ions with matter; postseismic leakage
of mantle and crustal helium from seismically active regions; weak
superfluidity of the nonstationary Josephson effect in He-4 and
possible applications; and clean energy from Helium-3 fueled nuon-
catalyzed aneuronic fusion.
High-Performance Liquid Chromatography (HPLC): Principles, Practices and Procedures
Yuegang Zuo (Department of Chemistry and Biochemistry, University of Massachusetts Dartmouth, North Dartmouth, MA, USA)
In series: Chemical Engineering Methods and Technology
Hardcover: 978-1-62948-854-7. $150.00.
e-book: 978-1-62948-858-5. $150.00.
High-performance liquid chromatography (HPLC) has emerged as the most powerful and versatile separation and analytical method. This book covers not only the conventional HPLC techniques but also the new developments, novel separation modes, column technology, as well as procedures and practices, particularly the advanced applications of HPLC in the fields of pharmaceutical, clinical, bioanalytical and food sciences. An in-depth discussion of separation mechanisms and characteristics of stationary and mobile phases is well-blended with practical method development and validation. Practical and pragmatic approaches and actual examples for rapid and effective development of fast, selective, accurate and reliable HPLC methods are provided. This book consists of eleven chapters. The first chapter explains the basic principles of hydrophilic interaction liquid chromatography (HILIC), an appealing alternative HPLC separation mode for separating polar compounds along with the properties of HILIC stationary and mobile phases. The technical aspects and the applications as well as actual HILIC method development are illustrated. The second chapter describes recent progress in HPLC column technology. The advantages and disadvantages of sub-2 μm porous particles, solid core particles, and monolithic columns over the conventional columns are discussed in terms of the separation efficiency, speed, resolution and applications. Chapters Three to Eleven are devoted to advanced applications of modern HPLC including RP-HPLC, NP-HPLC, Ion chromatography, HILIC, LC-MS/MS in pharmaceuticals, clinical, biomarkers, dietary supplements, food analysis and dye examination in archeological textiles.

Lithium: Technology, Performance and Safety
Francisco L. Tabarés (Head of the Plasma-Wall Interaction Group, Laboratorio Nacional de Fusion, As.Euratom/Ciemat, Madrid, Spain)
In series: Chemistry Research and Applications
In series: Chemical Engineering Methods and Technology
Hardcover: 978-1-62417-634-0. $150.00.
Lithium is a chemical element with unique properties. Its applications in today’s world are countless, from psychiatry to cell phones, and we are still far from exploiting all the exotic signatures of this amazing metal. Even so, the reader will find here a good sample of what is being investigated at present in the field of lithium chemistry and future applications in the new energy supply concepts. From carbon sequestration to fusion energy research, from lithium mining to your cell phone battery, this book will guide you through the fascinating world of the lightest solid element in earth.

New Developments in Terpenes Research
Jinnan Hu (Department of Plant Pathology, The Ohio State University, Columbus, Ohio)
In series: Chemistry Research and Applications
Hardcover: 978-1-62948-760-1. $150.00.
Many of the terpenes compounds are naturally occurring organic products abundant in plants, which have been employed for centuries as odorants because of their aromatic qualities. In the last decades, their valuable properties have attracted growing interest in the pharmaceutical area. In fact, a large number of the world’s population uses plant extracts or their active compounds for health related purposes. Due to the continuous research efforts on terpenes compounds, numerous advances have been made in many aspects including advanced extraction and processing approaches, molecule structure analysis, usage for flavor enrichment, and most importantly, its potential pharmaceutical applications. This book manages to cover many of the recent developments. The potential of some monoterpens has been reviewed for their use as substrates to obtain new natural flavor compounds with economic and commercial interest. The potential medicine functions of terpenes have been thoroughly discussed in four chapters, including: the current knowledge on the antitumor potential of diterpens in relevant cancers; the application of rosemary extracts as cancer therapy which contain a high concentration of phenolic diterpenes; the possible development of an effective immunotherapy for cancer originated from triterpen compound such as uncarinic acid and ursolic acid; and the promising antibacterial, antioxidant, phytotoxic, insecticidal activities of essential oils extracted from the leaves and bugs of Syzygium. After these discussions and reviews on functions, the later chapters change to other interesting topics, such as a review of the development of effective extraction methods with extraction efficiency, as well as the description of recent advances in the environmentally benign oxidative processes where greener oxidants are used. The last two chapters discuss structures of terpenes: firstly, two computational chemistry approaches are introduced which can serve as important tools in predicting molecule structures and elucidate the mechanisms of action. Finally, the structures of two recently reported pentacyclic triterpenes and their pharmacological potential are discussed.

Niobium: Chemical Properties, Applications and Environmental Effects
Mathis Segers and Thomas Peeters
In series: Chemical Engineering Methods and Technology
Softcover: 978-1-62808-257-9. $72.00.
In this book, the authors present current research in the study of the chemical properties, applications and environmental effects of niobium. Topics discussed include the structure and properties of Nb under severe plastic deformation and in high-strength Cu-Nb nanocomposites; the crystal structure of ordered carbide phases and revised sequence of phase transformations associated with the ordering of strongly nonstoichiometric carbides of group V transition metals; niobium-based alloys as hydrogen permeable membrane for hydrogen separation and purification; and electrode processes in anodic oxide films of niobium.

Voltammetry: Theory, Types and Applications
Yuki Saito and Takumi Kikuchi
In series: Chemical Engineering Methods and Technology
Hardcover: 978-1-62948-057-2. $150.00.
Voltammetry is the study of current as a function of applied potential and is a category of electroanalytical methods used in analytical chemistry and various industrial processes. In this book, the authors discuss the theory, types and applications of voltammetry. Topics include voltammetric techniques in electrocatalytic studies;
voltammetry and stoichiography for studying the chemical composition and real structure of solid inorganic substances and materials; voltammetric techniques applied on organic compounds related to agroalimentary and health systems; using voltammetry as a promising analytical technique in the study of compounds of biological importance; automatized determination of metallothionein by adsorptive transfer stripping techniques coupled with Brudka reaction; overcoming drawbacks and going further with practical electroanalysis; voltammetric determination of metals as food contaminants; dual dynamic voltammetry with rotating ring-disk electrodes; linear voltammetry of anodic selective dissolution of homogeneous metallic alloys; electrooxidation of glycine and a-alanine on platinum; and temperature responses in linear voltammetry.

Xylenes: Synthesis, Characterization and Physicochemical Properties
Michael Olawale Daramola (School of Chemical and Metallurgical Engineering, Faculty of Engineering and the Built Environment, University of the Witwatersrand, South Africa)
In series: Chemical Engineering Methods and Technology
In series: Environmental Science, Engineering and Technology
2013. 201 pp.
Hardcover: 978-1-62808-342-2. $110.00.
This book contributes significantly to research in the area of the synthesis, characterization and uses of xylenes. It provides readers with an overview of not only the synthesis of xylenes, but applications of xylenes and biological treatment of xylene-contaminated media (water, air and soils). Grewer techniques synthesizing xylenes from biomass feedstock are discussed. In addition, some energy-efficient processes, such as the membrane-based process, for the synthesis of xylenes are elucidated. Application of xylenes in the production of nanomaterials, such as carbon nanotubes, is mentioned and discussed in detail. The book also describes and discusses various techniques for the biodegradation/bioremediation of xylene contaminated media. Various studies documented in this book are thought-provoking and could provide a platform for developing further research efforts towards the development of greener and energy-efficient industrial processes for producing xylenes. This book will be of interest to industrialists in the area of xylene production, as well as graduate students and researchers in industry and academia working in the field of chemical engineering, chemistry, and environmental engineering.

CHEMISTRY
Advances in Chemical Modeling. Volume 4
Mihai V. Putz (West University of Timisoara, Timisoara, Romania)
In series: Chemistry Research and Applications
2013. 573 pp.
This book contains world-class chapters in the fields of: • Structural Physical Chemistry: Treating the Bose-Einstein condensate at the chemical interacting level of Kohn-Sham systems, modern inequality regarding pi-electronic energy, periodicity or diatomics, modeling the atomic structure in geometrical superior dimensional space, algebraic chemistry of reactivity, chemical reactivity within conceptual density functional theory (DFT); • Structural Computational Chemistry: Covering theoretical studies of organic molecules in ground and excited states while modeling conformation, specific rotation, intramolecular proton transfer, nucleophilic substitution, DFT algorithms; • Modeling Experimental Chemistry: Studying the macroscopic and experimental influences on microscopic structure, spin transitions, triplet states, kinetics of detonation at molecular level, chemical kinetics and thermal decomposition; • Structural Mathematical Chemistry: Approaches topological studies of extended systems: fullerenes, nanotubes, schwarzites, to the graphs characterization by connectivity and topological indices modeling chemical reactivity; • Structural Biological Chemistry: Modeling amino-acids and proteins interaction and behavior in chemical bonding of bio-molecules; • Computational Toxicology and Ecotoxicology: Describing the in silico relationship between the chemical structure and biological activity in various in vitro and in vivo environments; • Modeling Environmental Chemistry: Explaining the macro-climate and pollution dynamics by recording and correlating of micro-behavior on mapped ecological systems and physical territories; • Educational Chemistry and Related Physical Sciences: Provides the enlighten connection between various models in chemistry and allied disciplines by innovative comparisons, changing classical or consecrated perspectives and principles, critically extending of the applicability domains of chemical models and interactions.

Advances in Chemistry Research. Volume 20
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-62948-275-0. $150.00.
This book presents original research results on the leading edge of chemistry research. Each article has been carefully selected in an attempt to present substantial research results across a broad spectrum. Topics discussed include the application of spectroscopic techniques in the quality control of pharmaceuticals; beer analyses in each step of the commercial production process; the properties of coagulation, flocculation, aggregation and hemagglutination; applications and uses of formic acid in liquid chromatography-mass spectrometry analysis; applications of the theory of joint probability distributions to chemical science engineering; nutritional variation in the process of brewing pilsner beer; the long-range order in MnS04 water solutions; and the electrolytic dissociation of alkyl and aryl derivatives of malonic acid.

Advances in Chemistry Research. Volume 21
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-62948-742-7. $150.00.
This book presents original research results on the leading edge of chemistry research. Each article has been carefully selected in an attempt to present substantial research results across a broad spectrum. Topics discussed include the antibacterial and antifouling properties of lipophilic bismuth compounds; theoly of carbon black suspensions; characterization of carbon blacks; doubly bonded molecules containing bismuth and other group 15 elements in the singlet and triplet states; growth of nanocrystals from amorphous bi; mathematical theory of noble gases; and properties of rarefied noble gas flows.

Amino Acid Molecules Fragmentation by Low-Energy Electrons
Alexander V. Snegursky, Jelena Tamuliene, Liudmila Romanova and Vasyl Vukstich (Ukrainian National Academy of Sciences Institute of Electron Physics, Ukraine)
In series: Chemistry Research and Applications
Amino acids belong to biologically relevant organic substances involved in live organisms. Generally, they include the amine (NH₂) and the carboxylic acid (COOH) functional groups. In general, their generic formula looks like H₂NCHR(COOH), with R being an organic substituent (a "side-chain"). As seen, their main constituents are carbon, hydrogen, oxygen and nitrogen atoms, however, other elements (say, sulfur) are also found in their side-chains. As of today, a dozens of amino acids are classified quite differently. From the structural viewpoint and according to locations of their functional groups, amino acids are commonly classified as the α-, β-, γ- and δ- ones. Being involved in forming proteins, amino acids are the second (after water) largest component of live tissues. Together with proteins, they play a significant role in a number of live organism-related processes, e.g., neurotransmitter transport and biosynthesis.

Ammonium Nitrate: Synthesis, Chemical Properties and Health Hazards

Donald C. Rivera

In series: *Chemistry Research and Applications*


Softcover: 978-1-62948-810-3, $72.00.
e-book: 978-1-62948-811-0, $72.00.

Solid ammonium nitrate (NH₄NO₃) is widely used in explosives and fertilizers. Since one of these products should explode and the other should not decompose in an uncontrolled way, research done in other industries has been interested in how this compound can best be produced, handled, stored, and finally used. The topics discussed in this book include the crystal structure, polymorphism and thermal behavior of ammonium nitrate; the phase transition of NH₄NO₃; the uptake, metabolism, toxicity, and effect of different nitrogen forms on growth in horticultural plants; and finally, the synthesis, chemical properties, health hazards and applications of NH₄NO₃.

Applied Surface Chemistry of Nanomaterials

Mohamed M. Chehimi and Jean Pinson (University Paris Diderot, Paris, France)

In series: *Chemistry Research and Applications*

In series: *Nanotechnology Science and Technology*


Hardcover: 978-1-62808-351-4, $175.00.

This book examines the current state of the art, new challenges and opportunities in the field of nanomaterials with a focus on nanodiamonds, diamond nanowires, Csp₂ nan objects, metallic nanostructures, conductive polymer nanostructures and nanocomposites and micro/nano carbon fiber/carbon nanotube composites. The emphasis of the book is on surface chemistry having a central role in the applications of the said nanomaterials which encompass composites, biomaterials, sensors, catalysts, separative hybrid materials and so on. The handpicked selection of topics and expert contributors across the globe make this survey an outstanding resource reference for anyone involved in the field of design of advanced nanomaterials with tunable surface chemical and physicochemical properties. This book will be of interest to academic and industrial researchers, Master and PhD students, and post docs active in the domain of surface chemistry for modification and application of nanomaterials, and to those who are already active in the science and technology of nanomaterials but who would like to have a deeper insight into the strategies for chemically modifying nanomaterials.

Argon: Production, Characteristics and Applications

Bogos Nubar Sismanoglu, Homero Santiago Maciel, Marija Radmilovic-Radjenovic, Rodrigo Savio

In series: *Chemistry Research and Applications*

In series: *Material Science and Technology*

2013, 379 pp.


Cadmium (Cd) is one of the four metals that have been raising apprehension worldwide as environmental, agricultural and health hazards in recent decades. Cadmium accumulates in the soil naturally or through anthropogenic activities, such as mining, industrial waste disposal, use and disposal of batteries and sludges, and application of pesticides and fertilizers. Cadmium accumulation can result in severe deterioration of natural resources, disturbance of ecosystems, and deleterious effects on plants, animals and human health. In recent decades, the number of publications focused on cadmium toxicity in plants and animals has been growing exponentially, making this topic impossible to accommodate within the scope of a single volume. This book edited by Dr. Mirza Hasanzaman and Dr. Masayuki Fujita presents a collection of 16 chapters written by 67 experts from 19
countries working on cadmium toxicity. This volume provides the readers with a background for understanding cadmium toxicity, its environmental and health aspects, and its remediation mechanisms. Various chapters included in this book provide a state-of-the-art account of the information as a resourceful guide suited for scholars and researchers working in the field of cadmium. This book is a invaluable resource for plant biologists, agriculturists, toxicologists, biochemists, environmental scientists, physiologists, pharmacologists, geneticists, molecular biologists; as well as graduate students in these disciplines.

**Charcoal: Chemical Properties, Production Methods and Applications**

**Eric N. Tyrone**

In series: *Chemistry Research and Applications*


Softcover: 978-1-62808-663-8. $69.00.

e-book: 978-1-62808-664-5. $69.00.

Charcoal is a light black residue consisting of carbon, and any remaining ash, obtained by removing water and other volatile constituents from animal and vegetation substances. In this book, the authors discuss the chemical properties, production methods and applications of charcoal. Topics include the obtention of charcoal from eucalyptus wood in a steel pilot scale kiln; application of carbon supported metal catalysts in the field of hydrodechlorination; emission reduction theory and results in the development of a suitable small-scale, portable, continuous rice husk carboniser for rural regions in transitional economies; the significance of functionalization of carbon based adsorbents for water cleaning technologies; and charcoal meal as an old but valid test to measure intestinal transit in vivo.

**Cobalt: Occurrence, Uses and Properties**

**Yamato Kobayashi and Haruto Suzuki**

In series: *Chemistry Research and Applications*


Hardcover: 978-1-62808-278-4. $150.00.


In this book, the authors present current research in the study of the occurrence, uses and properties of cobalt. Topics discussed include the microwave and magnetic properties of cobalt-containing magnetophotonic crystals; promoted cobalt silica gel catalysts for Fischer-Tropsch synthesis; cobalt and its compounds in oxidation-reduction processes of environmental catalysis; the nature of cobalt species in Co-zeolites used for the selective catalytic reduction of NOx with hydrocarbons; cobalt toxicity in *Escherichia coli*; cobalt speciation in aequous solution and sorbents on the basis of natural dolomite for cobalt removal; the morphology, microstructure, structural and thermal properties of Co powder; comparison of cobalt and iron perovskite-based catalysts for WGS; direct patterning of cobalt nanostructures using focused electron beam induced deposition; cobalt catalysts applied in ethanol reforming reactions; combustion synthesis of cobalt compounds; *in situ* study of energetics and properties of cobalt interlayers in WC/Co alloys; anisotropic lattice distortion of composite materials of chiral Cu(II)-Co(III) or Cu(II) complexes and TiO2; and the chemical process of recovering cyanides as cyanide-bridged Cu(II)-Co(III)/Fer(III) bimetallic assemblies from preparation of semiconductors for solar cells.

**Combustion: Types of Reactions, Fundamental Processes and Advanced Technologies**

**Joseph M. Grier**

In series: *Chemistry Research and Applications*


Hardcover: 978-1-62948-967-4. $150.00.


In this book the authors present current research in the study of different types of reactions, fundamental processes and advanced technologies of combustion. Topics discussed in this compilation include the Lagrangian formulation to treating the turbulent reacting flows; g-equation in white-noise in time turbulent velocity field; deposition of thin functional coatings at atmospheric pressure using combustion chemical vapor deposition; fundamentals of oxy-fuel carbon capture technology for pulverized fuel boilers; combustion of lignocellulosic biomass and marine biomass by means of thermal analyses; methane combustion by electrochemical promotion of catalysis phenomenon; novel nitrate-free acetate-H2O2 combustion synthesis; and solution combustion method.

**EDTA: Synthesis, Uses and Environmental Concerns**

**Andris Molnar**

In series: *Chemistry Research and Applications*

2013. 199 pp.

Hardcover: 978-1-62808-146-6. $95.00.

e-book: 978-1-62808-147-3. $95.00.

In this book, the authors present current research in the study of the synthesis, uses and environmental concerns of EDTA. Topics discussed include the symbiotic and synergic effects in amide and ester derivatives of EDTA; photo- or radiation-induced degradation of EDTA and its complexes of heavy metals; the use of EDTA root conditioning in regenerative procedures of periodontal tissues; effects of EDTA on adsorption behavior of cadmium onto natural freshwater surface coatings; and the environmental concerns and remedies in the management of EDTA-containing aqueous effluent.

**Environmental Chemistry of Animal Manure**

**Zhongqi He** (New England Plant, Soil and Water Laboratory, Orono, ME)

In series: *Environmental Science, Engineering and Technology*


Hardcover: 978-1-61209-222-5. $275.00.

Softcover: 978-1-62808-641-6. $89.00.


Animal manure is traditionally regarded as a valuable resource of plant nutrients. However, there is an increasing environmental concern associated with animal manure utilization due to high and locally concentrated volumes of manure produced in modern intensified animal production. Although considerable research has been conducted on environmental impacts and best management practices, the environmental chemistry of animal manure has not developed accordingly. This new book analyzes the basic knowledge and latest research on the environmental chemistry of animal manure.

**Europium: Synthesis, Characteristics and Potential Applications**

**Mohamed Said Attia Moustafa** (Chemistry Department, Faculty of Science, Ain Shams University, Egypt)

In series: *Chemistry Research and Applications*


Hardcover: 978-1-62808-896-0. $150.00.


This book is devoted to the special characteristics of an important element of lanthanides chemistry: Europium. It presents the technological aspects of Europium in many fields of industry as well as in fundamental analysis by using a new, safe and low cost methodology. This book discusses the many applications for the Europium element either in its metallic or ionic state. These applications are in the fields of (1) optical sensors for pesticides, biological molecules such as proteins, peptides, nucleic acids,
hormones, and drugs, (2) manufacturing of portable computers, communication equipments and consumer electronic products, (3) manufacturing of optoelectronics devices such as visible lasers that can be grown on Si substrates, (4) preparation of photocatalysts for degradation of vehicle exhaust gases and water pollutants, (5) manufacturing of photonic materials, (6) manufacturing of magneto optic-memories and modulators that are applied to biological detection of proteins, DNAs, and other materials leading to practical use in various diagnostics, (7) synthesis of chemically inert materials resistant to radiation damage to protect civil aerospace, military structures and aircraft, and (8) the preparation of highly luminescent materials for biomarkers.

Graphene Oxide: Synthesis, Mechanical Properties and Applications
Ryana Boveri
In series: Chemistry Research and Applications
2014.
Hardcover: 978-1-63117-519-0. $120.00.
e-book: 978-1-63117-520-6. $120.00.
Graphite oxide is one of the promising carbon based materials in the field of modern science and technology. Graphite oxide is the oxidized form of graphite which can be produced from graphite powder or flakes by using strong oxidizing agent adoption solution chemistry approach. A number of oxygen containing functionalities such as carboxylic, phenolic, carbonyl and epoxide are present in graphite oxide structure. Due to the presence of the oxygen containing functionalities graphite oxide is hydrophilic in nature. This book discusses the many mechanical properties of graphene oxide, its application and how it is synthesized.

Handbook on Reactive Oxygen Species (ROS): Formation Mechanisms, Physiological Roles and Common Harmful Effects
Masa Suzuki and Shinji Yamamoto
In series: Chemistry Research and Applications
In this handbook, the authors present topical research in the study of the formation mechanisms, physiological roles and common harmful effects of reactive oxygen species (ROS). Topics discussed in this compilation include the role of mitochondria in the generation of ROS; reactive oxygen species in cyanobacteria; participation of ROS in the formation of induced resistances of plants to abiotic stressors; ROS and autoimmune diseases; metal oxide nanoparticles as a source for ROS and their application in the fabrication of antimicrobial textiles; the synergistic effect of photocatalytic water purification with ROS; oxidative stress on neurodegeneration and its implications in Alzheimer's and Parkinson's disease; the interplay between ROS and gaseous messenger molecules in plant response to environmental stresses; ROS in non-invasive cancer therapy; oxidative stress in the lungs and blood induced by smoking and exercise; plant signaling networks involving reactive oxygen species and Ca2+; free radicals and the role of antioxidant enzymes on ionizing radiation resistance in zygophyllum fabago, phragmites australis, argusia sibirica L., and elegans caspica plants; reactive oxygen species and wound healing; and gender dimorphism in hepatic oxidative stress induced by protein malnutrition during pregnancy and childhood.

Infrared Spectroscopy: Theory, Developments and Applications
Daniel Cozzolino (School of Agriculture, Food and Wine, The University of Adelaide, Australia)
In series: Chemistry Research and Applications
2014.
Since Herschel discovered light in the near-infrared region as early as 1800. The NIR region of the electromagnetic spectrum, once regarded as having little potential for analytical work, has now become one of the most promising techniques for molecular spectroscopy in several analytical fields. Over the last three decades, the development of new applications of infrared spectroscopy has been associated with the increased power of computers and the progress in chemometrics (multivariate data analysis). Infrared Spectroscopy: Theory, Developments and Applications introduces and presents several novel applications of NIR and mid infrared (MIR) spectroscopy in biology, medicine, food science, pharmaceutical, polymers, minerals and art for the first time in a single book. Infrared Spectroscopy: Theory, Developments and Applications is written by an international panel of scientists with a vast expertise in the field of infrared spectroscopy, providing unique views and perspectives on both practical and theoretical applications. This book should serve as a reference source for undergraduate and postgraduate students, scientists and researchers in the field of infrared spectroscopy.

Kinetic and Thermodynamic Stability of Cerium (IV) Complexes with a Series of Aliphatic Organic Compounds
Olga Voskresenskaya (Joint Institute for Nuclear Research, Moscow, Russia)
In series: Chemistry Research and Applications
Hardcover: 978-1-62618-892-1. $110.00.
An approach to the investigation of the thermodynamic and kinetic stability of variable-valence metal complexes has been developed. Concepts of the generalized inverse problems of quantitative instrumental analysis and the complex formation equilibria are introduced. The procedure for this investigation is regarded as a sequential procedure for solving these two inverse problems. The classical methods for investigating the complex formations in solution are analyzed in terms of these in-inverse problems. Their generalizations are given to determine together with the formation constants also redox-decomposition rate constants of variable-valence metal complexes and the rate law of numerous redox processes, for which the rate-determining step is the decay of an intermediate complex, are presented. Classification is discussed and their implementation on the examples of the study of the complexation and intramolecular redox decomposition of cerium(IV) hydroxocomplexes with some dicarboxylic, oxycarboxylic acids and aliphatic polyatomic alcohols in dependence on acidity (pH 0.7-3.4) of a sulfate medium at the ionic strength I=2 and temperatures of 10.0-43.0°C by UV-Vis spectroscopy and pH measurements. The region of existence, composition, ligand speciation, stability constants of the complexes [CeOH(H-xR)n]3-nx, rate constants, and activation energies of the intramolecular redox decomposition were determined for these complexes on the sulfate background. The rate law of the redox process occurring in the studied systems on the basis of the calculated constants and set of all the chemical and algebraic equations describing the equilibria in systems is derived, and the quantitative model of this process is created. The existence of positive correlation between thermodynamic and kinetic stability of the complexes [CeOOH-xR]3-x with x > 2 and its absence for x > 2 was found on the sulfate background. Discussed also are the computational aspects of solving the regarded generalized problems. This book is well-suited for researchers in the chemistry of coordination compounds, physical chemistry, and biochemistry, as well as faculty and advanced students.
News in Chemistry, Biochemistry and Biotechnology: State of the Art and Prospects of Development
Gennady E. Zaikov, Grzegorz Nyszko, Larisa P. Krylova and Sergei D. Varfolomeev (N.M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, Moscow, Russia)
In series: Chemistry Research and Applications
Hardcover: 978-1-63117-273-1. $150.00.
In this volume, we included information about the preparation, characterization and applications of magnesium stearate, cobalt stearate and copper stearate; and the water sorption of polyvinyl chloride–luffa cylindrica composites. The control of the particle size and purity of nano zinc oxide, hyaluronan – an information rich messenger reporting on the physiological and pathophysiological status of synovial joints are also discussed. Further information is included as well, such as the surface properties of polyimide copolymers; polyvinylchloride antibacterial pre-treated by barrier plasma; new types of ethylene copolymers on the base nanocomposite; the interaction of hybrid antioxidants – ichphans with erythrocyte membrane; and changes in the structural parameters and molecular dynamics of polyhydroxybutyrate–chitosan mixed compositions under the external influences and antifungal activity of animated chitosan against three different fungi species. We collected the reviews and original papers about the collagen modified hardener for melanime-formaldehyde adhesive for increasing the water-resistance of plywood, including: the possible applications of collagen colloid from secondary raw materials as a modifier of polycondensation adhesives; preparation and properties of animal protein hydrolysates for optimal adhesive compositions; a novel supramolecular hyaluronan/polyborate system for tumour treatment with boron neutron capture therapies; the analysis of the common factors of inactivation and stabilization of glutathione peroxidase I with the use of polyacrylic acid as a way of receiving preparations for curing diseases of the central nervous system and a comparison of two bioremediation technologies for oil polluted soils.

Photochemistry: New Research
Abigail B. Smith and Nathan A. Johnson
In series: Chemistry Research and Applications
Softcover: 978-1-62808-615-7. $72.00.
The study of chemical reactions that proceed with the absorption of light by atoms or molecules is known as photochemistry. Everyday examples include photosynthesis, the degradation of plastics, and the quenching of flavin triplets by amino acids and hydrophilic carotenoids.

Polylactic Acid: Synthesis, Properties and Applications
Vincenzo Piemonte (University of Rome "La Sapienza", Rome, Italy)
In series: Chemistry Research and Applications
Softcover: 978-1-62948-148-7. $79.00.
e-book: 978-1-62100-383-0. $165.00.
This book describes the synthesis, properties and applications of PLA through fourteen original chapters that will guide the reader through a fascinating journey into the world of PLA, providing interesting insights for those who intend to use this polymer for innovative applications, or simply those who want to learn more about this very important biodegradable and bio-based plastic. PLA biodegradability introduces this polymer in a world of eco-friendly and human-friendly applications in several technological fields. In short, this book will appeal to all the readers who not only want to have a reference book of consolidated notions on PLA, but also, and especially, to those who want to discover new potentials and new application fields of this unique biodegradable polymer.
The first one makes thorough studies on an exotic phenomena, valency fluctuation occurring in metallic perovskite compounds due to the joint influences by both Ce and Eu elements inside. The latter demonstrates, with an example, how a novel ab initio method can be employed to calculate crystal parameters more accurately and efficiently. The final five chapters focus on the researches aimed at finding new applications of rare earths in industry and high technology based on their magnetic, chemical and electrochemical properties, such as, the magnetocaloric effects and performance in magnetic refrigeration of a class of amorphous materials containing heavy rare earth elements; the mechanism and applicability for rare earths to replace chromatases as corrosion inhibitors; studies employing a defect cluster model to understand local ordered defect structure formation in doped ceria, and the possibility of using it to optimize the rare earth dopant in ceria for the purpose of improving the ionic conductivity of fluoride oxides; and fabrication and characterization of new La–Mg–Ni electrode alloys by doping them with lanthanides to improve the electrochemical cycle stability and discharge capacity. The audience for this book includes theoretical and applied physicists, specialists in instrumentation (electronics), engineers (electronic, chemical engineering, and biotechnology), chemists and materials scientists in industry and academia.

Recent Advances in Gallate Research
Amanda L. Kinsey
In series: Chemistry Research and Applications
Hardcover: 978-1-63117-071-3. $150.00.
e-book: 978-1-63117-072-0. $150.00.
In this book the authors present recent advances in gallate research. Topics discussed in this compilation include the health benefits of nongallated and gallated flavan-3-ols; epigallocatechin-3-gallate, GRP78 and unfolded protein response; antioxidant and cytoprotective effects of gallate; role of gallate on inflammatory process; influence of the nature and concentration of dia- and paramagnetic doping elements on electron structure and electrophysical properties of doped lanthanum gallate; and therapeutic potential of gallic acid and its derivatives.

Textiles: History, Properties and Performance and Applications
Md. Ibrahim H. Mondal (Department of Applied Chemistry & Chemical Engineering, Rajshahi University, Rajshahi, Bangladesh)
In series: Chemistry Research and Applications
2014.
Hardcover: 978-1-63117-262-5. $230.00.
This collection provides a broad overview of textiles covering historical, fundamental and industrial application topics, including vintage fashion and design; synthesis and application of cellulose derivatives and dyes; color management and photo-responsive textile applications in the field of printing; the preservation of textile objects in different environments; smart textiles; modification by physico-chemical methods for better performance and extra-properties; electronic, medical and health care applications; comfort finishing of textile materials; effects of clothing materials on the thermoregulatory response of the human body; new applications of hemp fibers; microscopic and spinning related topics. Textiles are essential and one of the most important classes of materials used by humanity since ancient times. Despite textiles having been around and in use for so long, advances and improvements continue to be made. This book contains 22 invited contributions written by leading experts in the field of textiles. Each chapter presents and discusses updated scientific and technological advances during this period. Hence, this collection will be a valuable reference for those researching and manufacturing textiles, as well as those that are interested in a wider area of textiles.

Toluene: Chemical Properties, Applications and Toxicology
Marco C. Palminteri
In series: Chemistry Research and Applications
In series: Chemical Engineering Methods and Technology
Hardcover: 978-1-62808-739-0. $95.00.
Toluene, also known as methylbenzene, phenylmethane and toluol, is a colorless and clear liquid with a distinct smell, characteristic of the aromatic hydrocarbon family of chemical compounds including benzene. In this book, the authors discuss the chemical properties, applications and toxicology characteristics of toluene. Topics include a toxicokinetic and toxicologic study of toluene and inhalation exposure levels; the immediate and persisting effect of toluene chronic exposure on hippocampal cell loss, learning and memory in adolescent and adult rats; the inhibitory, toxic and structure effects of toluene on microbial consortia involved in wastewater treatment; and the influence of toluene on postnatal neurogenesis of limbic and motor systems, metabolism and behavior of animals and correction of disturbance by antioxidants.

Trends in Polyaniline Research
Takeo Ohsaka, Al-Nakib Chowdhury, Aminur Rahman and Mominul Islam (Department of Chemistry, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh)
In series: Chemistry Research and Applications
In series: Polymer Science and Technology
Hardcover: 978-1-62808-424-5. $175.00.
Polyaniline (PAni), an interesting conducting polymer (CP), has attracted great attention over the last decades due to its tunable properties and potential applications in multidisciplinary areas. It is the most promising conducting polymer because of its ease of synthesis, low-cost monomer, and also its higher thermal stability compared to other CPs. This book provides a comprehensive review of the recent trends on PAni research. It is an excellent reference book which covers the latest research on PAni synthesis, properties and applications, from researchers across various disciplines including physics, chemistry, materials science, nanoscience and engineering, based on their expertise in these fields. The book “Trends in Polyaniline Research” is a true attempt to make available the recent developments in PAni synthesis, properties, and its application, in a single volume and can be recommended as a special reference book for physicists, chemists, material scientists, nanotechnologists, engineers and graduate students.

Communications

Advances in Communications and Media Research. Volume 9
Anthony V. Stavros
In series: Advances in Communications and Media Research
Hardcover: 978-1-62808-237-1. $150.00.
In a society predicated on information, the media has a pervasive presence. From government policy to leisure television, the information age touches us all. The papers collected in this book...
This book focuses on updating the statutory framework for changes in market structure throughout the communications sector. Technology, Internet Protocol (IP), broadband networks, and enacted prior to the commercial development and deployment of digital.

Communication Systems: New Research
Vyacheslav Tuzukov (School of Electrical Engineering & Computer Science, Kyungpook National University, Sankyuk-dong, Buk-gu, Daegu South Korea)
In series: Media and Communications - Technologies, Policies and Challenges
Hardcover: 978-1-62618-654-5. $175.00.
This book provides a comprehensive technical guide covering the fundamentals of recent research avenues, advances, and open issues in communication, including wireless, mobile, and satellite communications to the readers; new ideas and approaches to design communications systems with high performance in comparison with employed communication systems. Discussed are the problems related to cognitive radio technology and future trends in the spectrum access of next generation; advances in medium access control for cognitive radio networks; radio resources management and femtocells employment in L.T.E networks; intrusion detection in vehicular ad-hoc networks; connectivity analysis in vehicular ad-hoc networks; generalized approach to signal processing in communication systems, including wireless communications, mobile communications, and satellite communications; ultra-wide band communications principles in the extremely high frequency; communication systems with minimum symbol error rate; challenges and applications of space-time coding in multiple-input multiple output wireless communications; generalized hyper-geometric functions with applications to performance analysis; system approach to modeling communicative processes. Written by internationally recognized professors, researchers, and experts in communication systems, this book is useful for practitioners, researchers, engineers, and students.

Digital Age Communications: Statutory Framework Issues
Philip Linch
In series: Media and Communications - Technologies, Policies and Challenges
Softcover: 978-1-62948-822-6. $52.00.
The statutory framework for the communications sector largely was enacted prior to the commercial development and deployment of digital technology, Internet Protocol (IP), broadband networks, and online voice, data, and video services. These new technologies have driven changes in market structure throughout the communications sector. This book focuses on updating the statutory framework for communications for the digital age, and online video distributors and the current statutory and regulatory framework.
Advances in Cloud Computing Research
Muthu Ramachandran (Leeds Metropolitan University, UK)
In series: Computer Science, Technology and Applications
Hardcover: 978-1-63117-192-5. $150.00.
Cloud computing has evolved to address the availability of computing services and resources anywhere, anytime, and on any device. In particular, computing hardware and software often gets outdated and, hence, it is wise to outsource computing resources and to manage their IT infrastructures outside of their company premises, which is more cost-effective than is the case at present. Cloud computing is emerging rapidly and software as a service paradigm has increasing its demand for more services. However, it is crucial to maintain and manage this growth in such a way that the cloud technology remains cost efficient. This book provides advances in cloud computing ranging from large-scale applications, business services, financial services, to small-scale applications. This book also provides insights into energy saving methods for cloud computing paradigms. This book consists of two parts. Part 1 provides good practices on cloud applications including Agile approaches to cloud computing and Part 2 provides good practices on green cloud and energy efficient cloud computing models.

Advances in Image Analysis Research
Roger M. Echon (Integrated Neurohealth Research Center, San Antonio, Texas, USA)
In series: Computer Science, Technology and Applications
Hardcover: 978-1-62948-602-4. $175.00.
e-book: 978-1-62948-603-1. $175.00.
The primary goal of this book is to provide students and practitioners in the field of image analysis with cohesive information and innovative (novel) techniques compiled from independent peer-reviewed studies across the globe. Image analysis is a multi-disciplinary subject that covers expansive subjects on photography, optics, physics, mathematics, software engineering, electronics, computer science, and information technology. The integration of these multi-disciplinary studies became the foundations of specialized and emerging fields, such as medical imaging, machine vision, image processing, and computer graphics. The term image analysis deals with the process of extracting features from digital images and analyzing these extracted features into measurable parameters. Therefore, image analysis is composed of three integrated parts: a device that transform electromagnetic energy into an image (i.e., photography); a method of extracting features from an image (image processing); and an analytical method that measures extracted parameters (mathematics). Although a number of books and publications are available in the study of image analysis, no true integration is available that provides a singular reference to tie in the foundation of each subject into a unified format. The overarching aim of this book is to fill these gaps and describe each contributing discipline into the science of image analysis. Consequently, this book is presented into three unified sections.

China's Evolving IT Capabilities: Cloud Computing, Network Operations and Cyber Espionage
Lucas Solorio
In series: Computer Science, Technology and Applications
Hardcover: 978-1-62948-935-3. $135.00.
In recent years the Chinese government has prioritized the development of cloud computing technology with the twin goals of expanding Chinese military and civilian access to cloud computing information technology (IT) resources and creating an internationally competitive Chinese cloud computing service industry. As part of a larger development strategy for advancing Chinese software and information technology services, the Chinese government plans to make more than one billion dollars (USD) available over the next few years to drive cloud computing development. This book characterizes the nature, extent, and future prospects of Chinese cloud computing development from both private-sector and governmental perspectives. It also discusses Chinese capabilities for computer network operations and cyber espionage.

Malware and Computer Security Incidents: Handling Guides
Mark Borrelli
In series: Computer Science, Technology and Applications
Hardcover: 978-1-62948-191-3. $110.00.
e-book: 978-1-62948-192-0. $110.00.
Malware, also known as malicious code, refers to a program that is covertly inserted into another program with the intent to destroy data, run destructive or intrusive programs, or otherwise compromise the confidentiality, integrity, or availability of the victim’s data, applications, or operating system. Malware is the most common external threat to most hosts, causing widespread damage and disruption and necessitating extensive recovery efforts within most organizations. This book provides recommendations for improving an organization’s malware incident prevention measures. It also gives extensive recommendations for enhancing an organization's existing incident response capability so that it is better prepared to handle malware incidents, particularly widespread ones.

Progress in Data Encryption Research
Camel Tanougast (LCOMS – Department of ASEC, University of Lorraine at Metz, France)
In series: Computer Science, Technology and Applications
Hardcover: 978-1-62948-258-3. $150.00.
e-book: 978-1-62948-259-0. $150.00.
Most books in cryptography deal with theory, generally introducing mathematically expressed algorithms without taking into account new research or showing how they are realized in actual software and hardware technology. This book, on the other hand, introduces new current cryptographic systems while giving practical details and implementations in order to ensure the dissemination of new knowledge and the transfer of this research into the field of applied engineering. This book focuses on new data encryption designs and data protection schemes from academic research results and their practical implementation in several application fields. It covers the theory and practice of the research of robust encryption, including chaotic encryption and decryption systems, chaotic synchronization encrypter/decrypter, data confidentiality protection and integrity, data authentication, key generation, hyperchaotic or chaotic random number generators and hardware/software realizations. This book also addresses the digital media (audio, image, and video) protection and the encryption-compression technique. "Progress in Data Encryption Research” is a comprehensive text that is suitable as a handbook for understanding the novelty of data encryption and security, as well as for hardware and software engineers who are interested in building new secure systems. Researchers who want to know the trend of developing new practical data encryption and data protection schemes, engineers
from the industry and students can use this book as a first step to encryption engineering.

Recent Advances in Artificial Intelligence Research
Ambrogio Bacciga and Renato Nalitato
In series: Computer Science, Technology and Applications
Softcover: 978-1-62808-807-6. $120.00.
e-book: 978-1-62808-808-3. $120.00.
Artificial intelligence (AI) is "the study and design of intelligent agents", where an intelligent agent is a system that perceives its environment and takes actions that maximize its chances of success. In this book, the authors present recent advances in the study of artificial intelligence with topics that include a Twitter specific lexicon for sentiment analysis; hybrid unsupervised-supervised artificial neural networks for modeling activated sludge wastewater treatment plants; fast and visible trajectory planning in 3D urban environments based on local point clouds data; and "smart brakes" - the neuro-genetic optimization of brake actuation pressure.

CONSTRUCTION

Highway Bridge Replacement: Processes, Techniques, and Advancements
Yong Bai and Jun Huan (The University of Kansas Lawrence, KS, USA), Seonghoon Kim (Georgia Southern University, Statesboro, GA, USA)
In series: Construction Materials and Engineering
2013. 182 pp.
Hardcover: 978-1-61122-300-2. $85.00.
Softcover: 978-1-62808-311-8. $59.00.
It is widely acknowledged that there is an increasing problem in maintenance of the American civil infrastructure. Highways, bridges, sewers, railroads, harbors, and public buildings built in the 1950s and 1960s are wearing out, while inflation-adjusted federal spending on infrastructure has fallen. The current situation, with respect to highway bridge maintenance, is in fact so severe that many states cannot afford to attend in need of replacement, so they are focusing on the most severe cases. Recently, rapid assessment, repair, and replacement of damaged highway bridge after extreme events have been given close attention to by government agencies, engineering and construction communities, and the general public. This book presents the complicated undertaking of highway bridge replacement in an easy-to-read format.

Multi-Parametric Concrete Compositions Design
Leonid Dvorkin, Oleg Dvorkin (National University of Water Management and Natural Resources Use, Rivne, Ukraine) and Y. Ribakov (Ariel University Center of Samaria, Ariel, Israel)
In series: Construction Materials and Engineering
In series: Materials Science and Technologies
2013. 325 pp.
Hardcover: 978-1-62417-911-2. $150.00.
Concrete remains a dominant constructive material in the 21st century. Long-term experience of concrete application in all construction areas shows that its main efficiency and reliability condition is conformity of the material quality characteristics to its performance in structures and elements. This book explores the results of experimental and theoretical investigations carried out by the authors to develop the main theoretical concepts in the multi-parametric design of cement concrete compositions. A complex of design dependencies is proposed for predicting properties of concrete mixtures and hardened concrete, considering additional technological factors. Algorithms for different types of concrete compositions’ design are presented as examples of these algorithms for specific industrial conditions. This book can be used by researchers and engineers, specialized in the field of concrete technology, as well as by graduate and undergraduate students.

DEFENSE, SECURITY

Ballistic Missile Defense: Select Issues and Policies
Ayoub Vermeirsch
In series: Defense, Security and Strategies
Hardcover: 978-1-62808-909-7. $110.00.
The ballistic missile threat is increasing both quantitatively and qualitatively, and is likely to continue to do so over the next decade. Current global trends indicate that ballistic missile systems are becoming more flexible, mobile, survivable, reliable, and accurate, while also increasing in range. A number of states are also working to increase the protection of their ballistic missiles from pre-launch attack and to increase their effectiveness in penetrating missile defenses. Several states are also developing nuclear, chemical, and/or biological warheads for their missiles. Such capabilities could be significant sources of military advantage during a conflict. But they may be equally significant in times of relative peace, when they undergird efforts to coerce states near and far. Regional actors such as North Korea and Iran continue to develop long-range missiles that will be threatening to the United States. There is some uncertainty about when and how this type of intercontinental ballistic missile (ICBM) threat to
the U.S. homeland will mature, but there is no uncertainty about the existence of regional threats. They are clear and present. The threat from short-range, medium-range, and intermediate-range ballistic missiles (SRBMs, MRBMs, and RBMs) in regions where the United States deploys forces and maintains security relationships is growing at a particularly rapid pace. This book provides an overview of select issues and policies of the ballistic missile defense program.

DENTAL

Oral Health Care for Socially Disadvantaged Communities
Febronia Kokulengya Kahabuka (School of Dentistry, Tanzania) Emil Namakuka Kikwilu and Irene Anderson Kida
In series: Dental Science, Materials and Technology
Hardcover: 978-1-62948-896-4. $165.00.
Softcover: 978-1-62948-287-3. $79.00.
This book gathers the current information on management of common oral conditions and proposes an appropriate package for underdeveloped communities. Practical solutions for managing oral conditions in the existing social, political and economic context of the developing countries is provided. This book is a good reference material for undergraduate and postgraduate students, academicians, as well as practicing dentists. In this book, the Basic Package of Oral Care (BPOC) forms a pillar of the presentation. A traumatic Restorative Treatment, affordable fluoride tooth paste and relief of oral pain are presented as an essential minimum package of oral care for any community. This book advocates home care and outreach programmes to reach the elderly. The already existing oral health care delivery system is challenged. This book provides evidence-based appropriate oral care.

DIGESTIVE DISEASES

Barrett's Esophagus: Risk Factors, Diagnosis and Management
John M. Babine and Melissa A. Calahan
In series: Digestive Diseases - Research and Clinical Developments
Softcover: 978-1-62948-442-6. $72.00.
Barrett's esophagus refers to an abnormal change or metaplasia in the cells of the lower portion of the esophagus. When the normal squamous epithelium lining of the esophagus is replaced by goblet cells, Barrett's esophagus is diagnosed. The medical significance of Barrett's esophagus is its strong association with esophageal adenocarcinoma, a particularly lethal cancer. In this book, the authors discuss the risk factors, diagnosis and management of Barrett's esophagus. Topics include chemoprevention strategies including aspirin and non-steroidal inflammatory agents in treating Barrett's esophagus; and endoscopic ablative technique used in the management of Barrett's esophagus and early esophageal cancer; a histopathological analysis of protease activated receptor-2 (PAR-2) and cyclooxygenase-2 (COX-2) immunoposssion in esophageal glandular metaplasia; and the impact of inflammation-metaplasia-adenocarcinoma sequence and inflammatory microenvironment in esophageal carcinogenesis using surgical rat models.

DISASTERS

Natural Catastrophes: Risk Financing and Insurance Issues
Oliver H. Rohde
In series: Natural Disaster Research, Prediction and Mitigation
2013. 144 pp.
Hardcover: 978-1-62948-449-5. $110.00.
The four major types of natural environmental hazards that can result in property damages or lost lives are (1) geophysical events, such as earthquakes, tsunamis, and volcanic eruptions; (2) meteorological events, such as hurricanes and tropical storms, typically generated in the Caribbean Sea and Atlantic Ocean; (3) hydrological events, such as floods; and (4) climatological events, such as extreme temperature, drought, and wildfires. Economic losses (both insured and uninsured) from natural environmental hazards, especially from meteorological and climatological events, have increased in recent decades and have occurred with large spatial and interannual variability. For example, 8 of the 10 most costly catastrophes in the United States have occurred since 2000, including Hurricane Katrina (2005), which caused more than $80 billion in economic losses (both insured and uninsured) to private property and infrastructure and, more recently, Hurricane Sandy (2012), which caused more than $65 billion in economic losses. Most observers agree that it is highly likely that the United States will continue to experience increasing losses from natural catastrophes and that these losses will place increasing fiscal pressure on federal, state, and local governments as well as private risk transfer markets, which are currently responsible for a sizable share of the total cost of financing recovery and reconstruction. This book examines the rising cost of financing the recovery and reconstruction following natural disasters; reports of the nation’s increasing vulnerability (and resilience) to coastal hazards; questions concerning the capacity of state and local government officials and private insurers to deal with the rising costs; and disagreements concerning the appropriate role for the federal government in dealing with these costs which have all become major topics of congressional debate.

EARTH SCIENCES

Carbonates: Sedimentology, Geographical Distribution and Economic Importance
Bailey A. Hughes and Thompson C. Wagner
In series: Geology and Mineralogy Research Developments
In series: Chemical Engineering Methods and Technology
2013. 103 pp.
Softcover: 978-1-62948-178-4. $69.00.
In this book, the authors present current research in the study of the sedimentology, geographical distribution and economic importance of carbonates. Topics discussed in this compilation include the alternative procedures for the synthesis of linear carbonates from alcohols and carbon dioxide; functional polymers based on carbonates obtained from CO2; an experiment using soil micromorphology and image analysis for physical redistribution of calcium carbonate in soil pore systems; and the types of petroleum reservoirs in carbonate sediments of the Russian Basin.
Check Dams, Morphological Adjustments and Erosion Control in Torrential Streams
Carmelo Conesa-Garcia (University of Murcia, Murcia, Spain) and Mario Arístide Lenz (University of Padova, Italy)
In series: Environmental Science, Engineering and Technology
Softcover: 978-1-62618-856-3. $69.00.
Check dams are a potentially effective instrument for planning of hydrological risks and soil conservation. Cross structure sequences have been used in numerous areas in the world to control flooding, recharge aquifers and stabilize mountain streams, gullies and high-gradient ephemeral channels. Nevertheless, it is little known of the effectiveness of check dams and their morphological effects. This book is an attempt to compile different based-field and laboratory research works in torrential head water areas. Bed stability variations will be investigated according to check dams types, bedrock control, bed slope, channel roughness, lateral sediment input, and highly variable sediment transport capacity. Though the main purpose of check dams is to stabilize the channel bed and diminish the boundary shear stress reaching a minor longitudinal slope, they can reduce the volume of channel-stored material favouring local scour processes downstream and occasionally destabilize the hill slopes upstream.

Continental Shelf: Geographical Distribution, Biota and Ecological Significance
Lawrence Scanlon and Joyce L. Ranieri
In series: Earth Sciences in the 21st Century
2013, 207 pp.
Hardcover: 978-1-62948-330-6. $120.00.
e-book: 978-1-62948-331-3. $120.00.
In this book, the authors discuss the geographical distribution, biota and ecological significance of the Continental Shelf. Topics include the sea bottoms of the Continental Shelf of the Naples Bay in Southern Italy and its inferences on the volcanic and sedimentary processes on stratigraphic architecture; the geomorphological characteristics of the submerged topography along the Egyptian Red Sea Coast; and the benthic boundary layer (Bbl) of the macrofaunal communities structure over oligotrophic continental shelves.

Germanium: Characteristics, Sources and Applications
Edward E. Feuerstein
In series: Geology and Mineralogy Research Developments
2013, 251 pp.
Hardcover: 978-1-62948-180-7. $150.00.
Germanium is a relatively scarce element found in the Earth’s crust at a concentration of 0.007% in the form of bromides, chlorides, fluorides, iodides, hydrides, oxides, selenides, sulfides and tellurides. It occurs mostly as germanium oxide (GeO2) and germanium tetrachloride (GeCl4). Germanium is widely used as a component in electronic and optical devices and has found several applications in metallurgy, chemotherapy, nanotechnology and catalysis. In this book, the authors present current research in the study of the characteristics, sources and applications of germanium. Topics include metal-induced crystallization of amorphous germanium and microstructural characteristics; mechanistic analysis of reactions of cyclic ylide-like carbene analogues containing germanium and other heavier group 14 elements; X-ray crystal optics based on germanium single crystals; the effect of oxidation on the properties of germanium-containing catalysts for naphtha reforming; the characterization of Ge epitaxial film on Si(100) substrates using a three-step growth approach; and the synthesis, structure and optical properties of germanium and silicon nanoparticles encapsulated in oxide layers.

Hematite: Sources, Properties and Applications
Deniz Morel
In series: Geology and Mineralogy Research Developments
2013, 146 pp.
Softcover: 978-1-62808-500-6. $69.00.
Hematite is the mineral form of iron(III) oxide (Fe2O3), one of several iron oxides. In this book, the authors present current research in the study of the sources, properties and applications of hematite. Topics discussed include nanostructured hematite for solar driven hydrogen generation; reactions at the hematite surface with Fe(II) and environmental contaminants; the catalytic properties of sulfated hematite in toluene disproportionation; hematite nanotubes and nanorings; and the synthesis, characterization and photocatalytic property of nanostructured hematite.

Horizons in Earth Science Research. Volume 10
Benjamin Veress and Jozsi Szegethy
In series: Horizons in Earth Science Research
2013, 261 pp.
Hardcover: 978-1-62948-125-8. $150.00.
This book presents and discusses research in the field of earth science, with a focus on the stratigraphic setting of continental shelves of Southern Italy investigated through seismic stratigraphy: crust and upper mantle structure of Northern Eurasia from long-range seismic profiling with chemical and nuclear explosions; multi-storied plantation surfaces, base-level control, and the morphotectonic interpretation of crustal movements in the basement regions of a case study from Zimbabwe; hydrochemical aspects of groundwater occurrences at Basaltic rocks, Paraña Basin, Brazil; localization of geochemical aureoles of rare earths in the Northern Region of the Republic of Moldova; groundwater sources, geological formation, and their environment in the Sudan; shale and its beneficial and dangerous characteristics for human beings; remote sensing techniques as an effective tool for systematic survey and better management of natural resources; and the use of climbing plants in heritage bioclorosion.

Permafrost: Distribution, Composition and Impacts on Infrastructure and Ecosystems
Oleg S. Pokrovsky (CNRS, Toulouse, France and Tomsk State University, Russia)
In series: Environmental Health - Physical, Chemical and Biological Factors
Hardcover: 978-1-62948-830-1. $150.00.
e-book: 978-1-62948-837-0. $150.00.
This book is in response to the growing demand from academics and the general public for state-of-the-art research in permafrost science and, in particular, information about its impacts on infrastructure and ecosystems. It brings together research from diverse but highly complementary scientific disciplines to illuminate the main physical, chemical and biological processes occurring in permafrost systems and identifies the possible mechanisms controlling fluxes of energy and matter at various scales. Taken together, the 8 chapters of this book provide a comprehensive, up-to-date description and analysis of the basic geomorphological, physical, hydrological, chemical and biological aspects of permafrost-affected ecosystems, their interaction
Problems of Biosphere Origin and Evolution. Volume 1
E. M. Galimov (Vernadsky Institute of Geochemistry and Analytical Chemistry, Russian Academy of Sciences, Moscow, Russia)
In series: Geology and Mineralogy Research Developments
In series: Earth Sciences in the 21st Century
2013. 481 pp.
Hardcover: 978-1-62257-770-5. $230.00.
By definition, biosphere is the Earth’s geological shell populated by living organisms. Therefore, the biosphere’s origin and evolution is primarily a geological problem. At present geological problems are solved using methods of physics, chemistry, biology, and mathematics. The multidisciplinary approach is a basis of this book. Life origin problems occupy the main part of the book. What is life, and can we understand its origin and evolution on the basis of laws of physics and chemistry? A number of works are dedicated to experimental study of the synthesis of organic compounds of the prebiotic significance, including ATP and photoactive systems. The characteristic feature of our scientific approach is to consider the problem of life origin in the context of the origin and evolution of the solar system, beginning with the protoplanetary stage and including the events of the Earth’s early history. The last chapter comprises papers that concern modern problems and approaches to the study of various aspects of biological evolution. The present edition is a collection of articles by scientists representing more than 20 institutes of the Russian Academy of Sciences and other organizations, joined by the science program “Problems of Biosphere Origin and Evolution”. This book will be interesting for a wide range of researchers: physicists, chemists, biologists, mathematicians. The book represents the stance of the Russian scientific school on the problem of life origin, which does not always coincide with opinions of other scientific schools.

Sandstone: Geochemistry, Uses and Environmental Impact
Afsoon Moatari Kazerouni (Geology Department, Aarhus University, Copenhagen, Denmark)
In series: Geology and Mineralogy Research Developments
Hardcover: 978-1-62948-382-5. $150.00.
This book is exclusively devoted to a broad perspective of research interests centered around environmental geochemistry and the coupling of geology and geochemistry in sandstones. The main focus is to provide a well-balanced, up-to-date overview of all aspects related to geology, geochemistry and the understanding of ground-water systems, as geochemistry has contributed significantly to the understanding of ground-water systems. Water imbibition is fundamental to waterflood performance in low permeability reservoir rocks. Measuring the thermal properties of rocks and rock-fluid systems is difficult and time consuming and the results from such measurements are of limited value unless complete descriptions of the rock and fluids are given. The book also addresses an existing need for a method of predicting thermal behavior from other more easily measurable properties, cementation of sandstones and sources of silica during the diagenesis. Presented here are correlations developed for predicting the thermal conductivity of consolidated sandstones from the knowledge of density, porosity, permeability, and the formation resistivity factor.

Theory of Evolution in Snow Cover Science-Atlas Monograph
Erland G. Kolomyns (Institute of Ecology of the Volga River Basin, Russian Academy of Sciences, Moscow, Russia)
In series: Earth Sciences in the 21st Century
2013. 426 pp.
Hardcover: 978-1-62808-988-2. $175.00.
e-book: 978-1-62948-027-5. $175.00.
The Atlas-monograph presents a novel approach to the study of the development of snow cover based on its crystal morphology and the fundamental laws of natural symmetry. The Atlas displays more than 320 microphotos of crystals of depth hoar and newly fallen, wind-transported, and small- and medium-grained snow in various mountain and flatland regions of Russia. The principal types of geometrical symmetry are shown along with the phase forms of crystal growth and decomposition and constructive and regressive metamorphism in both loose and dense snow. Illustrated are the morphological features of contact interaction between particles in crystal aggregates under free and tightly packed conditions of growth. Photatables of crystals are furnished with schematics and essential explanatory comments underscoring the most important crystal-morphological features of the hydrothermal fields and the fields of deforming stresses in the snowpack. The presented conceptual model describes the unclosed sublimation-metamorphic evolution cycle of seasonal snow cover and the regional variants of this cycle as its polymorphic (in that number regional) modifications. This model serves as a cornerstone of evolutionary concept. Snow cover is represented as a natural community of the shapes of growing crystals interacting with each other and exposed to environmental influences. It is worked out of the empirical deterministic models describing the sublimation-
metamorphic cycle of seasonal snow cover and the polymorphic variants of this cycle. The main driving force of processes yielding an evolutionary row of crystals is the internal interactions within a snow pack. For all that the factor of time (the age of the genetic player) plays a crucial role in sublimation metamorphism. Stadiality of the forms of crystal growth and self-development snow layers are revealed. They are a result of the successive process of superposition of ice crystal-chemical symmetry and dissymmetry of the whole system, soil–snow–atmosphere, according to the known P. Curie principle. The book is intended for glaciologists and snow scientists employed in the study of the structure of snow cover and in avalanche forecasting as well as for specialists in the field of mineralogical crystallography and crystal growth.

Upwelling: Mechanisms, Ecological Effects and Threats to Biodiversity

Williams E. Fischer and Adams B. Green

In series: Oceanography and Ocean Engineering

2013. 103 pp.
Softcover: 978-1-62948-174-6. $69.00.

An upwelling is a rise of deep sea waters to the surface. A minimum of four types of upwelling have been identified: coastal upwelling; large-scale wind-induced upwelling in the open ocean; upwelling related to tropical cyclones; and upwelling related to topography. In this book, the authors present current research in the study of the mechanisms, ecological effects and threats to biodiversity due to upwelling. Topics discussed in this compilation include the ecological effects of coastal upwelling in Cabo Frio, Rio de Janeiro, Brazil; Namibian upwelling and its effects on macrozoobenthic diversity; mechanisms of impact on chlorophyll and upwelling in the Northern Black Sea; distribution, mechanisms, and biologic and climatic significance in upwelling and downwelling.

EDUCATION

Active and Collaborative Learning: Practices, Problems and Prospects

Mohamed Hamada (Software Engineering Lab, The University of Aizu, Aizuwanakamatsu, Fukushima, Japan)

In series: Education in a Competitive and Globalizing World

Hardcover: 978-1-62948-066-4. $150.00.
e-book: 978-1-62948-069-5. $150.00.

Active and collaborative learning provide a powerful mechanism to enhance depth of learning, increase material retention, and get students involved with the material instead of passively listening to a lecture. Active learning is a learning style with students involved in the learning process as active partners: meaning they are “doing”, “observing” and “communicating” instead of just “listening” as in the traditional (lecture-driven) learning style. In active learning, students are much more actively engaged in their own learning while educators take a more guiding role. Collaborative learning is a learning style in which a group of learners (two or more) study together in a collaborative environment. Collaborative learning is based on the model that knowledge can be created within a population where members actively interact by sharing experiences and take on asymmetric roles. Active and collaborative learning approaches are thought to promote the processing of skills/knowledge at a much deeper level than passive and individual learning. This book covers a wide range of interesting topics related to active and collaborative learning. The first chapter covers the background and a comprehensive survey of active and collaborative learning. Chapters two, three, four, and five cover the use of active and collaborative learning in programming, web analysis, and social settings, respectively. Chapters six, seven, and eight cover the applications of active and collaborative learning in mobile and cloud computing related topics. The rest of the book (chapters nine, ten, and eleven) covers a wide range of the modern applications of active and collaborative learning in several medical and health related areas.

Discourse Perspectives on Second and/or Foreign Language Teaching and Learning

Dogan Yuksel and Banu Inan (Kocaeli University, Faculty of Education, ELT Department, Turkey)

In series: Education in a Competitive and Globalizing World

Hardcover: 978-1-62808-867-0. $85.00.

Discourse can be understood as the sum of linguistic usages and metalinguistic manners about a social practice. It examines language-in-use with the help of the tools that would enable us to get a deeper understanding of what is said or unsaid. Analysis of discourse would help us understand social, cultural, psychological and academic dynamics that are interwoven in the utterances of interlocutors as they use language. This book covers a range of theoretical and applied studies on the examination of discourse in various second and foreign language learning and teaching contexts. Basically, it includes studies that specifically focus on different aspects of discourse in the teaching of all four skills; reading, writing, listening and speaking. Three theoretical chapters on conducting discourse analysis research, the use of corpus linguistics and historical review of discourse analysis perspectives enrich the scope and content of the book. Researchers from different teaching and learning settings, including Turkey, China, and the USA, contributed to this volume. The target audience of the book are undergraduate and graduate students in different foreign and second language departments, and teachers, researchers and academicians of foreign and second languages. "Discourse Perspectives on Second and/or Foreign Language Teaching and Learning" will facilitate the understanding of discourse by portraying empirical and theoretical studies on discourse. It covers quite different perspectives (e.g., sociocultural theory of mind perspective, critical discourse analysis and psychological and/or mainstream perspectives) of various topics in discourse (e.g., classroom interaction, written discourse, corpus linguistics, oral interviews, discourse of blogs, technology and discourse, etc). The first three chapters provide a review of discourse and how it is conceptualized to various target groups of people (e.g., graduate students, teachers, researchers and academicians) assuming no prior knowledge. The other chapters focus on different aspects of discourse both in and outside the classroom. This book provides teachers, learners and researchers of second and/or foreign languages with the tools to analyze and/or examine language inside and outside their classrooms.


Mohamed Hamada (Department of Computer Software, University of Aizu, Aizuwanakamatsu, Japan)

In series: Education in a Competitive and Globalizing World

Hardcover: 978-1-62618-961-4. $150.00.

Developments in computer technologies and telecommunications make e-learning a natural evolution and extension of traditional lecture driven style learning. E-learning technologies can extend course
content with multimedia systems, active learning opportunities and instructional technology to facilitate education in all areas of study to a broad range of learners. E-learning allows for the creation of learning communities that overcome the constraints of time, distance, and boundaries. This book covers a wide range of interesting e-learning topics. The first four chapters cover the background, evolution, new technologies, and the 2nd generation of e-learning in the 21st century. Chapters 5 and 6 cover the advancement in e-learning tools. The rest of the book covers a wide range of modern applications of e-learning in several important areas such as: medical related applications (Chapters 7, 8, and 9), social networks (Chapters 10 and 11), culture impact on e-learning (Chapters 12, 13, and 14) and traffic related issues (Chapter 15).

Federal Pell Grant Program: Elements, Issues, and Trends
Iola Thibault
In series: Education in a Competitive and Globalizing World
2013. 121 pp.
Softcover: 978-1-62948-550-8. $52.00.
e-book: 978-1-62948-551-5. $52.00.
The federal Pell Grant program is the single largest source of federal grant aid supporting postsecondary education students. The program provided over $33.5 billion to approximately 9.7 million undergraduate students in FY2011. For FY2012, the total maximum Pell Grant was funded at $5,550. The program is funded primarily through annual discretionary appropriations, although in recent years mandatory appropriations have played a smaller yet increasing role in the program. The statutory authority for the Pell Grant program was most recently reauthorized by the Higher Education Opportunity Act of 2008. Pell Grants are need-based aid that is intended to be the foundation for all federal student aid awarded to undergraduates. There is no absolute income threshold that determines who is eligible or ineligible for Pell Grants. Nevertheless, Pell Grant recipients are primarily low-income. In FY2010, an estimated 74% of all Pell Grant recipients had a total family income at or below $30,000. This book reviews how the program works and provides an analysis of recent program costs and funding, recipients (numbers and characteristics), and the role the program plays in the distribution of federal student aid.
In addition, this book highlights some of the current legislative issues pertaining to the program.

Innovation and Creativity in ELT Methodology
Handoyo Puji Widodo (Politeknik Negeri Jember, Indonesia), Andrzej Cirocki (Gdańsk University, Poland)
In series: Education in a Competitive and Globalizing World
Softcover: 978-1-62948-146-3. $69.00.
e-book: 978-1-62081-768-1. $140.00
Innovation and Creativity in ELT Methodology comprises a collection of pedagogical articles, giving language teachers a fascinating insight into the way different teaching approaches, methods, procedures and techniques can be explored in the language classroom. Written by established and emerging scholars, this edited volume covers current key issues in teaching, including four macro language skills like listening, speaking, reading and writing; three micro language skills such as pronunciation, vocabulary and grammar, as well as English through content areas and technology—CALL. This is a valuable resource book for language teachers, language materials developers, pre-service language teachers, and language teacher educators who would like to explore and creatively craft their own teaching practices to help language learners become competent users of the target language.

Learning Environments: Technologies, Challenges and Impact Assessment
Robert Kenneth Atkinson (The School of Computing, Informatics, and Decision Systems Engineering, Ira A. Fulton Schools of Engineering, Arizona State University, Tempe, AZ, USA)
In series: Education in a Competitive and Globalizing World
2013. 312 pp.
Hardcover: 978-1-62808-594-5. $150.00.
e-book: 978-1-62808-700-0. $150.00.
In this book, the authors present current research in the study of the new technologies, challenges and impact assessments of learning environments. Topics discussed include MyiLOGS online technology for optimizing teachers' instructional progress management; a three-pronged approach to the design of technology-rich learning environments; using Geographic Information Systems (GIS) in support of contextually rich learning environments that promote higher order thinking skills, meaningful learning and authentic environmental scientific inquiry; LEGO Mindstorms NXT; instruction via observational learning techniques; the effect of computer use on Chinese as a Foreign Language (CFL); an integrated educational technology evaluation framework; students' compliance to technology-supported learning environments; student response systems and the impact on their learning environment, attitudes and achievement; visual thinking networking; collaborative approaches in virtual spaces; and the chemistry classroom environment.

Mentoring: Practices, Potential Challenges and Benefits
Michael F. Shaughnessy (Eastern New Mexico University, NM, USA)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-62808-574-7. $150.00.
The book covers a range of topics from mentoring graduate students, to mentoring in post graduate medical education. Often, it is not just the protégé that benefits, but often the mentor who also learns about caring and sharing as well as the therapeutic elements of mentoring. The difference between counseling and mentoring (there is sometimes a fine line) is also reviewed and discussed. Some chapters directly address racial, ethinical, and cultural issues as well as complex adaptive mentoring programs. Some of the subtle nuances of mentoring are also explored including the phases of mentoring, the structuring or lack of structure in a mentor relationship and the benefits and risk of mentoring in cross-cultural supervision. Mentoring in the realm of pre-service teacher education is also examined as well as the differences between mentoring, coaching and supervision. Tangential concerns such as “mindful mentoring” in healthcare and medicine and the importance of data gathering and empirical research as well as data interpretation are also addressed. The book contains experts from literally around the world including England, Germany, Australia, Italy, and also from clinical sites as well as medical sites. This text is recommended for those who are involved with people, whether supervising them, assisting them, nurturing them, as well as guiding them. In this age of the Internet and Web—where we are only connected by text and e-mails, this book serves as a welcome reminder that “It is all about people and relationships” and this book addresses one of the most needed areas of concern—that of people mentoring others, caring
for others and helping to support others in various fields of endeavor from kindergarten to medical school, and beyond.

Network Technology and Homebound Inclusive Education
Guglielmo Trentin and Vincenza Benigno (Institute of Educational Technology, Italian National Research Council, Genoa, Italy)
In series: Education in a Competitive and Globalizing World
2013. 245 pp.
Hardcover: 978-1-62808-537-2. $150.00.

There are students who, because of a wide range of impediments (disability, long-term illness, temporary or permanent home care, particular syndromes such as ‘multiple chemical sensitivity’) are confined to their homes or other physical environments (hospitals, provisional homes, etc.) and consequently find difficulty in regularly attending education and training programs. While national laws on the right to education do protect such situations, the in-preservation support offered to students and families is actually not always adequate for real, effective socio-educational inclusion. This is why great hopes are now being placed in the opportunities offered by the new network and mobile technologies (NMTs), given their massive personal and home diffusion. NMTs have already shown themselves to be invaluable in favoring both the individual and collaborative online learning of homebound students, and the distance support of study activities by teachers.

Successful Science Education Practices: Exploring What, Why and How They Worked
Christine Redman (Science and technology Education Teaching and research, Melbourne Graduate School of Education, University of Melbourne, Victoria, Australia)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-62257-387-5. $175.00.
Softcover: 978-1-62808-706-2. $79.00.

This book has been designed to provide a conduit for the pre-service and beginning teacher of science to access contemporary educational research. The chapters offer researched forms of classroom practices that are also easy to transfer into classrooms. The teaching of chemistry, biology, astronomy and physics, and Primary Science teaching, are discussed with a focus on new technology tools, as well as important topics for the new teacher of science. This includes providing different types of feedback; the value of developing a supportive network of colleagues; planning for science teaching effectively; the types and contribution of models in science teaching and how they contribute to thinking, great ways to utilize demonstrations; and challenging the learners’ alternative conceptions. New technologies are pervasive in many chapters, and are used to enrich and deepen the learning experiences possible for learners.

ELECTRICAL ENGINEERING

Advances in Sensor Networks Research
Mohammad A. Matin (Department of Electrical and Electronic Engineering, Institut Teknologi Brunei (ITB), Brunei)
In series: Electrical Engineering Developments
Hardcover: 978-1-62948-679-6. $175.00.

A wireless sensor network is comprised of a large number of inexpensive battery-powered, self-organizing sensor nodes. The sensor nodes can communicate among themselves and send their data through the network to a main location or sink where the data can be observed and analyzed. Wireless sensor networks enable new applications and have gained a lot of attention in the last decade, as they have a great impact on real-life activities and hold true to the promise of delivering a smart communication paradigm. These networks are often deployed in hostile or inaccessible areas to collect environmental data for analysis and decision making. Due to the deployment cost, wireless sensor networks are usually planned to run for a long time once they are deployed. The book highlights power efficient design issues related to wireless sensor networks as well as the existing WSN applications. The research efforts being undertaken in this field which help the students and researchers to grasp the materials, enabling them to understand more advanced research and make a contribution in this field for themselves is also discussed. All the chapters of this book are written by several of the leading researchers. It is believed that this book will serve as a comprehensive reference for graduate and undergraduate students who seek to learn the latest advancements in wireless sensor networks.

ENERGY

Advances in Energy Research. Volume 16
Morena J. Acosta
In series: Advances in Energy Research
Hardcover: 978-1-62808-827-4. $230.00.

This book presents a comprehensive review of energy research studies from authors around the globe, including recent research in new technologies associated with the construction of nuclear power plants; oil disperse systems study using nuclear magnetic resonance relaxometry (NMR); low energy consumption for cooling and heating systems; experimental investigation of the performance of a ground-source heat pump system for buildings heating and cooling; sustainable development of bioenergy from agricultural wastes and the environment; hazard identification and parametric analysis of toxic pollutants dispersion from large liquid hydrocarbon fuel-tank fires; maintenance benchmarking in petrochemicals plants by means of a multicriteria model; wind energy development innovation; power, people and pollution; nature and technology of geothermal energy and clean sustainable energy for the benefit of humanity and the environment; and soil thermal properties and the effects of groundwater on closed loops.

Advances in Energy Research. Volume 17
Morena J. Acosta
In series: Advances in Energy Research
Hardcover: 978-1-63117-382-0. $150.00.
This book presents a comprehensive review of energy research studies from authors around the globe, including recent research in energy use and its environmental impact; energy use in industry, buildings development and the environment; recent developments and perspectives on biomass and biogas; energy efficiency for refrigeration and air conditioning; hydroelectric storage; halophytes energy feed stocks; and energy consumption and growth in Nigeria.

**Alternative Water Use for Power Plant Applications**

**Eric N. Grady**

In series: *Energy Science, Engineering and Technology*

In series: *Water Resource Planning, Development and Management*


A U.S. Department of Energy National Energy Technology Laboratory (DOE/NETL) study estimated that in 2005, total U.S. freshwater withdrawals for thermolectric power generation amounted to approximately 146 billion gallons per day (BGD), while freshwater consumption was 3.7 BGD. Coal-fired power plants use water for cooling water systems, flue gas desulfurization (FGD) makeup, boiler makeup,ash handling, wastewater treatment, and general plant wash down. As the population continues to increase, electric and water demands are expected to grow. Thermolectric power generation requires a large quantity of freshwater to support operations. In regions of the country with limited freshwater supplies, thermolectric power generation may be competing with other uses for dwindling freshwater supplies. This book focuses on the research that has been done to date for the non-traditional sources of process and cooling water components. Studies in this research area focus on identifying potential new water sources, including brackish and saline water supplies and various domestic and industrial wastewaters. In particular, these studies focus on understanding the location, volumes, and quality of different non-traditional waters, as well as treatment technologies to reduce the scaling, biofouling, and corrosion potential of available impaired waters that would not otherwise be useful in a cooling water system or other processes within a thermolectric plant.

**Biomass Processing, Conversion and Biorefinery**

**Bo Zhang and Yong Wang (Department of Natural Resources and Environmental Design, North Carolina A & T State University, Greensboro, NC, USA)**

In series: *Renewable Energy: Research, Development and Policies*

In series: *Energy Science, Engineering and Technology*

2013. 469 pp.


Biomass presents an attractive source for the production of fuels and chemicals, mainly due to the concerns over the depleting fossil fuel, growing awareness of environmental issues associated with fossil fuel consumption, and increasing world energy demand. Biomass resources include agricultural and forest residues, energy crops, livestock residues as well as municipal solid waste. These biomass resources are first processed into a conversion-friendly form, followed by the transformation to a wide range of energy and/or chemical products using two primary biorefinery platforms: biochemical and thermochemical. This book covers the most recent advances in biomass processing, biochemical and thermochemical conversion technologies, and thus, serves as a useful reference to agriculture engineers, chemical engineers, biotechnology engineers and engineering students. The contents of the book are divided into three sections: biomass overview and processing, biomass thermochemical and biochemical conversion technologies, and integrated biorefinery processes.

**Business Case Scenarios for Energy Efficiency: Select Equipment and Appliance Sectors in the U.S., China, and India**

**Sean C. Byrne**

In series: *Energy Policies, Politics and Prices*


Hardcover: 978-1-62948-076-3. $110.00.

e-book: 978-1-62948-077-0. $110.00.

This book seeks to provide policymakers and other stakeholders with actionable information towards a road map for reducing energy consumption cost-effectively. A focus on individual end use equipment types (hereafter referred to as appliance groups) that might be the subject of policies - such as labels, energy performance standards, and incentives - to affect market transformation in the short term, and on high-efficiency technology options that are available today is examined. There is a strong, profit-based business case for investing in more energy-efficient products and designs. Energy efficiency, however, often is viewed as something that businesses and individuals “should” do as good citizens. The reality is that using energy inefficiently is like walking past money on the ground - money that could be put to far better use than paying electricity bills. Investing in energy efficiency therefore creates economic value. This book provides an overview of business case scenarios for energy efficiency in the United States, China and India.

**China and the U.S.: Comparisons of Green Energy Programs and Iron and Steel Production**

**Julian A. Paquette**

In series: *China in the 21st Century*

In series: *Energy Policies, Politics and Prices*


Hardcover: 978-1-62948-389-4. $110.00.

e-book: 978-1-61688-984-1. $79.00.

China is the world’s most populous country with approximately 1.3 billion people. It has experienced tremendous economic growth over the last three decades with an average annual increase in gross domestic product (GDP) of 9.8% during that period. This rapid economic growth has led to an increasing demand for energy, spurring China to add an average of 53 gigawatts (gw) of electric capacity each year over the last ten years to its power generation capabilities. China is also the world’s largest producer and consumer of coal, with about half of its coal use being for electricity generation. In fact, coal provides over 70% of China’s current electricity needs, and fuels much of the new power generation capacity being built. While many of these new coal plants are among the most technically advanced in the world, the burning of coal results in sulfur dioxide, nitrogen oxides, and particulate emissions which contribute to air pollution, and greenhouse gas emissions linked to global climate change. The current and potential future environmental consequences of burning coal are a major reason China has been actively seeking to increase its renewable energy capabilities. When current rates of use are considered, limited domestic reserves of coal, natural gas, and oil provide another impetus for change. However, China’s announced intent to rely on domestic, sustainable solutions for its growing energy needs has led to a focus on developing “green” or renewable energy resources. In contrast to China, some argue that the United States does not have a comprehensive national policy in place for promotion of renewable energy technologies, with some observers saying that the higher costs of renewable electricity are not conducive to market adoption. However, for both countries, the reasons for increasing the use of renewable energy are diverse, and include energy security, energy independence, cleaner air, and more recently anthropogenic climate change, sustainability concepts, and economic development. Creating
new, higher quality jobs could reasonably be said to be primary drivers of policy goals in both the United States and China.

Consumptive Water Use in Liquid Fuel Production: Select Analyses
Pasquale D. Battista
In series: Energy Science, Engineering and Technology
In series: Water Resource Planning, Development and Management
2013. 147 pp.
Hardcover: 978-1-62808-938-7. $110.00.
The production of energy feedstocks and fuels requires substantial water input. Not only do biofuel feedstocks like corn, switchgrass, and agricultural residues need water for growth and conversion to ethanol, but petroleum feedstocks like crude oil and oil sands also require large volumes of water for drilling, extraction, and conversion into petroleum products. Moreover, in many cases, crude oil production is increasingly water dependent. Competing uses strain available water resources and raise the specter of resource depletion and environmental degradation. Water management has become a key feature of existing projects and a potential issue in new ones. This book examines the growing issue of water use in energy production by characterizing current consumptive water use in liquid fuel production. As used throughout this book, “consumptive water use” is the sum total of water input less water output that is recycled and reused for the process. The estimate applies to surface and groundwater sources for irrigation but does not include precipitation. Water requirements are evaluated for five fuel pathways: bioethanol from corn, ethanol from cellulosic feedstocks, gasoline from Canadian oil sands, Saudi Arabian crude, and U.S. conventional crude from onshore wells. Regional variations and historic trends are noted, as are opportunities to reduce water use.

Dams, Drought and Energy-Water Interdependencies
Daniel L. Calzi
In series: Energy Science, Engineering and Technology
Hardcover: 978-1-62808-942-4. $135.00.
The U.S. Department of Energy (DOE) and the U.S. Department of Homeland Security (DHS) collaborated to examine the interdependencies between two critical infrastructure sectors – dams and energy. This book highlights the importance of hydroelectric power generation, with a particular emphasis on the variability of weather patterns and competing demands for water which determine the water available for hydropower production. In recent years, various regions of the Nation suffered drought, impacting stakeholders in both the dams and energy sectors. Droughts have the potential to affect the operation of dams and reduce hydropower production, which can result in higher electricity costs to utilities and customers. Conversely, too much water can further complicate the operation of dams in ways that can be detrimental to hydropower production and to the infrastructure of the dams. Although hydroelectric facilities are a type of asset that falls under the auspices of the dams sector, they are also an important element to the energy sector because the electric power they generate is critical to maintaining the reliability of the Nation’s electricity supply. Therefore, this joint effort underscores the value of a cross-sector partnership model in the identification and discussion of issues significant to dam and utilities owners and operators, through which can help enhance their resilience against the potential impacts associated with the variability of weather patterns and extreme fluctuations of water flow.

Deep Borehole Disposal of Radioactive Waste and Spent Nuclear Fuel
Janelle Ketner
In series: Waste and Waste Management
2014. 266 pp.
The United States has focused its past efforts on disposing spent nuclear fuel (SNF) and high-level waste (HLW) in a geologic repository. Recently, the U.S. Department of Energy has been investigating Deep Borehole Disposal (DBD) as an alternative for disposal of SNF and HLW because of a recommendation by the Blue Ribbon Commission (BRC). Borehole disposal has long been recognized as a means for isolating hazardous materials from the environment. It is widely and routinely used for the disposal of liquid hazardous waste, particularly within the petroleum industry. This book discusses the research, development, and demonstration roadmap for DBD; the reference design and operations for DBD of high-level radioactive waste; and DBD of high-level radioactive waste.

Demand Response for Reduced Electricity Consumption: A Plan for the Nation
Adam R. Peterson
In series: Energy Policies, Politics and Prices
Hardcover: 978-1-62948-023-7. $110.00.
Demand response is a valuable resource for meeting the nation’s energy needs. By lowering the peak demand for energy, demand response programs reduce the need to construct new, expensive generation units. However, according to a Federal Energy Regulatory Commission (FERC or Commission) staff report — A National Assessment of Demand Response Potential (National Assessment), submitted to Congress in June 2009 — current demand response programs tap less than a quarter of the total market potential for demand response. The FERC staff has worked with stakeholders to develop a National Action Plan on Demand Response (National Action Plan), which sets out actions to achieve the demand response potential in the United States. Congress required the FERC to develop such a plan in the Energy Independence and Security Act (EISA) of 2007. Because current efforts have missed a significant portion of the cost-effective demand response potential, it is evident that action needs to be taken to either create new programs or expand existing ones where cost-effective. This book provides an overview of the National Action Plan, the process behind its development, and context for understanding it.

Demand Response: Electricity Market Benefits and Energy Efficiency Coordination
Joshua O’Neill
In series: Energy Policies, Politics and Prices
2013. 175 pp.
Hardcover: 978-1-62948-072-5. $135.00.
Most electricity customers see electricity rates that are based on average electricity costs and bear little relation to the true production costs of electricity as they vary over time. Demand response is a tariff or program established to motivate changes in electric use by end-use customers in response to changes in the price of electricity over time, or to give incentive payments designed to induce lower electricity use at times of high market prices or when grid reliability is jeopardized. Price-based demand response such as real-time pricing (RTP), critical-peak pricing (CPP) and time-of-use (TOU) tariffs, give customers time-varying rates that reflect the value and cost of electricity in different time periods. Armed with this information, customers tend to use less electricity at times when electricity prices are high. Incentive-
based demand response programs pay participating customers to reduce their loads at times requested by the program sponsor, triggered either by a grid reliability problem or high electricity prices. Limited demand response capability exists in the U.S. today. Total demand response and load management capability has fallen by about one-third since 1996 due to diminished utility support and investment. States should consider aggressive implementation of price-based demand response for retail customers as a high priority. This book examines the electricity market benefits and energy efficiency coordination corresponding to demand response service.

Electricity Markets: Developments, Issues, and Energy Trading

_Nathan Oswald_

In series: *Energy Policies, Politics and Prices*

2014. 201 pp.

Electricity today is widely viewed as a commodity. As a commodity, electricity is bought and sold as both power and energy, with various attributes being traded in electricity markets. However, electricity has some unique characteristics which distinguish it from almost all other commodities. In this book, the authors discuss the recent issues in market structure and energy trading in the electricity markets and provide a handbook of energy market basics.

Energy Consumption: Impacts of Human Activity, Current and Future Challenges, Environmental and Socio-Economic Effects

_Sigrid Reiter* (University of Liege, Architecture and Urban Planning, LEMA, Liege, Belgium)*

In series: *Energy Science, Engineering and Technology*

Hardcover: 978-1-62948-651-2. $150.00.

Energy is central to sustainable development. It has huge environmental, social, and economic impacts, such as its influence on climate change, poverty reduction efforts, industrial and agricultural productivity and environmental and human health. The development of strategies towards a sustainable energy transition is one of the most important world challenges of the twenty-first century. The choices that we will make in the coming years about energy will determine what world future generations will inherit. This book gives an overview of the key issues, strategies, operational guidelines and policy implications of current research on the transition to more sustainable energy consumption. It investigates the important issue of the relation between human activities, energy systems and energy use. It addresses the environmental, social and economic impacts of energy consumption and their interrelationships. This book was written by academic and research experts in the field of energy, and they have developed strategies for an energy sustainable plan for the main intensive sectors: energy production, transportation, buildings, agriculture and domestic appliances. The best opportunities and solutions for energy demand reduction are shown, including energy efficiency improvement, increases in the share of renewable energy sources, technological progress and behavioural changes in the field of energy. The aim of this work is to guide the reader toward more efficient policies and actions that will actually improve the future. The book also addresses the different issues faced by developing and developed countries, as well as their relative respective solutions. It presents various alternative pathways that are open to our societies. The methods of energy consumption assessment and modeling approaches are also discussed. All those who are interested in energy challenges will find practical knowledge and operational solutions in this book, providing a solid foundation for making well-informed choices in the future, as individuals and as societies.

Energy Efficiency Opportunities in Select Chinese Industries

_Jason A. Connely*

In series: *Energy Science, Engineering and Technology*

In series: *China in the 21st Century*

Hardcover: 978-1-62808-984-4. $110.00.

This book examines current research relating to energy efficiency opportunities in select Chinese industries with a focus on the pulp and paper industry; and CO2 emission reduction potentials in the iron, steel and cement industries.

Energy Efficiency: Observations on Recovery Act-Funded Programs and Choices Compared with Utility Customer-Funded Programs

_Arleen Garlow*

In series: *Renewable Energy: Research, Development and Policies*

Hardcover: 978-1-62948-938-4. $135.00.

Since the spring of 2009, billions of federal dollars have been allocated to state and local governments as grants for energy efficiency and renewable energy projects and programs. The scale of this American Reinvestment and Recovery Act (ARRA) funding, focused on “shovelready” projects to create and retain jobs, is unprecedented. Thousands of newly funded players – cities, counties, states, and tribes – and thousands of programs and projects are entering the existing landscape of energy efficiency programs for the first time or expanding their reach. The nation’s experience base with energy efficiency is growing enormously, fed by federal dollars and driven by broader objectives than saving energy alone. This book focuses on a selected set of ARRA-funded energy efficiency programs administered by state energy offices: the State Energy Program (SEP) formula grants, the portion of Energy Efficiency and Conservation Block Grant (EECBG) formula funds administered directly by states, and the State Energy Efficient Appliance Rebate Program (SEEARP).

Energy Efficiency: What it is, Why it is Important, and How to Assess it

_Xavier Chavanne* (Université Paris Diderot, UFR STEP Institut de Physique du Globe de Paris, Equipe Dynamique des Fluides Géologiques, Paris, France)*

In series: *Energy Science, Engineering and Technology*

Hardcover: 978-1-62808-764-2. $85.00.

How do we assess energy efficiency? The methodology proposed in this book links the efficiency at the system level to the data - flows and established knowledge - found at the process level. This analysis determines the dependence of the system efficiency on physical characteristics of its processes. Unless this is done, these characteristics may be sources of large errors, by factors of one hundred or more. The suggested methodology saves time of analysis and gives a realistic assessment of the remaining uncertainties. Complete energy systems cannot dissipate more energy than they extract, directly or indirectly. Historic exploitation of underground coal could not run a steam engine for operations which require more coal than it can lift. Can the agro-ethanol industry operate without external energies, (i.e., is it more than self-reliant)?
Energy Efficient Digital Networks and Data Centers: Technology and Policy Issues

Kevin C. Freeman

In series: Energy Science, Engineering and Technology

In series: Computer Networks

2013. 152 pp.
Hardcover: 978-1-62948-021-3. $110.00.
e-book: 978-1-62948-022-0. $110.00.

Digital networks are the foundation of the information services, such as cell phones, e-mail, and the Internet, and are an expanding and indispensable part of our lives. With the wide availability of these networks, many of the devices and equipment we use in buildings increasingly depend on these networks for the functions they perform. Today, networked devices are mostly electronics, but other types of devices are gaining rich communications ability. While the information services provided by these networks are perceived almost universally to provide a net benefit to society, one drawback to these networks is that they increase energy use, both through the direct energy use of the network interfaces and equipment that comprise the network, and in the effect they have on the operating patterns of devices connected to the network. This book investigates a variety of technology and policy issues related to the energy used by digital networks to further the development of several energy efficiency technologies. Several of these technologies have since been introduced to the market, saving energy in California, the United States, and globally.

Energy Taxes: Policy Perspective and Issues for Consideration

Nathan Videt

In series: Energy Policies, Politics and Prices

Softcover: 978-1-62948-552-2. $52.00.

Since the 1970s, energy tax policy in the United States has attempted to achieve two broad objectives. First, policymakers have sought to reduce oil import dependence and enhance national security through a variety of domestic energy investment and production tax subsidies. Second, environmental concerns have led to subsidization of a variety of renewable and energy efficiency technologies via the tax code. While these two broad goals continue to guide policy, enacted policies that solely focus on achieving only one of the goals are often inconsistent with policies solely designed to achieve the other goal. For example, subsidies to oil and gas producers, while enhancing domestic oil and gas production, encourage an activity with negative environmental consequences. By providing a longitudinal perspective on energy tax policy and expenditures, this book examines how current revenue losses resulting from energy tax provisions compare to historical losses and provides a foundation for understanding how current energy tax policy evolved. Further, this book compares the relative value of tax incentives given to fossil fuels, renewables, and energy efficiency. Recent legislation has introduced, reintroduced, expanded, and extended a number of energy tax provisions. While a number of the current energy provisions have a long historical standing in the tax code, a wider variety of tax incentives, to promote a range of energy sources, are presently available than have been available in the past.

Energy-Environment-Economics

Riad Benelmir

In series: Environmental Science, Engineering and Technology

Hardcover: 978-1-62948-862-2. $150.00.

This book sheds light on the interaction between the utilization of energy and the environment, as well as the economic aspects involved with this utilization. It is a vehicle for an international exchange and dissemination of ideas in the multidisciplinary field of energy-environment-economics between research scientists, engineers, economists, policy makers, and others concerned about these issues.


Lars Rose (Materials Engineering Department, University of British Columbia, Vancouver, B.C., Canada)

In series: Energy Science, Engineering and Technology

Hardcover: 978-1-61942-526-2. $175.00.
e-book: 978-1-62618-511-1. $175.00.

One of the greatest challenges of mankind today is that the world population and the world’s energy consumption are increasing continuously. The majority of our power production derives from the combustion of fossil fuels, including coal, with additional significant contributions from hydroelectric and nuclear energy conversion. All of these energy conversion methods create different types of pollution. Fossil fuels are a finite resource of solar energy stored in floral and faunal fossils over many millions of years. The ever increasing demand for this finite and dwindling resource has the potential to significantly increase the cost of these resources. Additionally, an undesirable consequence of the thermo-chemical conversion of fossil fuels by combustion is environmental contamination. The reaction products from combustion can be harmful to the environment and us humans on a local scale, and may contribute to global climatic changes. Fossil fuel resources are unevenly distributed over the globe, leading to geopolitical unrest as a result of the competition for resource access. Clearly, the energy demands of our society need to be satisfied in a more appropriate, sustainable, and efficient way. Beyond the production and clean conversion of energy with low emissions, the storage and transmission of energy have to be solved sustainably. Nanowires made from carbon fibres have been proposed as modern transmission lines with the potential to significantly reduce the losses inside the distribution networks. Other smart materials developments can result in cleaner energy conversion for our society. This work builds on the pioneer work performed by Nobel Prize winner Richard Smalley, taking his vision of clean energy transmission through carbon structures into the second decade of the 21st century.

Enzymes in Value-Addition of Wastes

Satinder Kaur Brar and Mausam Verma (Institut National de la Recherche Scientifique, Centre Éau, Terre & Environnement/Centre for Water, Earth and Environment, Québec, Canada)

In series: Waste and Waste Management

Hardcover: 978-1-62948-968-1. $150.00.

A sustainable feedstock supply is one of the primordial issues for the transition towards the bio-based economy. Therefore, the resource base needs to be identified from the perspective of supply and demand. The exploitable biomass is of a highly heterogeneous origin, either derived from specially grown crops or from crop residues of food and feed production, forestry residues and marine flora. Municipal waste, manure and animal products and industrial wastes also need to be considered as potential resources for bio-based products and services. In this regard, enzymes are known to play a pivotal role not only at the stage of production of these value-added products, but also as an important component of value-added products from different alternative biomasses. Therefore, enzymes become an important factor as value-added products and for value-added products. The use of enzymes holds great potential value for industries in many sectors, including energy, organic chemicals, polymers, fabrics and healthcare.
products. In general, an enzyme based bio-economy offers many benefits and opportunities: • new areas of economic growth and development for the biomass resources; • creation of new innovative business spin-offs; • improved energy security, by reducing the dependence on non-renewable resources; • enhance economic and environmental inter-linkage between the agricultural and industrial sectors promoting sustainability; • reduction of greenhouse gas emissions; • health security by decreasing exposure to harmful substances through the utilization of enzymes instead of hazardous chemicals; • employment generation and economy development.

Considering the plentiful opportunities and benefits, it is a horrendous task at this point to pave the way toward a chemical free enzyme based bio-economy. In this context, this book on enzymes in the value-addition of wastes addresses some key opportunities and challenges in the emerging bio-economy, with an emphasis on energy and industry applications. Consequently, the book includes various resources, feedstocks, and conversion options for the production of enzymes. Case studies and examples will be provided to illustrate both driving forces and constraints in the use of these enzymes.

Feedstocks: Production Practices, Technologies and Environmental Impacts

Adolf Acquaye (Centre for Energy, Environment and Sustainability, The University of Sheffield, Sheffield, UK)

Hardcover: 978-1-62948-156-2 $110.00.

Policy makers are sometimes faced with the challenge of making decisions based on the choice of biomass feedstocks to promote. As such, the book presents an examination of trade-off decisions that sometimes have to be made between the choices of feedstock needed to achieve the desired economic, social and ecological sustainability. In this book, readers find very resourceful information on the critical assessment and discussions on biomass as a feedstock across three major themes: production practices, technologies and environmental impacts. It gives useful insight into relatively unexplored pathways for biomass use in extant literature. The book will appeal to a broad range of energy professionals and specialists, researchers, students and others interested in the field of biomass feedstocks and sustainable energy. In ensuring that the environmental benefits of biomass derived fuel and energy are fully achieved, it is imperative that its environmental impacts are properly managed. Therefore, the book further provides readers with some unique methods of managing the environmental impacts of alternative biomass derived feedstocks.

Fossil Fuels: Sources, Environmental Concerns and Waste Management Practices

Rakesh Kumar (Department of Applied Chemistry, BIT Mesra, Patna Campus, India)

Hardcover: 978-1-62808-412-2 $150.00.
e-book: 978-1-62808-413-9 $150.00.

The development of low-carbon energy is progressing too slowly to limit global warming. With power generation still dominated by coal and governments failing to increase investment in clean energy, the target of controlling the rise in global temperature is a tough task. This book is written so as to address some of the issues as well as waste management practices of fossil fuels and modified fossil fuels through ten original and very interesting chapters. Carbon sequestration of fossil fuels has been greatly emphasized so as to reduce the carbon footprint. The book starts with an overview of fossil fuels which include oil, natural gas and its hydrates, coal, kerogen shale, and peat. Information on reserves and extraction of each type of fuel is presented in Chapter One. The book continues with Chapter Two, where increased levels of sophistication for fossil fuels have been discussed to alleviate the subsequent depletion of fossil fuels. In Chapter Three partial substitution of coal by renewable biomass in existing coal-fired boilers for power generation is presented. It has been stated that hydrothermal carbonization (HTC) offers a promising conversion process to upgrade raw biomass feedstock. In Chapter Four, discussion on the types of biomass and the ways to modify the same have been presented. Through Chapters Five to Eight the reader will know the great potentials of gasification, mineral carbonation, geo-engineering and remote sensing in achieving almost zero emission.

Geothermal Energy, Technology and Geology

Jianwen Yang (Department of Earth and Environmental Sciences University of Windsor, Windsor, Ontario, Canada)

Hardcover: 978-1-61942-765-5 $140.00.

Geothermal energy is reliable, sustainable and environmentally friendly with less greenhouse emission, and therefore is drawing increasing attention recently due to its role in serving as a complement to fossil fuels and in mitigating global warming. This book presents a diversity of topical case studies in geothermal energy, technology and geology. The collection of topics aims to present recent advances in research and application of geothermal energy systems, including ground source heat pump systems and the environmental pollution control; geological occurrence of the thermal aquifers in northeastern Slovenia; relationships between fracture zones, flow pathways and mineral precipitation corresponding to an enhanced geothermal system in France; and geological and tectonic framework favoring the occurrence of geothermal systems in Western Anatolia, Turkey.

Hydraulic Fracturing: Legal Issues and Relevant Laws

Adam R. Murphy

Hardcover: 978-1-62948-082-4 $110.00.

Hydraulic fracturing is a technique used to recover oil and natural gas from underground low permeability rock formations. Hydraulic fracturing involves pumping fluids (primarily water and a small portion of chemicals, along with sand or other proppant) under high pressure into rock formations to crack them and allow the resources inside to flow to a production well. The technique has been the subject of controversy because of the potential effects that hydraulic fracturing and related oil and gas production activities may have on the environment and health. This book focuses on selected legal issues related to the use of hydraulic fracturing. It examines some of the requirements for hydraulic fracturing contained in major federal environmental laws and also provides an overview of issues involving state preemption of local zoning authority, as well as state law.

Hydropower: Types, Development Strategies and Environmental Impacts

Claude E. Rupert

Hydropower is the power derived from the energy in moving water. Hydroelectricity is created by converting the kinetic energy in moving water to mechanical energy in turbine machinery, which is then used to generate electricity. In this book, the authors present current research in the study of the types, development strategies and environmental impacts of hydropower. Topics discussed include the history and present state of global hydropower development and engineering and types of hydropower structures; and a study of hydropower as a renewable and environmentally friendly energy source.

**Impact of Wind Energy Facilities on Residential Property Values**

*Vincent Signorelli*


Hardcover: 978-1-62948-940-7, $195.00.  

Previous research on the effects of wind energy facilities on surrounding home values has been limited by small samples of relevant home-sale data and the inability to account adequately for confounding home-value factors and spatial dependence in the data. This book provides a spatial hedonic analysis of the effects of wind energy facilities on surrounding property values in the United States to help fill those gaps. The impact of wind power projects on residential property value in the United States is also discussed.

**Integrating Variable Renewable Energy in Electricity Markets: International Experiences**

*Sophia B. Taylor and Patrick R. Young*


Hardcover: 978-1-62808-572-3, $110.00.  
e-book: 978-1-62808-573-0, $110.00.

Many countries, reflecting very different geographies, markets, and power systems, are successfully managing high levels of variable renewable energy on the electric grid, including that from wind and solar energy. This book documents the diverse approaches to effective integration of variable renewable energy among six countries: Australia (South Australia), Denmark, Germany, Ireland, Spain, and the United States (Colorado and Texas), and summarizes policy best practices that energy ministers and other stakeholders can pursue to ensure that electricity markets and power systems can effectively coevolve with increasing penetrations of variable renewable energy. There is no one-size fits all approach; each country has crafted its own combination of policies, market designs, and system operations to achieve the system reliability and flexibility needed to successfully integrate renewables. Notwithstanding this diversity, the approaches all coalesce around five strategic areas: lead public engagement, particularly for new transmission; coordinate and integrate planning; develop rules for market evolution that enable system flexibility; expand access to diverse resources and geographic footprint of operations; and improve system operations. This book also underscores the value of countries sharing their experiences. The more diverse and robust the experience base from which a country can draw, the more likely that it will be able to implement an appropriate, optimized, and system-wide approach.

**International Energy Partnerships: Select Elements, Issues, and Analyses**

*Jules N. Morel*


Hardcover: 978-1-62948-503-4, $110.00.  

This book examines select elements, issues and analyses relating to international energy partnerships. Topics discussed include the proposed U.S.-Mexico Transboundary Hydrocarbons Agreement which marks the start of an energy partnership in an area of international waters estimated to contain as much as 172 million barrels of oil and 304 billion cubic feet of natural gas. The main purpose of the partnership would be to lift a moratorium and to jointly develop reservoirs of oil and natural gas, referred to as “transboundary resources,” that exist in areas straddling the marine border of both countries. Also discussed are the potential approaches that Europe might employ to diversify its sources of natural gas supply, Russia’s role in Europe’s natural gas policies, and key factors that could hinder efforts to develop alternative suppliers of natural gas as well as strategies for international cooperation in support of energy development in Pacific island nations.

**International Review of Energy Efficiency Standards and Labeling Programs**

*Chad R. Schmitz*


Softcover: 978-1-62948-002-2, $52.00.  
e-book: 978-1-62948-003-9, $52.00.

Appliance energy efficiency standards and labeling (S&L) programs have been important policy tools for regulating the efficiency of energy-using products for over 40 years and continue to expand in terms of geographic and product coverage. The most common S&L programs include mandatory minimum energy performance standards (MEPS) that seek to push the market for efficient products, and energy information and endorsement labels that seek to pull the market. This book seeks to review and compare some of the earliest and most well-developed S&L programs in three countries and one region: the U.S. MEPS and ENERGY STAR, Australia MEPS and Energy Label, European Union MEPS and Ecodesign requirements and Energy Label and Japanese Top Runner programs. For each program, key elements of S&L programs are evaluated and comparative analyses across the programs undertaken to identify best practice examples of individual elements as well as cross-cutting factors for success and lessons learned in international S&L program development and implementation.

**Managing Critical Isotopes: Select Assessments of Issues with Nuclear Applications**

*Aubrey Lindell*

*In series: Nuclear Materials and Disaster Research 2014. 86 pp.*

Softcover: 978-1-62948-785-4, $52.00.  
e-book: 978-1-62948-786-1, $52.00.

Little is known about lithium-7 production in China and Russia and whether their supplies can meet future domestic demand. According to industry representatives, China and Russia produce enough lithium-7 to meet demand from U.S. pressurized water reactors, a type of commercial nuclear power reactor that requires lithium-7 for safe operation. This book examines what is known about the supply and demand of lithium-7, what federal agencies are responsible for managing supply risks, and alternative options to mitigate a potential shortage. The authors of this book also discuss the management of helium-3 and the availability of tritium for the weapons stockpile to the National Nuclear Security Administration.

**Methane in the Environment: Occurrence, Uses and Production**

*Angelo Basile (Institute on Membrane Technology, University of Calabria via P. Bucci, Rende, Italy)*

*In series: Environmental Research Advances 2013. 311 pp.*

This book examines select elements, issues and analyses relating to international energy partnerships. Topics discussed include the
Due to the decreasing world petroleum reserves, a great emphasis is today placed on the development of alternative sources for energy production. In this context, abundant natural gas is seen as an energy source for the future. Methane, the main component of natural gas, is considered the most abundant organic compound on our planet. Unlike other fossil fuels, natural gas is clean burning and emits lower levels of potentially harmful byproducts into the air. Currently, methane (via steam reforming) is considered the most common and cost-effective method for hydrogen production and it contributes to about 50% of the world’s hydrogen production. In this book a collection of various aspects related to methane is reported, such as its production, its characterization, and the techniques used for analysis and control of its emissions. Among others, the following aspects are considered: the advantages of the use of methane as a source of energy; the accuracy of the simulation of atmospheric and laboratory spectra in the spectral regions of strong methane absorption bands; new research on the structure of methane cycling microbial communities in the unique system of the Amazon selva; the effect of methane seepages on the rates of microbial processes in the sediments of the Sevastopol coastal area; the emissions of enteric methane from ruminants and its impact on global warming; the various effects of catalysts activity for methane reactions; and some aspects of the emissions of gaseous pollutants in the exhaust of vehicles running on compressed natural gas. Different numerical investigations are also discussed in detail.

Natural Gas and Petroleum: Production Strategies, Environmental Implications and Future Challenges

Constantin Cranganu (The City University of New York, Brooklyn College, NY, USA)

In series: Energy Science, Engineering and Technology

Hardcover: 978-1-62808-535-8. $150.00.

Today’s oil and gas are at record prices, whilst global energy demand is increasing from population and economic development pressures. New and highly improved methods to detect, explore, and exploit new resources of oil and gas are necessary to maintain the world’s energy needs toward sustainable economic development. This book aims to offer the latest developments in several areas related to the above mentioned goals. As authors, it is our understanding and expectation, that interested readers will find plenty of useful, insightful, and reliable information for their energy-related tasks.

Nuclear Regulatory Commission: Oversight of the Nuclear Power Industry

Shana Mayfield

In series: Energy Policies, Politics and Prices


The Nuclear Regulatory Commission (NRC) relies on its staff’s professional judgment in implementing its processes for overseeing the safety of U.S. commercial nuclear power reactors. In implementing this oversight, NRC allocates specific roles and responsibilities to resident inspectors assigned to each plant, regional officials at one of four regional offices responsible for most oversight activities, headquarters officials, and the nuclear power industry. This book examines how NRC implements its processes for overseeing the safety of commercial nuclear power reactors; the extent to which NRC consistently identifies and resolves findings through these processes; and NRC’s methods for developing lessons learned to improve its oversight and challenges, if any, NRC faces in doing so. The authors also discuss the inspector general’s assessment of the most serious management and performance challenges facing the NRC.

Production of Infrastructure-Ready Fuel via Fast Pyrolysis and Hydropyrolysis of Biomass

Maxime Giordano

In series: Energy Science, Engineering and Technology

Hardcover: 978-1-62808-940-0. $110.00.

The President has established a goal to supply 35 billion gallons per year of renewable and alternative fuels by 2017. This goal is addressed in part by the U.S. Department of Energy (DOE) Office of Biomass Program’s (OBP’s) Thermochemical Platform multiyear program plan to “convert biomass to fuels, chemicals and power via thermal and chemical processes such as gasification, pyrolysis and other non-biochemical processes”. In recent years, the Biomass Program completed technoeconomic evaluations of both biological and thermochemical pathways for converting biomass to ethanol. These “design case” studies provided a detailed basis for understanding the current state of various conversion technologies for producing fuel ethanol. The studies also helped identify technical barriers for which research and development could potentially lead to significant cost improvements. Consistent assumptions for items such as plant lifetimes, rates of return, and other factors were used in all cases so the various processes could be compared. At present, the use of biomass resources to produce infrastructure-compatible fuels is appealing. Hydrocarbon biofuels can potentially be used without significant changes to the current fuel distribution and utilization infrastructure, including pipelines, pumping stations, and vehicles. Given the relatively short time between now and 2017, the goal of 35 billion gallons per year of renewable fuels will be more readily met if hydrocarbon biofuels are part of the fuel mix.

Reduced Energy Use through Demand Response: Select Experiences from the U.S. and Abroad

Peter N. Ryan

In series: Energy Policies, Politics and Prices

Hardcover: 978-1-62948-074-9. $110.00.

Demand response (DR) is a load management tool which provides a cost-effective alternative to traditional supply-side solutions to address the growing demand during times of peak electrical load. According to the U.S. Department of Energy (DOE), demand response reflects “changes in electric usage by end-use customers from their normal consumption patterns in response to changes in the price of electricity over time, or to incentive payments designed to induce lower electricity use at times of high wholesale market prices or when system reliability is jeopardized.” The California Energy Commission (CEC) defines DR as “a reduction in customers’ electricity consumption over a given time interval relative to what would otherwise occur in response to a price signal, other financial incentives, or a reliability signal.” This latter definition is perhaps most reflective of how DR is understood and implemented today in countries such as the U.S., Canada, and Australia where DR is primarily a dispatchable resource responding to signals from utilities, grid operators, and/or load aggregators (or DR providers). This book examines select experiences from the U.S. and abroad corresponding to reduced energy usage through demand response.

Renewable Energy: Trade and Investment in Essential Services

Ebony L. Dunbar

In series: Renewable Energy: Research, Development and Policies

Hardcover: 978-1-62948-941-4. $195.00.
Global investment in renewable energy has grown sharply in the past five years as countries strive to meet growing energy demands, reduce carbon dioxide emissions, and strengthen energy security. Given that a broad group of services are indispensable to the development and functioning of renewable energy projects, the rapid expansion in renewable energy investment and installed capacity worldwide implies a similarly vibrant global market for renewable energy services. This book offers estimates of the U.S. and global markets for trade and investment in services essential to energy production in the solar, wind, small hydropower, and geothermal sectors, as well as discusses trade barriers affecting these services. The book also describes federal programs that provide grants, loans, loan guarantees, and other direct or indirect incentives for energy efficiency, energy conservation, and renewable energy.

**Research and Applications for Energy, the Environment, and Economics**  
*Riad Benelmir*  
In series: *Environmental Science, Engineering, and Technology*  
This book sheds light on the interaction between the utilization of energy and the environment, as well as the economic aspects involved with this utilization. It is a vehicle for an international exchange and dissemination of ideas in the multidisciplinary field of energy-environment-economics between research scientists, engineers, economists, policy makers, and others concerned about these issues.

**Residential Solar Photovoltaics: Financing Innovations and Options**  
*Maxine Laskowski*  
In series: *Energy Science, Engineering and Technology*  
Hardcover: 978-1-62948-997-1. $110.00.  
e-book: 978-1-63117-014-0. $110.00.  
This book examines relatively new, innovative financing methods for residential photovoltaics (PV) and compares them to traditional self-financing methods. It provides policymakers with an overview of residential PV financing mechanisms, describes relative advantages and challenges between the various financing mechanisms, and analyzes differences between them where data is available. Because these innovative financing mechanisms have only been implemented in a few locations, this book can help enable their wider adoption.

**Soft Costs of Photovoltaic Systems: Analyses of Non-Hardware Costs**  
*Stefan D. Terrance*  
In series: *Energy Policies, Politics and Prices*  
Hardcover: 978-1-63117-017-1. $110.00.  
This book presents results from the first U.S. Department of Energy (DOE) sponsored, bottom-up data-collection and analysis of non-hardware balance-of-system costs—often referred to as “business process” or “soft” costs—for residential and commercial photovoltaic (PV) systems. It quantifies the indirect corporate costs required to install distributed PV systems as well as the transactional costs associated with arranging third-party financing. It accompanies the recent National Renewable Energy Laboratory soft cost benchmarking report (Friedman et al. 2013), which quantifies all the non-hardware balance-of-system costs associated with building a residential or commercial PV system.

**Spent Nuclear Fuel in the U.S.: Management Challenges and Strategies**  
*Nikita Vesik*  
In series: *Nuclear Materials and Disaster Research*  
Hardcover: 978-1-62808-242-5. $110.00.  
Spent nuclear fuel, the used fuel removed from nuclear reactors, is one of the most hazardous substances created by humans. Commercial spent fuel is stored at reactor sites; about 74 percent of it is stored in pools of water, and 26 percent has been transferred to dry storage casks. The United States has no permanent disposal site for the nearly 70,000 metric tons of spent fuel currently stored in 33 states. This book examines the amount of spent fuel expected to accumulate before it can be moved from commercial nuclear reactor sites; the key risks posed by spent nuclear fuel and actions to help mitigate these risks; and the key benefits and challenges of moving spent nuclear fuel out of wet storage and ultimately away from commercial nuclear reactors.

**Sustainable Petroleum Engineering**  
*Rafiq Islam*  
In series: *Energy Science, Engineering and Technology*  
Hardcover: 978-1-62618-598-2. $150.00.  
We are facing a crisis that threatens the sustainability of the entire planet. Civilization has been defined up to now by how efficiently we handle our energy needs. The focus on short-term and tangibles obscures the true vision of technology users. Perpetual justifications of progressively less efficient technologies as panaceas has become a rampant source of the profoundest disinformation. No sector has fallen bigger victim to this disinformation campaign than the petroleum industry. Today, the most efficient naturally processed fuel (fossil fuel) production is synonymous with unsustainability and compatibility with nature and the environment. Accompanying this slogan is the environmentalists’ drumbeat about “renewable” energy. Everywhere people are sold on the idea that even genetically altered vegetable oil is a substitute for fossil fuel energy with nuclear energy. The industry with “renewable” energy production and try to replace fossil fuel energy with nuclear energy. The industry that single-handedly served mankind a globalization panacea on a silver platter has now become a villain worthy of being replaced with the makers of nuclear bombs and DDT. Similarly, carbon dioxide — the essence of life and energy, through photosynthesis — has become the other villain that must be “sequestered” and possibly replaced by hydrogen and even radioactive nuclear spent fuel.

**U.S. Energy Industry Response to Severe Weather: Hardening and Resiliency Efforts**  
*Ilya Bertolucci*  
In series: *Energy Science, Engineering and Technology*  
2013. 175 pp.  
Hardcover: 978-1-62808-944-8. $110.00.  
e-book: 978-1-62808-945-5. $110.00.  
In an effort to better understand what actions the energy industry has taken in response to the 2005 and 2008 hurricane seasons, the U.S. Department of Energy, Office of Electricity Delivery and Energy Reliability (DOE/DOE) conducted research to identify specific industry efforts related to storm hardening and resiliency. This book focuses on the measures that refiners, petroleum product pipeline operators, and electric utilities in the Gulf Coast have taken to harden their assets and make energy supply to the Southeast more resilient. Discussions with the public utility commissions identified additional sources of information on storm hardening in extensive dockets, and focused on
the segments of the energy industry that contribute most to the delivery of gasoline and diesel to the Southeast, United States.

**U.S. Oil Reserves and the National Oilheat Research Alliance**

*Dawn C. Gerber*

In series: *Renewable Energy: Research, Development and Policies*

2014. 121 pp.

Softcover: 978-1-63117-199-4. $52.00.


Congress authorized the Strategic Petroleum Reserve (SPR) in the Energy Policy and Conservation Act (EPCA) of 1975 to help prevent a repetition of the economic disruption caused by the 1973-1974 Arab oil embargo. EPCA specifically authorizes the President to draw down the SPR upon a finding that there is a “severe energy supply interruption.” This book provides insight on several topics such as authorization, operation, and drawdown policy of the SPR; the Northeast home heating oil reserve and the national oilheat alliance, petroleum distillate sales provisions, sale implementation plan, and distribution plans.

**Unconventional Oil and Natural Gas: Emerging Resources and Select Environmental Issues**

*Mikael Jantunen*

In series: *Energy Science, Engineering and Technology*


Hardcover: 978-1-62948-084-8. $110.00.


The United States has seen a resurgence in petroleum production, mainly driven by technology improvements (hydraulic fracturing and directional drilling) developed for natural gas production from shale formations. Application of both of these technologies enabled natural gas to be economically produced from shale and other unconventional formations, and contributed to the United States becoming the world’s largest natural gas producer in 2009. Use of these technologies has also contributed to the rise in U.S. oil production over the last few years. In 2009, annual oil production increased over 2008, the first annual rise since 1991, and has continued to increase each year since then. Between 2008 and 2012, U.S. annual crude oil production rose by 1.5 million barrels per day, with about 92% of the increase coming from shale and related tight oil formations in Texas and North Dakota. Overall petroleum liquids grew by 2.1 million barrels per day, with much of the increase in natural gas liquids coming from shale gas plays. Other tight oil plays are also being developed, and helped raise the prospect of energy independence, particularly for North America. The rapid expansion of oil and gas extraction using hydraulic fracturing, both in rural and more densely populated areas, has raised concerns about its potential environmental and health impacts. These concerns have focused primarily on potential impacts to groundwater and surface water quality, public and private water supplies, and air quality. This book focuses on the growth in U.S. oil and natural gas production driven primarily by tight oil formations and shale gas formations. It also reviews selected federal environmental regulatory and research initiatives related to unconventional oil and gas extraction, including the Bureau of Land Management (BLM) proposed hydraulic fracturing rule.

**Utility Customer-Funded Energy Efficiency Programs: Projected Spending and Savings**

*Trevor Maselli*

In series: *Renewable Energy: Research, Development and Policies*


Softcover: 978-1-62948-939-1. $52.00.


Electric and natural gas energy efficiency in the United States is pursued through a diverse mix of policies and programmatic efforts, which support and supplement private investments by individuals and businesses. These efforts include federal and state minimum efficiency standards for electric and gas end-use products; state building energy codes; a national efficiency labeling program (ENERGY STAR®); tax credits; and a broad array of largely incentive-based programs for consumers, funded primarily by electric and natural gas utility customers. This book provides information on projected spending and savings of the future of utility customer-funded energy efficiency programs in the United States; and discusses the shifting landscape of ratepayer-funded energy efficiency in the United States.

**Utility-Scale Solar Installations: Background, Policies, and Financial Structures**

*Miles B. Simmons*

In series: *Energy Policies, Politics and Prices*


Hardcover: 978-1-62948-999-5. $110.00.


Solar energy technologies continue to be deployed at unprecedented levels, aided significantly by the advent of large-scale projects that sell their power directly to electric utilities. Such utility-scale systems can deploy solar technologies far faster than traditional “behind-the-meter” projects designed to offset retail load. These systems achieve significant economies of scale during construction and operation, and in attracting financial capital, which can in turn reduce the delivered cost of power. Topics discussed in this compilation include a technology and market overview of utility-scale concentrating solar power and photovoltaics projects; federal and state structures to support financing utility-scale solar projects and the business models designed to utilize them; and the impact of financial structure on the cost of solar energy.

**Wind Turbines: Types, Design and Efficiency**

*Anna Balmaceda and Carlos Maynez*

In series: *Energy Science, Engineering and Technology*

In series: *Mechanical Engineering Theory and Applications*

2013. 133 pp.

Softcover: 978-1-62808-891-5. $72.00.


In this book, the authors present topical research in the study of the types, design and efficiency of wind turbines. Topics discussed include modelling ice accretion and its effects on wind turbine blades; the challenges and possible solutions towards public acceptability of horizontal axis wind turbines as a clean energy solution for the future; optimizing high-rise facade-integrated wind rotors; and wind energy extraction and storage by a modified VAWT.

**ENGINEERING**

**Accelerometers: Principles, Structure and Applications**

*Paulo Sérgio de Brito André and Humberto Varum (Instituto de Telecomunicações, R. D. Manuel Barbuda Vasconcelos, Aveiro, Portugal)*

In series: *Electrical Engineering Developments*

In series: *Physics Research and Technology*

2013. 303 pp.

Hardcover: 978-1-62808-111-4. $150.00.

This book presents a comprehensive review of accelerometers focusing on the basic operation principles, structure and applications. The review covers accelerometers research studies performed by authors across the globe in the last decade, including recent research in the development of new accelerometers and their applications in several areas, such as civil engineering and health sciences. This edited book includes state-of-the-art accelerometers research and technologies for relevant applications. It is organized in eleven chapters describing leading-edge research in a cross-section of fields including: optical sensors development; motion capture; applications of accelerometers in the structural health monitoring of buildings, bridges and other types of structures; characterization of dynamic properties of structures; human body and physiological monitoring; and the role of accelerometers in the measurement of children's physical activity.

Advanced Design and Control of Active Power Filters

Juntao Fei (College of Computer and Information, Hohai University, Changzhou, P. R. China)

In series: Engineering Tools, Techniques and Tables

In series: Electrical Engineering Developments


Softcover: 978-1-62417-847-4, $52.00.

Active power filters can be used for harmonic elimination, reactive current compensation, and clean delivery of power. The basic principle of APF is to produce a compensation current which is of the same amplitude and opposite phase with harmonic currents and to eliminate unexpected harmonic currents. The shunt APF could compensate the harmonics generated by the load current through injecting compensation current to the grid. This book will have a large potential readership, ranging from scientists and students of wide disciplines to electrical engineers. It is an essential read for engineers and scientists working in the fields of power electronics and active power filters and advanced control technologies. It will also be of interest to senior undergraduate and graduate students as well as aerospace, mechanical, electrical design engineers who want to acquire some background in the advanced control of active power filters. On the science side, the book will provide important new information to control engineers, electrical engineers, and scientists. The new data and insights will enable students to have a better grasp of the complicated advanced control with application to active power filters. In short, this book will mark a milestone of an integrative approach that is needed to better understand and better manage the emerging power electronics world.

Advanced in Microscale and Nanoscale Thermal and Fluid Sciences

Lixin Cheng, (School of Engineering, University of Portsmouth, Portsmouth, United Kingdom)

In series: Engineering Tools, Techniques and Tables

In series: Nanotechnology Science and Technology


Hardcover: 978-1-62808-743-7, $150.00.

Applications of microscale and nanoscale thermal and fluid transport phenomena involved in traditional industries and highly specialized fields such as bioengineering, micro-fabricated fluidic systems, microelectronics, aerospace technology, micro heat pipes, and chips cooling etc., have become especially important since the late 20th century. However, microscale and nanoscale thermal and fluid transport phenomena are quite different from those of conventional scale or macroscale. Many researchers have been conducting research on the thermal and fluid transport phenomena at the microscale and nanoscale levels to understand the very complex phenomena involved. New methods have been applied to measure the basic physical parameters at microscale and are continuously under development. New prediction methods have also been developed to cover both macroscale and microscale channels and are being continuously investigated. New theories and mechanisms are also urgently needed for the fluid flow and heat transfer phenomena at microscale and nanoscale. There are many issues to be clarified from both theoretical and applied aspects in the microscale and nanoscale thermal and fluid transport phenomena. Furthermore, interdisciplinary research areas are also rapidly under development. For example, as a new research frontier of nanotechnology, the research of nanofluid two-phase flow and thermal physics is rapidly growing. However, it has also posed new challenges as there are quite contradictory results in the available research.

Advances in Systems Engineering Research

Elena Fermi and Adam Lamberti

In series: Engineering Tools, Techniques and Tables


Hardcover: 978-1-62948-310-8, $95.00.
e-book: 978-1-62948-311-5, $95.00.

Systems engineering is an interdisciplinary field of engineering that focuses on how to design and manage complex engineering projects over their life cycles. Issues such as reliability, logistics, coordination of different teams, evaluation measurements, and other disciplines become more difficult when dealing with large, complex projects. Systems engineering deals with work-processes, optimization methods, and risk management tools in such projects. In this book, the authors discuss putting systems engineering into practice and the model-based systems engineering paradigm; education of military engineers and managers with a systems perspective at the Air Force Institute of Technology; simulation of the separation of industrially important hydrocarbon mixtures by different distillation techniques using Mathematica®; enterprise transformation and addressing individual perceptual and behavioral biases as scaling fractals to create emergent state changes; and the application and validation of systems engineering methods and techniques.


Doug Arent and Monica Freebush

In series: Engineering Tools, Techniques and Tables

In series: Quality Control Engineering and Manufacturing


Hardcover: 978-1-62948-262-0, $95.00.

In this book, the authors present current research in the study of new technologies, applications and impacts on the environment and industrial processes relating to automation systems in the 21st century. Topics discussed in this compilation include automated native sample preparation for proteome analysis; modern automation in warehousing by using shuttle based technology; flow methodologies from the point of view of green analytical chemistry; cross-coupling digital control of multi-independent servo-drives; and challenges on the way to automatic network intrusion detection.

Calibration Technology, Theories and Applications

Ikumatsu Fujimoto and Kunitoshi Nishimura

(Okuwa Technical Research Center, Saitama, Japan)

In series: Engineering Tools, Techniques and Tables


Hardcover: 978-1-62618-808-2, $150.00.
e-book: 978-1-62618-884-6, $150.00.

A calibration procedure is generally an operation to determine a relationship between an output and an input of an instrument or an essential value of a measuring object in a measuring system. In other
words, calibration is a comparison of a measuring device against a
standard instrument of higher accuracy. In measuring fields, the
calibration is clearly confirmed in the traceability system. The
traceability is defined as the property of a result of a measurement
whereby it can be related to strictly defined standards, in general,
nationally or internationally recognized, through an unbroken chain
of comparisons. Namely, all calibrations are strictly defined to be
performed traceable to a nationally or internationally recognized
standard in a measuring field. The term “calibration” is used not only
in measuring fields but also in meteorology, chemistry and economics.
Also, in these fields the term “calibration” is used as an operation to
adjust and/or compensate a measuring system, and a method for
accurately determining the relational expression between an
input/output of an instrument using suitable standards, for example, an
appropriate global optimization method. However, compared to the
measuring field, in other research areas the calibration seems to
be defined in a less systematic way, possibly due to the different nature
of these disciplines. In this volume, calibration is defined in the above-
mentioned broad sense of the term, and the topics for discussion are
broad and abundant. The standard of calibration as a method which is
confirmed systematically in the measurement field has been developing
also in other disciplines. They have many research issues, but
constitute a promising area of research.

Dynamics of hydraulic damper modules
Reinhard Sonnenburg and Anja Stretz (Business Unit
Suspension Technology, Dynamic Simulations,
Schweinfurt, Germany)
In series: Mechanical Engineering Theory and
Applications
Softcover: 978-1-62948-386-3. $52.00.
e-book: 978-1-62948-902-5. $52.00.
The book gives a detailed and comprehensive description of the
dynamic behavior of hydraulic automotive damper modules (consisting
of the damper and its top mount). It is shown that the damper elasticity
in combination with nonlinear force characteristics is responsible for
the dynamic damper property. The physical nature of this elasticity is
explained in detail. Using methods of linear system theory new
parameters will be introduced, characterizing the damper behavior at
different frequencies. The use of these parameters can be extended to
nonlinear force characteristics. The new parameters are well defined
even for nonlinear force characteristics and easily measurable for all
dampers. Another topic of the book is the interaction between the
damper and the top mount. The physical nature of parameter-excited
vibrations (often causing a comfort destroying noise in passenger cars)
of the piston rod mass is revealed and a new mechanical principle is
given to avoid such vibrations. General hints for the mutual design of
these force elements are given and a specialized optimization
procedure for the force characteristics of damper modules is applied. It
is shown, that the use of a top mount in damper modules does not only
reduce the vibration isolation at higher frequencies but also increases
ride safety. That completes the investigation of the inner and outer
damper elasticity to give a comprehensive explanation of the vertical
dynamics of damper and top mount vibration behavior.

Fault Detection: Classification, Techniques and Role
in Industrial Systems
Fausto Pedro Garcia Márquez and Mayorkinos
Papaefias (Birmingham University, UK)
In series: Mechanical Engineering Theory and
Applications
In series: Engineering Tools, Techniques and Tables
2013. 266 pp
Hardcover: 978-1-62808-999-8. $150.00.
This book synthesizes the principles of fault detection with a focus on
interfaces between the main disciplines of methods/technologies and
industrial systems. It is complementary to other sub-disciplines such as
maintenance, engineering, safety, risk analysis, etc. This book is
intended for engineers, economists, technical consultants, researchers,
etc. who are involved in the advancement of fault detection, and for
those who incorporate fault detection in their work. The authors of this
volume describe their pioneering work in the area and provide material
from case studies that successfully applied the fault detection discipline
in real life cases. Some topics discussed include condition monitoring
of wind turbines; induction motor fault detection based on vibration
analysis and support vector machines; failure detection and
accommodation approaches for the airspeed sensor on a small UAV;
and model-based fault diagnosis for industrial mobile robots.

Fluid Power, Mathematical Design of Several
Components
Josep M. Bergada and Sushil Kumar (ETSEIAT-
UPC, Fluid Mechanics Department, Barcelona, Spain)
In series: Mechanical Engineering Theory and
Applications
2014.
Hardcover: 978-1-62948-316-0. $175.00.
Fluid power scientists and engineers have produced a large amount of
high quality books so far, which cover a vast amount of technologies
involved in this field. Names like H. Merritt, D. McClay, H.R. Martin,
W. Baeke, J Watton, K. Edge, M. Ivantysynova, N.D. Manning among
many others must be considered as the milestones in this field; their
scientific publications and books have inspired generations of
engineers. The first author of this book was lucky to be able to closely
work for over 10 years with Professor John Watton, and in fact, most
of the original research presented in this volume was undertaken at
Cardiff University. The present book focuses on several components of
fluid mechanics. The first three chapters are designed to give a proper
introduction to the reader regarding the main fluid characteristics,
chapter 1, the main fluid mechanics equations, chapter 2, and a
strategic background of the Computer Fluid Dynamics (CFD)
techniques, chapter 3. It must be kept in mind that nowadays,
conventional mechanics, as well as fluid mechanics, are fully immersed
in the CFD era; therefore the components design desperately needs the
use of this relatively new tool.

Global Positioning Systems: Signal Structure,
Applications and Sources of Error and Biases
Ya-Hui Hsueh (National Taichung University of
Education, Taichung City, Taiwan)
In series: Engineering Tools, Techniques and Tables
Hardcover: 978-1-62808-022-3. $150.00.
“Global Positioning Systems: Signal Structure, Applications and
Sources of Error and Biases” offers professionals and students a
comprehensive overview of GPS signal acquisitions, measurements,
and algorithms for estimation of dynamic programming, quality
control, and filtering methods. This book discusses in-depth GPS signal
transmissions, transmission procedures and calculation algorithms,
using GPS positioning location data for empirical research to elucidate
various dimensions of spatial phenomenon which is different from
previously published books. This book also focuses on how to conduct
empirical research with GPS collected data to contribute discipline
theory and concepts in different domains. The book is divided into
two parts. Part I introduces debates about measurements of GPS
signal structure, including acquisition time, validity based on various
tested GPS units, quality control of real-time positioning, data
characteristics of probed density, average time, and signal disturbance of message distribution such as noise and inaccuracy positioning. Part II describes applications of GPS positioning data for monitoring analysis, movement analysis, spatial analysis and clustering analysis. Part III presents GPS sources of error and biases by discussing the technology of positioning location for underwater positioning, and clarifying the accuracy of digital maps to positioning systems for vehicle positioning. This book brings together a team of leading experts who perform a creative and empirical research of Global Positioning Systems. The book aims to share all the latest advances in systems, methods and application of GPS positioning with the readers. The topics in this book cover an integrated overview of GPS conceptions, an in-depth realization of advanced application, and the emerging trends in GPS research.

Grid Electrified Vehicles: Performance, Design and Environmental Impacts
Carla Alexandra Monteiro da Silva (Institute of Mechanical Engineering-IDMIEC, Instituto Superior Técnico, Portugal)
In series: Mechanical Engineering Theory and Applications
Hardcover: 978-1-62808-839-7. $150.00.
Grid electrified vehicles or plug-in electric vehicles (PEV) are gaining attention worldwide as a potential low carbon technology. Because it is still an immature technology on the market, there is limited knowledge about the control strategy design; the environmental life cycle rating; the business model behind 'electricity charging'; charging behaviour’s interaction with local electricity grid voltage drop, under dumb or smart grid scenarios; and the monitoring apparatus needed to acquire real data on daily usage of these technologies. This book aims to provide insight into these PEV issues.

Process Control: Theory, Applications and Challenges
Alexandra L. Varney
In series: Engineering Tools, Techniques and Tables
Softcover: 978-1-63117-227-4. $72.00.
e-book: 978-1-63117-228-1. $72.00.
Process control is a multidisciplinary field that encompasses a combination of analytical and process chemistry, process engineering and multivariate data analysis. Process analytical techniques (PATs) involve monitoring and control of chemical and physical processes in order to obtain products with desired properties, to improve manufacturing efficiency and reduce process costs. PATs have been utilised in various industrial branches to gain a deeper understanding of particular process stages, identify crucial control parameters, ensure the product quality by optimal design and determine the process disturbances. This book discusses strategic management accounting and green supply chain management; analyzes the plant-wide control structures for industrial processes; the use of vibrational spectroscopy as a tool for in-line process monitoring; and effects of resolution of measurements in the behavior of cumulative sum control charts.

Signal Processing: New Research
Ganesh R. Naik (Melbourne, Victoria, Australia)
In series: Mechanical Engineering Theory and Applications
In series: Engineering Tools, Techniques and Tables
2013. 290 pp.
Hardcover: 978-1-62808-141-1. $150.00.
The field of signal processing has seen exponential growth during the past decade, as remarkable innovations both in research and application have been made. The applications of signal processing are numerous and include audio signal processing, biomedical engineering, multimedia, video signal processing, pattern analysis, pattern recognition, artificial intelligence, decision making, control systems, and many more. In the past few years, a new wave of advanced signal-processing techniques has delivered exciting results, increasing systems capabilities of efficiently exchanging data and extracting useful knowledge from them. The theory and applications of signal processing are concerned with the identification, modeling and utilization of patterns and structures in a signal process. This book is aimed to provide a self-contained introduction to the subject as well as offering a set of invited contributions, which we see as lying at the cutting edge of both empirical and computational aspects of signal processing research. This book presents state-of-the-art and recent research results on the application of advanced signal processing techniques for improving the value of signal, image and video data. The book is likely to be of interest to post graduate students, researchers, engineers, and professors - in the field of signal processing. This book is organized into 13 chapters, covering diverse applications of signal processing research.

Smart Microgrids: New Advances, Challenges and Opportunities in the Actual Power Systems
Hussein M. Khodr (Qassim University, Engineering College, Department of Electrical Engineering, Buraidah, KSA)
In series: Electrical Engineering Developments
Hardcover: 978-1-62808-975-2. $150.00.
In recent years, electrical power and energy systems have undergone an unprecedented revolution never observed before. The liberalization of electricity markets, the integration of electrical vehicles, information technology innovation, advanced communication systems, and smart-metering, etc., are all contributing to major changes in the basic operations of electrical power systems in their entirety. Consequently, all these aspects must enable electrical power and energy systems to become more intelligent, providing benefits, not only for the utilities and power systems operators, but also for consumers and society as a whole. This book aims to share, address and disseminate state-of-the-art research, development and implementation results of microgrids in a simple way, in order to bring researchers, engineers and practitioners worldwide together, from both academia and industry, with the aim of fostering new advances; identifying challenges and opportunities in technology operation; and planning and design interactions among engineers, researchers and stakeholders in this important field of knowledge. This textbook consists of six chapters that have been written by relevant academics, researchers and engineers. Most of the chapters include state-of-the-art of algorithms, methods, know-how and examples of applications in academic or industrial problems, as well as their solutions through the most adequate optimization technique. Researchers, engineers and students are encouraged to develop their own simple computer programs in order to solve the problems they encounter using the techniques outlined in this book.

Some Problems in the Theory of Engineering Systems (Geometric Approaches)
Alexander Milnikov and Archil Prangishvil
(In Georgian Technical University, Tbilisi, Georgia)
In series: Engineering Tools, Techniques and Tables
It has been proven that to any electric circuit there exists a corresponding two pairs of conjugate linear vector spaces. One of these pairs is generated by a homological group, while the other is cohomological. A new method of analysis of mechanical and electric circuits is proposed, which consists of representing the main variables and matrices of oscillatory circuits in terms of many-dimensional tensor objects. A solution is obtained for the problem of defining eigenvalues of pure-loop and pure-node circuits. A new method is developed for defining a full range of eigenvalues of linear oscillatory systems with a great number of degrees of freedom. The notion of three-dimensional generalized rotations has been introduced. Relations between the parameters of the spinor representation of a group of three-dimensional generalized rotations and the coordinates of the initial and terminal points of rotation have been obtained. The simple relations between the elements of a three-dimensional orthogonal matrix of the basic representation and the Euler angles, on the one hand, and the coordinates of the initial and terminal points of rotation, on the other hand, were derived. The spinor method of solution of inverse kinematic problem for spatial mechanisms with spherical pairs has been developed and the corresponding algorithm has been proposed. The obtained results permitted to reduce the actual three-dimensional problem of spatial motion control to the one-dimensional problem; simple adaptive algorithms are suggested, by means of which various partial problems on the terminal control are solved under various terminal conditions. New algorithms of control of spatial rotations of manipulating robots are studied.

Structural Analysis and Modelling: Research and Development
Yucheng Liu (Assistant Professor, Department of Mechanical Engineering, College of Engineering, University of Louisiana, Lafayette, LA, USA)
In series: Engineering Tools, Techniques and Tables
Hardcover: 978-1-62618-674-3. $150.00.

‘Structural Analysis and Modeling’ examines and determine the effects of loads on physical structures and their components. This technology substantially incorporates a number of science and engineering fields, such as mechanical science, applied mechanics, chemistry, mechanical and engineering design, computational simulation, earthquake engineering, architecture, and pharmacological, etc. Therefore, investigation on the research and development of structural analysis and modeling is of great significance and will have profound potential impact on the above areas. This book examines the recent studies and achievements made in the structural analysis and modeling. In the book, Chapters 1 through 5 demonstrate the structural properties and molecular dynamics of chemical materials that are extensively applied in chemistry, chemical engineering, and pharmaceutical. Chapters 6 to 10 present analytical and numerical modeling and analysis of engineering materials and structures, such as honeycomb structures with cellular materials, elastoplastic discs, stiffened plates, and civil aircraft. Chapters 11 and 12 discuss the structural behavior and seismic response of engineering architectures through a thorough seismic analysis. The Chapters in this book testify to the vitality of structural analysis and modeling and illustrate the considerable potential for use of these techniques in the future. The book is intended to serve as a reference for researchers and engineers, as well as graduate students.

Titanium Alloys: Formation, Characteristics and Industrial Applications
Lai-Chang Zhang and Chao Yang (School of Engineering, Edith Cowan University, Australia)
In series: Engineering Tools, Techniques and Tables

Titanium and its alloys are one of the important engineering materials that are becoming increasingly popular for aerospace and biomedical applications due to their wide range of desirable properties. However, these unique properties of titanium and its alloys are strongly affected by different parameters including: chemical composition, microstructure, manufacturing details and heat treatment history. On the other hand, there has been considerable interest in recent years in the development of advanced titanium alloys in nanostructured, ultrafine-grained, and/or amorphous structure to achieve high performance compared with their conventional coarse-grained counterparts. These new titanium alloys show incomparable plasticity with respect to the conventional titanium alloys. This book highlights the recent advances in the understanding of the formation, characteristics and application of titanium alloys and contains the following topics: Chapter one reviews the significance of titanium and various titanium-based alloys used in different applications, their corrosion characteristics and degradation mechanisms. Chapter two explores the scientific issues on thermo-mechanical processing of titanium alloys, with the purpose of thorough understanding of a materials microstructure, including how this may be affected or manipulated during manufacturing and processing in order to assess the material’s suitability for a given application. Chapter three and Chapter four show the application of a rapid manufacturing technology – Selective Laser Melting (SLM) to manufacture CP-Ti and biomedical beta-type titanium alloys. Chapters five and seven present the formation and properties of biomedical titanium alloys prepared by powder metallurgy routes. Chapter eight reports the fabrication and corrosion behavior of Ni-free TiZrCuPLSn BMGs prepared by different techniques. Chapter nine reviews the current progress in the formation, characteristics of titanium based bulk metallic glass matrix composites. Chapters ten-eleven review a strategy of formation of multiple length-scale microstructure composites in order to simultaneously enhance the strength and plasticity in nanostructured titanium alloys. In summary, this book advances the further understanding of the formation, characteristics and industrial applications for many types of titanium alloys.

U.S. Industrial Design Sector: Occupational, Business and Innovation Profiles
Louis H. Nielsen
In series: Manufacturing Technology Research
2013. 75 pp.
Softcover: 978-1-62948-371-9. $52.00.

Design is a field with a large and extensive presence in our nation’s manufacturing and services industries, as documented by the national datasets that provide the basis for this book. Designers are prolifically inventing new products, processes, and systems that have a profound impact on our economy and civil society. The National Endowment for the Arts (NEA) Design Program has been tracking numerous trends in the field of design, from the growing movement of design thinking to social impact design. This book brings together analytical perspectives regarding federal data on industrial design drawn from the U.S. Bureau of Labor Statistics (BLS). The BLS defines industrial designers as ‘those individuals that develop the concepts for manufactured products such as cars, home appliances, and toys.’ While this dataset enables a quantitative grasp of the industry, BLS’ definition is arguably limited in scope. Today’s industrial designers find themselves in a variety of roles and functions beyond the development of manufactured products.
ENVIRONMENT

Advances in Environmental Research. Volume 30
Justin A. Daniels
In series: Advances in Environmental Research
Hardcover: 978-1-62948-204-0. $150.00.
This series covers leading-edge research focusing on the environment, including current research data on the current applicability and challenge of life-cycle approach for assessing GHG emission and mitigation from the Waste Sector in Vietnam; a challenge for biodiversity preservation in the Congo Basin of zoonotic diseases emergence; opportunities for efficient renewable energy systems and the environment; the influence of evapotranspiration on wastewater constructed wetland treatment efficiency; a key tool for the scaling up of soil bio/phytoremediation processes with microcosms; sustainable renewable energy from timber waste produced from the rainforest of Brunei Darussalam and its environmental impact; historical defaunation and conservation prospects for medium and large mammals in the Brazilian Atlantic Forest; and Romania as a Case Study using geostatistical tools to pinpoint ‘hotspots’ showing biodiversity threats.

Advances in Environmental Research. Volume 31
Justin A. Daniels
In series: Advances in Environmental Research
Hardcover: 978-1-62948-746-5. $150.00.
This series covers leading-edge research focusing on the environment, including current research data on the biomass energy potential and future prospects; landscape assessment as tool for protection and development of mining heritage; water management; multitemporal analysis of thermal field modification and its results in the landscape of the Innheim River; sea level change as a forcing function of anchialine cave environments readjustment in the humid tropics of the Gulf of Mexico and the Caribbean; underutilized fruits of the Andes; ecophysiology of temperate fruit trees in the tropics; correlation between atmospheric CO2 and global climate; rainwater acidification with increasing atmospheric carbon dioxide and its impact on calcium carbonate dissolution; sustainability of forest ecosystems and biotic regulation of carbon cycle; heavy metal pollution as a factor of soil acidification; and the impact of climate abnormalities in India on agriculture and farmers.

Advances in Environmental Research. Volume 32
Justin A. Daniels
In series: Advances in Environmental Research
2014. 373 pp.
Hardcover: 978-1-63117-329-5. $150.00.
This series covers leading-edge research focusing on the environment, including current research data on improved gas and vapor detection using denuder technology; environmental protection from thermodynamic properties; solar and wind energy resources; salt-related processes in the leather industry; climate change impacts in the Philippines; ecological resilience; climate change and Australian rainforest; seawater desalination; biochemical gas sensors; desalination of brackish water; and time scales for aggregating climatic data.

Air Pollution: Sources, Prevention and Health Effects
Rajat Sethi (Texas A&M Health Science Center (TAMHSC), Kingsville, Texas)
In series: Air, Water and Soil Pollution Science and Technology
In series: Pollution Science, Technology and Abatement
2013. 376 pp.
Hardcover: 978-1-62417-735-4. $195.00.
e-book: 978-1-62417-746-0. $195.00.
Industrial pollution is the largest fountain of air offenses in most of the developed world. Statistics from the U.S. Environmental Agency confirm that more than half of the nation’s total pollution is courtesy of industry. What’s more, six out of every ten people in the United States live in urban areas and are currently inhaling these bi-products. The consequence of air misuse is glaring: approximately four percent of all deaths in the United States are attributed to air pollution. This book highlights the sources and effects of air pollution, and also puts forth solutions. Successful pollution prevention is essential to our future well-being. Quintessential to this end, is prevention through education; the goal of this publication.

Air Quality: Environmental Indicators, Monitoring and Health Implications
Arthur Hermans
In series: Air, Water and Soil Pollution Science and Technology
In series: Environmental Science, Engineering and Technology
Hardcover: 978-1-62808-259-3. $69.00.
This book discusses the environmental indicators, monitoring and health implications of air quality. Topics in this compilation include the application of a Mars-based regression model to the air quality study in Northern Spain; microbial air sampling; the impact of air pollution from the mining-metallurgical complex on the content of total sulfur in plant material and soil; ecotoxicity assessment of traffic-related airborne pollution; and air quality in occupied school buildings spaces in the south of Portugal.

Anaerobic Digestion: Types, Processes and Environmental Impact
Ana Torales
In series: Environmental Science, Engineering and Technology
In series: Waste and Waste Management
2013. 175 pp.
Hardcover: 978-1-62808-884-7. $120.00.
e-book: 978-1-62808-885-4. $120.00.
Anaerobic digestion is used for industrial or domestic purposes to manage waste and/or to produce fuels. Anaerobic digestion are the group of processes by which microorganisms break down biodegradable material in the absence of oxygen. In this book, the authors present current research in the study of the types, processes and environmental impact of anaerobic digestion. Topics include the development and application of anaerobic digestion to treat husbandry and industrial wastewater in the Mekong Delta of Vietnam; anaerobic digestion of agricultural waste; evaluation of decentralized anaerobic digestion systems for wastewater treatment, reuse and nutrient recycling to alleviate water and food stress; effects of substrate-to-inoculum ratio on anaerobic digestion of vegetable wastes; anaerobic digestion sustainability effects on plant-wide performance and automation in centralized wastewater treatment; and anaerobic co-
digestion of cheese whey and the screened liquid fraction of dairy manure.

**Anthropology of Environmental Education**
*Helen Kopnina (Amsterdam Institute of Advanced Labour Studies, Amsterdam, The Netherlands)*
In series: *Education in a Competitive and Globalizing World*

Hardcover: 978-1-61470-033-3. $75.00.
Softcover: 978-1-62808-247-0. $59.00.
e-book: 978-1-61470-154-5. $75.00.

This book aims to substantiate the growing body of research of sociocultural contexts in which environmental education, formal or informal, take place. Innovation in environmental education that takes local contexts into account is necessary, in terms of both recognizing global and historical forces that lead to environmental degradation and social and technological changes that could potentially provide solutions to environmental problems. Today, we face some of the greatest environmental challenges in global history, including climate change, deforestation, desertification and the rapid extinction of species of plants and animals. As with many social concerns and issues, the education system is widely seen as the appropriate vehicle for wide scale social reform. Environmental education is becoming increasingly important due to a number of changes in society.

**Assessment of Heavy Metal Contamination in the Marine Environment of the Arabian Gulf**
*Humood Abdulla Naser (Department of Biology, University of Bahrain, Kingdom of Bahrain)*
In series: *Environmental Health - Physical, Chemical and Biological Factors*
In series: *Marine Biology*
2013. 111 pp.
Softcover: 978-1-62417-619-7. $52.00.
e-book: 978-1-62417-625-8. $52.00.

The Arabian Gulf is characterized by physical, chemical and biological uniqueness. It is considered the hottest water body in the world. Marine organisms and ecosystems in the Arabian Gulf are unique as they thrive despite extreme environmental conditions such as marked fluctuations in sea temperatures and elevated levels of salinity. Heavy metals are serious threats to ecosystems and human health due to their toxicity, persistence and bioaccumulation characteristics. Coasts of the Arabian Gulf are witnessing rapid industrialization and urbanization that contribute to heavy metal loads in the coastal and marine habitats. Continuous inputs of heavy metals from different anthropogenic sources in the Arabian Gulf could be critical for both the naturally stressed marine ecosystems and humans that rely on marine resources for food, recreation and industry. This book identifies valued ecosystem components in the Arabian Gulf, characterizes sources of anthropogenic impacts, assesses the heavy metal contamination in a variety of living organisms, seawaters and sediments, and suggests measures for environmental management of heavy metal pollution in the Arabian Gulf.

**Biofuels and the Environment: Impact Assessments and Mitigation Opportunities**
*Tobias M. Fischer*
In series: *Environmental Research Advances*
In series: *Energy Science, Engineering and Technology*
2013. 239 pp.

This book examines the first of the Environmental Protection Agency's (EPA's) triennial reports on the current and potential future environmental impacts associated with the requirements of the Clean Air Act. It reviews environmental and resource conservation impacts, as well as opportunities to mitigate these impacts, at each stage of the biofuel supply chain: feedstock production, feedstock logistics, biofuel production, biofuel distribution, and biofuel use. The information included here is considered foundational for future efforts to quantitatively compare the environmental impacts of alternative scenarios for meeting the goals of the RF52 program, representing the best available information through July 2010 and reflecting the current understanding about biofuel production and use, including input from the U.S. Departments of Agriculture and Energy.

**Bioremediation: Processes, Challenges and Future Prospects**
*Jesús Bernardino Velázquez-Fernández and Saé Muñiz-Hernández (Universidad Autónoma de Nayarit, Mexico)*
In series: *Environmental Remediation Technologies, Regulations and Safety*
Hardcover: 978-1-62948-513-3. $175.00.

This book presents state-of-the-art research on bioremediation, which is understood as a discipline that uses organisms or their products to reduce or eliminate the adverse effects of pollutants in the environment. Today, there are many research groups that focus on remedying the adverse effects of our industrialized society, which release compounds daily, increasingly polluting the environment. This book compiles the most important work of distinguished scientists around the world who are at the vanguard in this discipline, covering the environments of soil and water, as well as a great variety of microorganisms and mechanism bioremediators. Thus, the bioremediation strategy and bioremediator should be chosen according to the pollutant. This material is one of the few available for discussion in literature, and the authors and editorial board hope that this book can be used as a guide or as a base material useful for people who want to develop or apply new strategies in the bioremediation field. The book consists of the following sections: 1) bacterial bioremediation, 2) microbioremediation, 3) phyto- and phytoremediation, 4) composite bioremediation and finally 5) derivative bioremediation. Each section is disposed depending on the kind and type of pollutant; inorganic or organic; and by the complexity of organic mixtures. Studies include in silico, in vitro, in situ, ex situ approaches, from mathematical models to real landscape cases, including analytical methods to assess bioremediation efficacy and the biotechnological use of rhamnolipids, acetogenins, surfactants, micro-bubbles, agricultural residues and enzymes to improve or achieve bioremediation. This book is intended to provide tools to readers in order to apply or to understand the feasibility, advances, advantages, disadvantages, aspects, processes, challenges and future prospects in bioremediation.

**Carbon Cycle Science: Research Priorities and Congressional Considerations**
*Gabriel Gonzales*
In series: *Environmental Research Advances*
Softcover: 978-1-62808-374-3. $52.00.
e-book: 978-1-62808-375-0. $52.00.

Understanding the Earth's carbon cycle is an urgent societal need as well as a challenging intellectual problem. The impacts of human-caused changes on the global carbon cycle will be felt for hundreds to thousands of years. Direct observations of carbon stocks and flows,
process-based understanding, data synthesis, and careful modeling are needed to determine how the carbon cycle is being modified, what the consequences are of these modifications, and how best to mitigate and adapt to changes in the carbon cycle and climate. The importance of the carbon cycle is accentuated by its complex interplay with other geochemical cycles (such as nitrogen and water), its critical role in economic and other human systems, and the global scale of its interactions. This book provides an overview of research priorities and Congressional considerations relating to carbon cycle science.

Clean Air and Water: Summaries of Major Federal Laws

Caroline McNulty and Roger Huber
In series: Environmental Research Advances
2013. 97 pp.
Softcover: 978-1-62808-444-3, $52.00.
The principal statute addressing air quality concerns, the Clean Air Act was first enacted in 1955, with major revisions in 1970, 1977, and 1990. The Act requires the EPA to set health-based standards for ambient air quality, set deadlines for the achievement of those standards by state and local governments, and requires the EPA to set national emission standards for large or ubiquitous sources of air pollution, including motor vehicles, power plants, and other industrial sources. The Safe Drinking Water Act (SDWA) is the key federal law for protecting public water supplies from harmful contaminants. First enacted in 1974 and substantially amended in 1986 and 1996, the act is administered through programs that establish standards and treatment requirements for public water supplies, control underground injection of wastes, finance infrastructure projects, and protect sources of drinking water. This book describes both Act’s major provisions and provides tables listing all major amendments, with the year of enactment and Public Law number, and cross-referencing sections of the Acts with the major U.S. Code sections of the codified statute.

Climate Change, Infrastructure, and Urban Systems: Vulnerabilities and Impacts

Scott D. Putman
In series: Climate Change and its Causes, Effects and Prediction
Hardcover: 978-1-62948-000-8, $110.00.
This book provides an overview of the technical report issued by the U.S. Department of Energy on climate change and infrastructure, urban systems and vulnerabilities. The book is a summary of the currently existing knowledge based on this topic, nested within a broader framing of issues and questions that need further attention in the longer run. Current knowledge indicates that vulnerability concerns tend to be focused on extreme weather events associated with climate change that can disrupt infrastructure services, often cascading across infrastructures because of extensive interdependencies, threatening health and local economies, especially in areas where human populations and economic activities are concentrated in urban areas. Vulnerabilities are especially large where infrastructures are subject to multiple stresses, beyond climate change alone; when they are located in areas vulnerable to extreme weather events; and if climate change is severe rather than moderate. This book examines promising approaches for risk management, based on emerging lessons from a number of innovative initiatives in U.S. cities and other countries, involving both structural and non-structural options.

Climate Change: Federal Policy Approaches, Perspectives and Adaptation Efforts

Konstantin Paerson
In series: Climate Change and its Causes, Effects and Prediction
2013. 144 pp.
Hardcover: 978-1-62808-790-1, $110.00.
Congress has, over the past three decades, authorized and funded federal programs to improve understanding of climate changes and their implications. Climate changes have potentially large economic and ecological consequences, both positive and negative, which depend on the rapidity, size, and predictability of change. Some of the impacts of past change are evident in shifting agricultural productivity, forest insect infestations and fires, shifts in water supply, record breaking summer high temperatures, and coastal erosion and inundation. People and natural systems respond to climate changes regardless of whether the government responds. Over time, the consequences of climate change for the United States and the globe will be influenced by choices made left to others by the U.S. Congress. Policy proposals take different approaches to setting goals or managing climate change-related risks. This book describes four strategies for setting climate change policies: (1) research and wait-and-see, (2) science-based goal setting, (3) economics-based policies, and (4) incrementalist or adaptive management. Each may take into account the concerns, values, and skepticism of some constituencies, but each also has limitations. It is unclear whether any single conceptual approach could cover all elements of the policy debate, though hybrid approaches may help to build political consensus over whether and how much policy intervention is appropriate.

Climate, Energy, and Environment: Issues, Analyses, and Developments, Volume 1

Jake S. Diaz
In series: Environmental Research Advances
Hardcover: 978-1-62948-407-5, $110.00.
This first volume of “Climate, Energy, and Environment: Issues, Analyses, and Developments” presents current topical research in the study of the challenges that affect whether actions to preserve forests could make a cost-effective contribution to reducing global emissions of greenhouse gases; the potential of ocean fertilization for climate change mitigation; the energy and economic impacts of U.S. federal energy and water conservation standards adopted from 1987 through 2011; and Klamath Basin settlement agreements.

Deforestation: Conservation Policies, Economic Implications and Environmental Impact

Carlos Narciso Bouza Herrera (Universidad de La Habana, Cuba)
In series: Environmental Research Advances
Hardcover: 978-1-62948-241-5, $85.00.
This book presents and analyzes some of the most challenging aspects in maintaining forest health. Deforestation is a very important issue in the evolution of the environment. Forests are disappearing and the causes are well-documented. The authors are recognized experts in their fields and they present the results of studies developed in Africa, Latin America and Asia. The effects of using household fuelwood consumption, including those of resettlements and refugees, as well as the need for direct investments in the forest sector are studied. Some studies on the trends and drivers of deforestation, plant coverage, forest regeneration and tree trunk diameter estimations were developed using
quantitative methods. In the various chapters of the book, the authors present studies wherein the effect of the actions of man on both deforestation and in reforestation politics is considered. It is divided into two sections; the first one deals with the analysis of causes and the effects of deforestation; the second section is mainly related to a large variety of quantitative studies of deforestation. The contents of the contributions of this section are concerned with quantifying different deforestation issues. Each chapter elaborates using concrete studies, insights, models and methods; they provide results for real problems. It is remarkable that they also provide methodologies which can be used in similar research.

Drainage Basins and Catchment Management: Classification, Modelling and Environmental Assessment

Evelyn C. Lannon

In series: Water Resource Planning, Development and Management

In series: Environmental Science, Engineering and Technology

2013. 204 pp.

Hardcover: 978-1-62618-367-4. $150.00.
e-book: 978-1-62618-368-1. $150.00.

This book examines the classification, modelling and environmental implications of catchments and drainage basins. Topics include the importance of viable but non-culturable bacteria in monitoring microbial water quality; regionalizing hydrological soil properties in the Brazilian Cerrado region using a semantic import model approach; ephemeral gully and gully erosion in cultivated land; protection and management of Karst water sources catchments; global fallout from humid and semi-humid basins of the Ob Estuary Macroarea; and developing spatial support systems for monitoring of water quality of the River Isunwin catchment in Nigeria.

Environmental and Related Services: U.S. and Global Markets

Mario R. Devin

In series: Environmental Research Advances

In series: Trade Issues, Policies and Laws


Hardcover: 978-1-62948-004-6. $135.00.

Environmental services are an important and growing sector of the global economy and of global services trade. This book estimates the size of the U.S. and global markets for environmental services; estimates the value of trade in the sector; and identifies measures impeding environmental services trade as well as the potential impact of removing these barriers. The book focuses on three core environmental services industries: the water and wastewater services industry, the solid and hazardous waste services industry, and the remediation services industry. The book also examines trade barriers affecting providers of related services, including architecture and engineering services, management consulting services, and related scientific and technical consulting services, among others. While related services are often critical to the provision of the core services mentioned above, the former have not been systematically incorporated into trade negotiations on environmental services.

Environmental Impacts of Mountaintop Mines and Valley Fills on Stream Ecosystems in Central Appalachia

Julian M. Wagner

In series: Environmental Research Advances

2013. 201 pp.

Hardcover: 978-1-62948-096-1. $135.00.

This book assesses the state of the science on the environmental impacts of mountaintop mines and valley fills (MTM-VF) on streams in the Central Appalachian Coalfields. These coalfields cover about 48,000 square kilometers (12 million acres) in West Virginia, Kentucky, Virginia, and Tennessee, USA. This book focuses on the impacts of mountaintop removal coal mining, which, as its name suggests, involves removing all—or some portion—of the top of a mountain or ridge to expose and mine one or more coal seams. The excess overburden is disposed of in constructed fills in small valleys or hollows adjacent to the mining site. Conclusions are drawn, based on evidence from peer-reviewed literature, and from the U.S. Environmental Protection Agency’s Programmatic Environmental Impact Statement released in 2005, and that MTM-VF lead directly to five principal alterations of stream ecosystems: (1) springs, and ephemeral, intermittent, and small perennial streams are permanently lost with the removal of the mountain and from burial under fill, (2) concentrations of major chemical ions are persistently elevated downstream, (3) degraded water quality reaches levels that are acutely lethal to standard laboratory test organisms, (4) selenium concentrations are elevated, reaching concentrations that have caused toxic effects in fish and birds and (5) macroinvertebrate and fish communities are consistently degraded.

Environmental Pollutants-Induced Oxidative Stress: A Role for Antioxidants in Health Promotion and Aging Prevention

Borut Poljsak and Uros Glavan (Faculty of Health Sciences, Department of Environmental Health, University of Ljubljana, Ljubljana, Slovenia, EU)

In series: Environmental Health - Physical, Chemical and Biological Factors


The book offers a comprehensive review of current research regarding the influences of environmental factors involved in human health and aging. Many environmental compounds promote excessive oxidative stress, which is the primary cause of accelerated aging and which also contributes to the development of human diseases. The basic concepts of aging theories are discussed, as is the promotion of oxidative stress which has been identified as one of the most important mechanisms responsible for the toxic effects of the majority of environmental pollutants. Antioxidants play an important role in the defense against pollutant-induced toxicity.

Environmental Protection Agency and Toxic Chemicals Management

Robin Laurits

In series: Environmental Remediation Technologies, Regulations and Safety

2013. 144 pp.

Hardcover: 978-1-62808-244-9. $110.00.

Tens of thousands of chemicals are listed with the Environmental Protection Agency (EPA) for commercial use in the United States, with an average of 600 new chemicals listed each year. The EPA’s ability to effectively implement its mission of protecting public health and the environment depends on credible and timely assessments of the risks posed by toxic chemicals. In 1976, Congress passed the Toxic Substances Control Act (TSCA) to provide the EPA with the authority to obtain more information on chemicals and to regulate those chemicals that the EPA determines pose unreasonable risks to human health or the environment. The TSCA authorizes the EPA to review chemicals already in commerce and chemicals yet to enter commerce.
In 2009, the EPA announced TSCA reform principles to inform ongoing efforts to manage toxic chemicals. This book assesses the increased efforts of the EPA to ensure the safety of toxic chemicals management.

**Eutrophication: Causes, Economic Implications and Future Challenges**
*Alain Lambert and Camila Roux*

In series: *Environmental Science, Engineering and Technology*
Hardcover: 978-1-62808-498-6. $150.00.

In this book, the authors present topical research in the study of the causes, economic implications and future challenges of eutrophication. Topics discussed include the performance of mechanical aeration systems in the control of eutrophication in stagnant waters; using cyanobacteria as a biosorbent for heavy metals in waste waters; a state-of-the-art review on eutrophication research in the context of climate warming; assessing Daphnia population dynamics and recovery patterns after exposure to multiple environmental stressors in a eutrophic lake; the environmental and health consequences of blue-green algae blooms; eutrophication and recovery of the large and deep subalpine Lake maggiore in Italy; causes and potential management strategies of current and future eutrophication of nearshore marine environments; promoting mechanisms of the rare earth industry on water eutrophication; the life-cycle eutrophic impact of future energy systems; and the study of particle size of the natural coagulant tanfloc SG to obtain drinking water by coagulation/flocculation.

**Floodplains: Environmental Management, Restoration and Ecological Implications**
*Enner Herenio Alcântara (Department of Cartography, Sao Paulo State University - UNESP, Brazil)*

In series: *Environmental Research Advances*
Hardcover: 978-1-62808-998-1. $150.00.

A floodplain is a flat, or nearly flat, land that is adjacent to a stream or river which experiences occasional flooding (a naturally occurring process), and those who live near rivers and floodplains are especially interested in them. Historically, floodplains have been used for waste disposal, supplies, power generation, transport and food. In this book, the student or professional will find information about some floodplains around the world and their main problems, as well as some techniques used to study them. This book is divided into nine chapters, and each one aims to show some relevant studies in floodplains and lakes using assorted themes, such as: mercury specification and bioavailability, plant-soil interactions, indicators for evaluating floodplain restoration, floodplain formation, phytoplankton community, storage and release of water, hydrodynamic heavy metals and hydrodynamics.

**Fly Ash: Sources, Applications and Potential Environmental Impacts**
*Prabir Kumar Sarker (Curtin University, Australia)*

In series: *Environmental Science, Engineering and Technology*

Fly ash is a by-product of the combustion of coal and other waste materials. In recent years, there has been intensive research on fly ash because of the increasing demand for the recycling of industrial by-products to improve sustainability in manufacturing and infrastructure. This book presents some of the latest developments in the generation, characterization, utilization and environmental impacts of fly ash. Recent developments on the methods of collection and analysis of fly ash, and novel applications such as in geopolymers and recovery of resources from fly ash are included. The book is intended for professionals in research and academics, and students interested in materials and sustainability. The book consists of 17 chapters contributed by 42 authors. Each chapter ends with an extensive list of references for further information. The topics on fly ash have been grouped into the following three parts: Part 1: various sources, methods of collection, factors influencing collection efficiency, flow and hydrodynamic behaviours, methods of characterization, physical, chemical, leaching and radiation properties, and extraction of metals from fly ash; Part 2: different technological initiatives on utilization, applications in the construction industry, use as a supplementary cementitious material, alkali-activated binder, polypropylene composite materials, and behaviour of fly ash geopolymer concrete; and Part 3: health and environmental issues such as the effects on lung and heart, bioleaching for detoxification, ash from incinerated wastes, and lifecycle assessment of civil structures using fly ash.

**Health Risk Assessments on Potential Pathogens in Land-Applied Biosolids: Concepts and Analysis Considerations**
*Clark D. Bennett*

In series: *Environmental Science, Engineering and Technology*
Hardcover: 978-1-62948-112-8. $110.00.

Approximately 3.4 million tons of biosolids, dry weight, are land-applied annually to farms, forests, rangelands, mine lands, and other land use types. Biosolids are defined by the U.S. Environmental Protection Agency (EPA) as "the primarily organic solid product yielded by municipal wastewater treatment processes that can be beneficially recycled" as soil amendments. Concerns for potential human health effects from land-applied biosolids can be addressed through the conduct of a risk assessment. This book focuses on the systematic planning step (a "problem formulation" defining the major factors to be considered) for risk assessments of pathogens in land-applied biosolids. This book follows the common problem formulation steps of hazard identification, conceptual model development, and the development of an analysis plan. A review of pathogens in biosolids literature forms the basis of this book. The intended use of this book is to assist in the development of future risk assessments and to identify specific research needed to fill current data gaps.

**Land Use, Transportation and Environmental Quality: Interactions and Smart Growth Strategies**
*Joel Thorsen*

In series: *Environmental Research Advances*
Hardcover: 978-1-62808-774-1. $195.00.

Decisions about how and where we build our communities have significant impacts on the natural environment and on human health. Cities, regions, states, and the private sector need information about the environmental effects of their land use and transportation decisions to mitigate growth-related environmental impacts and to improve community quality of life and human health. This book discusses the status of and trends in land use, development, and transportation, and their environmental implications. This book also articulates the current understanding of the relationship between the built environment and the quality of air, water, land resources, habitat, and human health and provides evidence that certain kinds of land use and transportation
strategies can reduce the environmental and human health impacts of development.

**Mangrove Ecosystems: Biogeography, Genetic Diversity and Conservation Strategies**

*Gerard Gleason and Thomas R. Victor*

In series: *Environmental Research Advances*  
Hardcover: 978-1-62808-714-7. $150.00.  

Mangroves are ecosystems situated between land and sea. They are frequently found in tropical and subtropical areas and occupy approximately 18.1 million hectares of the planet. In this book, the authors present current research in the study of the biogeography, genetic diversity and conservation strategies of mangroves. Topics discussed include the biodiversity and biotechnological potential of endophytic fungi from mangrove forests; mangrove conservation in Trinidad and Tobago, West Indies; actinomycetes in mangrove environments; xylariaceae and mangroves; multitemporal analysis of thermal field modification and its repercussions in the landscape of the Itunaehm River estuarine region in Brazil; mangrove finch camarhynchus heliobates; analysis of coastal erosion and forest loss in the Sundarbans mangrove using time-series satellite data; the mangrove ecosystem conservation strategy in the Niger Delta, Nigeria; Madagascar Teal Anas bernieri; and a biogeochemistry study in mangrove ecosystem sediments using a dialysis porewater sampler.

**Monitoring of Water Quality (Scientific and Applied Aspects)**

*Anatoly Maximovich Nikanorov (The Russian Academy of Sciences, Hydrochemical Institute, Rostov-on-Don, Russia)*

In series: *Environmental Science, Engineering and Technology*  
In series: *Water Resource Planning, Development and Management*  

In this book a brief description of monitoring systems of the most developed countries of the world (the USA, Canada, European states) and Global Environment Monitoring System (GEMS/WATER) is given. A structure of a state monitoring system of inland surface waters of the Russian Federation including the subsystems of surveillance, operational and special types of monitoring is considered in detail. A large section of the book is dedicated to the results of full-scale ecological modelling and a study of intrabasin processes as a basis for ecological standardization. A methodology for complex assessment of ecological modelling and a study of intrabasin processes as a basis for large section of the book is dedicated to the results of full monitoring systems of the most developed countries of the world. A significant amount of natural resources such as lands, waters, biodiversity, ecosystem services etc. are all part of an agricultural system. Modern agriculture significantly affects the state and sustainable exploitation of natural resources being a major factor for environmental degradation such as pollution, destruction, and extortions. In this book, the authors present current research in the study of conservation strategies, globalization & politics and sustainable uses of natural resources. Topics discussed in this compilation include management strategies for conservation of natural resources in agriculture; implications of existing benefit sharing mechanisms of Ghana’s National Strategy on reducing emissions from deforestation and forest degradation (REDD+); Australian resources sector under a low carbon policy; governance for sustainable reclamation after disasters: lessons from Bam; a case study along the Tonle Sap Lake in Cambodia of public participation in fisheries governance and management in the Greater Mekong Sub-Region (GMS); and the battle for control of global crude oil markets: OPEC and the seven sisters.

**National Plans for Research of Climate and Global Change**

*Anton Levchin*

In series: *Environmental Health - Physical, Chemical and Biological Factors*  
In series: *Climate Change and its Causes, Effects and Prediction*  
2013. 244 pp.  

This book provides an overview of the U.S. Global Change Research Program (USGCRP) which coordinates and integrates scientific research across thirteen agencies of the United States Government and whose mission focuses on changes in the global environment and their implications for society. The environment is changing rapidly. Increases in world population, accompanied by industrialization and other human activities, are altering the atmosphere, ocean, land, ice cover, ecosystems, and the distribution of species over the planet. Understanding these and other global changes, including climate change, is critical to our Nation's health and economic vitality. Scientific research is critical to gaining this understanding. Research, along with an array of increasingly sophisticated tools for collecting and analyzing data, can provide essential knowledge to governments, businesses, and communities as they plan for and respond to the myriad manifestations of global change, including sea-level rise and ocean acidification, heat waves and drought, and the severe storms, floods, and forest fires that pose an ever-growing risk to life, property, and agriculture.

**Natural Resources: Conservation Strategies, Globalization & Politics and Sustainable Uses**

*Simon A. Maillet and Laurent C. Valcourt*

In series: *Wildlife Protection, Destruction and Extinction*  
In series: *Environmental Science, Engineering and Technology*  
Hardcover: 978-1-62948-185-2. $150.00.  

A significant amount of natural resources such as lands, waters, biodiversity, ecosystem services etc. are all part of an agricultural system. Modern agriculture significantly affects the state and sustainable exploitation of natural resources being a major factor for environmental degradation. In this book, the authors present current research in the study of conservation strategies, globalization & politics and sustainable uses of natural resources. Topics discussed in this compilation include management strategies for conservation of natural resources in agriculture; implications of existing benefit sharing mechanisms of Ghana’s National Strategy on reducing emissions from deforestation and forest degradation (REDD+); Australian resources sector under a low carbon policy; governance for sustainable reclamation after disasters: lessons from Bam; a case study along the Tonle Sap Lake in Cambodia of public participation in fisheries governance and management in the Greater Mekong Sub-Region (GMS); and the battle for control of global crude oil markets: OPEC and the seven sisters.

**Nature Science**

*M. R. Islam*

In series: *Environmental Science, Engineering and Technology*  
2013. 358 pp.  
Hardcover: 978-1-62618-595-1. $150.00.  

No modern technology truly emulates the science of nature. Yet today, some of the most important technological breakthroughs have been mere manifestations of the linearization of nature science: nature linearized by focusing only on its external features. Today, computers process information exactly opposite to how the human brain does. Turbines produce electrical energy while polluting the environment beyond repair even as electric eels produce much higher-intensity electricity while cleaning the environment. Batteries store very little electricity while producing very toxic spent materials. Synthetic plastic materials look like natural plastic, yet their syntheses follow an exactly opposite path. Furthermore, synthetic plastics do not have a single positive impact on the environment, whereas natural plastic materials do not have a single negative impact. In medical science, every promise made at the onset of commercialization proven to be opposite of what actually happened: witness Prozac, Vioxx, Viagra, etc. Nature,
on the other hand, did not allow a single product to impact the long-term negatively. Even the deadliest venom (e.g., cobra, poisoned arrow tree frog) has numerous beneficial effects in the long-term. This catalogue carries on in all directions: microwave cooking, fluorescent lighting, nuclear energy, cellular phones, refrigeration cycles to combustion cycles. In essence, nature continues to improve matters in its quality, as modern technologies continue to degrade the same into baser qualities.

**New Developments in Blue Biotechnology and Environmental Pollution Assessment**

**Ahmed El Nemr**


Hardcover: 978-1-62984-138-1. $350.00.

“New Developments in Blue Biotechnology and Environmental Pollution Assessment” is a compilation of current research, developments and applications into the many aspects of marine biotechnology. This book includes novel and innovative works that contribute to the achievements of blue biotechnology research, and which focus on the world’s oceans as the next frontier for intensive biological investigation, resource development and management, and derivative industrial applications.

**New Developments in Global Warming Research**

**Carter B. Keyes and Olivia C. Lucero**


Hardcover: 978-1-62948-487-7. $150.00.

In this book, the authors discuss new developments in global warming research. Topics discussed in this compilation include the impact of climate change on food security and health in Northern Cameroon; a reversal of global warming using a $3 trillion market force of chemicals and fuels produced directly and selectively in continuous fermentations of gas blends comprising CO and CO2; global warmings’ effects on mesospheric airglow in the Mesosphere and Lower Thermosphere (MLT) region; the implication of regionalism, bilateralism or fragmentation on the universal climate change treaty for Asia; bud dormancy in woody fruit species; evidence of climate change from an urban environment comprising long-term climatic records; changes in temperature in 46 capital cities of Asia from 1901 to 1998; and an investigation of how to explore different levels of parallelism in climatological models using mixed interfaces of parallel programming and how these models can provide mesh refinement at execution time.

**New Trends in Environmental Science**

**Gordon L. Davis**


Hardcover: 978-1-62948-861-5. $150.00.

The environment is considered the surroundings in which an organism operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation. It is this environment that is both so valuable on the one hand, and so endangered on the other. And it is people that are by and large ruining the environment, both for themselves and for all other organisms. This book presents some of the latest research in the field.

**Plant Invasion Ecology: Impacts and Sustainable Management**

**Prabhat Kumar Rai (Department of Environmental Sciences, School of Earth Sciences and Natural Resource Management, Mizoram University, Aizawl, Mizoram, India)**


Hardcover: 978-1-62948-111-1. $85.00.
e-book: 978-1-62948-140-1. $85.00.

Exotic invasive plant species pose a serious threat to native biodiversity. Invasive plants transmogrify the landscape ecology in a highly complex manner leading to a sort of ecological explosion. Global terrestrials as well as aquatic ecosystems are invaded by various invasive plant species. Invasive species are alien species whose introduction and spread threatens ecosystems, habitats or species with socio-cultural, economic and/or environmental harm, and also poses a risk to human health. The present book aims to provide a critical review on the mechanisms, impact and management of invasive species, particularly in the context of plants. Plant invasion is now increasingly being recognized as a global problem and various continents are adversely affected, although to a differential scale. Invasive plants not only alter plant ecosystem functions, but also result in large economic costs from lost ecosystem services. The quest for ecological mechanisms behind the success of invasive species over native species has drawn the attention of researchers worldwide, particularly in the context of the diversity-stability relationship. The transport, colonization, establishment and landscape spread are different steps in the success of invasive plants, and each and every step is checked through several ecological attributes. Furthermore, several ecological attributes and hypotheses (enemy release, novel weapon, empty niche, evolution of increased competitive ability etc.) were proposed pertaining to the success of invasive plant species. However, a single theory will not be able to account for the invasion success among all environments, as it may vary spatially and temporally. Therefore, in order to formulate a sustainable management plan for invasive plants, it is necessary to develop a synoptic view of the dynamic processes involved in the invasion process. Moreover, invasive species can act synergistically with other elements of global change, including land-use change, climate change, increased concentrations of atmospheric carbon dioxide and nitrogen deposition. Henceforth, a unified framework for biological invasions that reconcile and integrate the key features of the most commonly used invasion frame-works into a single conceptual model that can be applied to all human-mediated invasions will be developed.

**Plantations: Biodiversity, Carbon Sequestration, and Restoration**

**Ren Hai (South China Institute of Botany, Chinese Academy of Sciences, China)**


Hardcover: 978-1-62984-090-2. $150.00.
e-book: 978-1-62984-135-0. $150.00.

This book’s primary content explores plantation and non-plantation biodiversity values, mushrooms and woodlands, the roles of arbuscular mycorrhizal in tropical forestry and agro-forestry, the impacts on the abundance and diversity of soil legume-nodulating rhizobia and arbuscular mycorrhizal fungal communities in semi-arid regional plantations. The book also investigates carbon biosequestration and bioenergy options of plantations, lessons from plantation forestry carbon sequestration, and carbon sequestration in agro-forestry-block plantations or mangrove plantations. The book includes targeted chapters on forest restoration and management of plantations for restoring degraded landscapes, alluvial-gold-mining soil reclamation using Acacia mangium plantations, effects of forest practices on wild
populations of Testudo hermanni, effects of incorporation of native species biomass in an acidic andisol to control water contamination from plant residues, and ecohydrology of Amazonian rain forest ecosystems. The international list of authors were carefully selected, and through a rigorous peer review process, this edited book aims to fill some of the information gaps in vegetation restoration and nutrient mobilization, particularly in under researched plantation ecosystems around the world. Our intended audience includes planners of projects to restore and manage forests or plantation to expected climate change. The President affirmed his commitment to his 2009 policy pledge to reduce U.S. GHG emissions by 17% below 2005 levels by 2020 if all other major economies agreed to limit their emissions as well. In 2011, the United States’ gross GHG emissions were approximately 7% below their 2005 levels. The President stated a willingness to work with Congress toward enacting a bipartisan, market-based scheme to reduce GHG emissions. The President’s Climate Action Plan lays out a series of measures in three categories: 1) cut carbon pollution in America, 2) prepare the United States for the impacts of climate change and 3) lead international efforts to address global climate change. Many measures included in the Climate Action Plan have been underway. The plan specifies few timelines or metrics for evaluating progress of individual measures beyond national aggregate or sectoral GHG emissions or energy efficiency. The centerpiece of the President’s announcement arguably is a Presidential Memorandum, also issued June 25, that directs EPA to issue two types of rules to curtail carbon dioxide emissions from new and existing power plants before the end of his term. This book provides an overview of President Obama’s Climate Action Plan, with a focus on key elements and analyses.

**Psychological Approaches to Sustainability: Current Trends in Theory, Research and Applications**
*Víctor Corral-Verdugo (Universidad de Sonora, Mexico) Círculo H. García-Cadena (Universidad Autónoma de Nuevo León, Mexico) Martha Frias-Armenta (Universidad de Sonora, Hermosillo, Mexico)*

In series: *Environmental Science, Engineering and Technology*


An international team of leading scholars and young researchers in environmental psychology offers a relatively new perspective on the origin and solutions of the current environmental crisis. They explain how human nature has played a prominent role in the emergence of ecological problems such as global warming, threats to biodiversity, resources scarcity and pollution. But also, they demonstrate that such problems are interlinked with social problems such as poverty, famine, social and economical inequities and violence. According to this book’s authors, psychological theories and empirical evidence show that the solutions for those socio-ecological problems are to be found in human nature and its psychological predispositions. These include personal motives, world-visions, future perspective, environmental emotions, altruistic tendencies and behavioral capacities among other psychological predispositions that could allow the adoption of sustainable lifestyles. Meeting the ideals of sustainability requires the participation of the natural and social sciences, including psychology, in order to guarantee the fulfillment of its purposes. Behavioral sciences study the psychological characteristics and the contextual factors that lead people to adopt more sustainable lifestyles. In addition, these sciences investigate how sustainable behaviors promote happiness, psychological well being and restoration, which are considered among the aims of sustainable development by governments throughout the world. The authors, who are recognized experts in these areas, offer a state-of-the-art review and data on what it is known regarding the psychological dimensions of the environmental crisis, its behavioral solutions and the repercussions of sustainable behavior on human well being.

**Selected Issues in Water Resources and Management**
*Martin R. Loyd*

In series: *Water Resource Planning, Development and Management*


During the next 10 years, many countries important to the United States will experience water problems (shortages, poor water quality, or floods) that will risk instability and state failure, increase regional tensions, and distract them from working with the United States on important U.S. policy objectives. Between now and 2040, fresh water availability will not keep up with demand absent more effective management of water resources. Water problems will hinder the ability of key countries to produce food and generate energy, posing a risk to global food markets and hobbling economic growth. As a result of demographic and economic development pressures, North Africa, the Middle East, and South Asia will face major challenges coping with water problems. This book provides an overview of selected issues in water resources and management with a focus on global water security; the causes and issues of drought in the United States; green infrastructure and issues in managing urban stormwater and stormwater permits; water resource issues in the 113th Congress; and regulation of power plant wastewater discharges.

**Soil Nutrients**
*Mohammad Miransari (Shahed University, Tehran, Iran)*

In series: *Environmental Health - Physical, Chemical and Biological Factors*


Soil nutrients are among the most important factors affecting plant growth and yield production as well as the environment. They are subjected to variations by different parameters such as climate, soil and plant. This book presents the effects of different parameters on soil nutrients by researchers and scientists from across the globe. The materials are suitable for students, researchers and scientists. A broad range of topics related to soil nutrients is covered in this book.
Steppe Ecosystems: Biological Diversity, Management and Restoration
Manuel B. Morales Prieto and Juan Traba Diaz
(Departamento de Ecología, Universidad Autónoma de Madrid, Madrid, Spain)
In series: Environmental Research Advances
2013. 359 pp.
Hardcover: 978-1-62808-298-2, $150.00.

Steppe environments impose strong selection pressures on organisms due to limiting climate conditions. Biotic factors also exert important pressures on steppe organisms, which display notable and interesting adaptations. At the same time, steppes are among the most fragile and human-impacted ecosystems of the world. As a result of these ecological and conservation features, steppe ecosystems and organisms have long deserved the attention of ecologists, biogeographers and conservation biologists. Through the contribution of steppe ecology experts from different regions of the world, this volume aims to answer hot questions in steppe ecology and conservation such as how did present-day steppe ecosystems arise? Is the steppe a perfectly identifiable and homogeneous biome, or are there different types of steppes? If the latter is true, what are the abiotic and biotic factors that define steppe ecosystems? Do they function differently? In short, what is a steppe? Can we identify clearly steppe-specific taxa? Are their functional traits homogeneous across steppe ecosystems? How are their main biodiversity patterns? However, this book also responds to the current concern about the future of the world’s steppes, threatened by increasing land-use intensification, which brings out the need for their sustainable management on the basis of adequate scientific knowledge. Therefore, the chapters comprising this book not only diffuse current scientific knowledge on steppe ecosystems, which is not a minor aim, but provide cues and tools to evaluate their state and to scientifically inform and help their management. Let us hope these messages reach the adequate ears.

Synergistic Interaction and Cell Responses to Environmental Factors
Vladislav G. Petin and Jin Kyu Kim (Head of Biophysical Laboratory, Medical Radiological Research Center, Obninsk, Kaluga Region, Russia, and Korea Atomic Energy Research Institute)
In series: Biochemistry Research Trends
Hardcover: 978-1-63117-084-3, $175.00.

For a quantitative description of variety cell responses to ionizing radiation, a mathematical model is suggested. In contrast to the conventional point of view that the relative biological effectiveness (RBE) of densely ionizing radiation is determined only by physical characteristics of radiation, this book presents extensive experimental data demonstrating the importance of cell recovery ability in the RBE manifestation. The most impressive data obtained was mostly for diploid mutant cells at the log-stage of growth, in which the RBE was close to unity. It was also shown that the recovery process itself was not damaged after exposure to high-LET radiation, as well as the enhanced RBE values due to the increased yield of irreversible radiation damage from which cells were incapable of recovering. A novel direction in the study of radioprotecting and radiosensitizing action of chemical compounds is also discussed and confirmed in the book. A new conception for the mechanism of synergy is suggested, in accordance with the synergy due to the formation of additional effective damages resulting from the interaction of sublesions. These sublesions are supposed to be non-effective when each agent is applied separately. This concept led to the development of original mathematical models of synergy, which is reviewed by the authors. The model predicts a number of general rules of interaction, the condition under which the highest synergy can be achieved, its value, and the dependence of synergy on the intensity of agents applied. Validation of the model was also verified for various physical and chemical factors, biological objects and end points. The theory appears to be appropriate and the conclusions valid.

The Nature of Water
Natale Gaspare De Santo, Carmela Bisaccia and Rosa Maria De Santo (Second University of Naples, Naples, Italy)
In series: Environmental Science, Engineering and Technology
In series: World Philosophy Series
Hardcover: 978-1-62618-024-6, $150.00.

Water, the most represented substance in the human body, is a trace of the primordial sea where life originated. Its virtues may be represented by the Venus of Botticelli coming out from the sea, as well as by Velasquez’s water seller and by Aristophanes’ chant of the clouds. Water has been connected with medicine from time immemorial and is a common good. For Sumerians, the physician was the man who new water. Homer’s (850-750 BC) mythical tradition made Ocean and Thetys progenitors of all gods and of the world. Hesiod (ca. 700 BC) chanted Poseidon, the sea-lake god, who could cause tempests and seakquakes, generate springs, and also confer the power to walk on water like on earth. In the last century, at the time of the cold war, the information was generated in Moscow about the discovery of polywater, a new form of water, which could be produced in tiny drops in very thin tubes. Astonishingly it boiled at 200 °C and had an initial reputation came to the conclusion that water saved the memory, being imprinted like a cast. However stringent experiments performed at suggestion of the Editor, showed that water could not act as a template for its molecule.

Use of Biological Assessments to Support Water Quality Management: A Primer
Ian W. Sorenson
In series: Environmental Science, Engineering and Technology
In series: Water Resource Planning, Development and Management
2013. 156 pp.
Hardcover: 978-1-62948-481-5, $110.00.

In this book, the role of biological assessments in a variety of water quality management program applications is discussed, including reporting on the condition of aquatic biota, establishing biological criteria, and assessing the effectiveness of Total Maximum Daily Load determinations and pollutant source controls. This book provides a brief discussion of technical tools and approaches for developing strong biological assessment programs and presents examples of successful application of those tools. The objective of the Clean Water Act (CWA), and water quality management programs generally, is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Although we have achieved major water quality improvements over the past four decades and have reduced the discharge of many toxic chemicals into our nation’s waters, many environmental challenges remain, such as loss and fragmentation of habitat, altered hydrology, invasive species, climate change, discharge of new chemicals, stormwater, and nitrogen or phosphorus (nutrient)
pollution. Measuring the condition of the resident biota in surface waters using biological assessments and incorporating that information into management decisions can be an important tool to help federal, state, and tribal water quality management programs meet many of their challenges.

**Water Conservation: Practices, Challenges and Future Implications**

*Monzur A. Imteaz (Faculty of Engineering and Industrial Sciences, Swinburne University of Technology, Melbourne, Australia)*

In series: *Environmental Research Advances*

In series: *Water Resource Planning, Development and Management*


Hardcover: 978-1-62808-993-6. $150.00.


Adverse impacts of climate change are evident in many regions of the world and are likely to get worse in the future. Ever increasing urbanisation is also adding to the magnitude of severity in regards to both quantity and quality. Urban water resources and components of water cycles are likely to be affected severely. To minimise consequences on world water resources, a sustainable water resources management strategy is inevitable. Water conservation in general is a salient part of sustainable water resources management. This book describes several water conservation and recycling options, practices, consequences and future implications showing case studies in different countries around the world. Among all the water recycling options, stormwater and greywater recycling is easily achievable. Initial chapters of the book deal with stormwater harvesting options through rainwater tanks in household scale; design optimisation, and water savings and reliability of such systems around different cities of the world. A review of traditional design practice and future efficient design methodology is also outlined. Also, a scientific approach for selecting an appropriate stormwater system at the authority/institutional level has been proposed. Later chapters describe public acceptance, reuse potentials and benefits of greywater recycling options. In addition, non-structural measures (water pricing and restrictions on water usage) of water conservation have been investigated through a case study. Moving downward, to look at water quality issues, impacts of land-use and land-cover changes on lake water conservation have been presented. Eventually, to be able achieve the final goal, real-life challenges in the transition towards adaptive water governance have been presented with a case study in the USA.

**Weather Satellites: Development Progress and Contingency Gap Issues**

*Sherril G. Ryder*

In series: *Environmental Science, Engineering and Technology*

2013. 150 pp.

Hardcover: 978-1-62948-687-1. $110.00.


This book focuses on the geostationary weather satellites and polar weather satellites. Geostationary environmental satellites play a critical role in our nation’s weather forecasting. These satellite, which are managed by the Department of Commerce’s National Oceanic and Atmospheric Administration (NOAA), provide information on atmospheric, oceanic, climatic, and solar conditions that help meteorologists observe and predict regional and local weather events. They also provide a means of identifying the large-scale evolution of severe storms, such as forecasting a hurricane’s path and intensity. The Editors of this book discuss the National Polar-orbiting Operational Environmental Satellite System (NPOESS) program, planned to be a state-of-the-art, environment-monitoring satellite system that would replace two existing polar-orbiting environmental satellite systems.

**Wildland Fire Management and Public Perspective: A Research Review**

*Gianna R. Heckmann*

In series: *Environmental Remediation Technologies, Regulations and Safety*


Softcover: 978-1-63117-114-7. $52.00.


Recent wildfires in the Western United States highlight the need for understanding the human dimensions of forest and wildfire management. This book provides a synthesis of current social science on eight essential questions regarding research perspectives on the public and fire management. It also reviews some of the key findings from four research studies, highlights the practical consequences of adopting a theory-based approach to understanding wildland fire management in urbanized areas, and presents strategies for successful fire management programs.

**FINANCE**

**Low-Income and Economically Vulnerable Consumers: Assessment and Federal Empowerment Strategy**

*Benjamin Dowling*

In series: *American Political, Economic, and Security Issues*


Softcover: 978-1-63117-109-3. $52.00.


The Consumer Financial Protection Bureau helps consumer finance markets work by making rules more effective, by consistently and fairly enforcing those rules, and by empowering consumers to take more control over their economic lives. The Office of Financial Empowerment, part of the Consumer Education and Engagement division of the Bureau, focuses on low-income and economically vulnerable consumers. This book discusses the empowering low income and economically vulnerable consumers, and provides a statement from a hearing on financial literacy.

**FOOD SCIENCE**

**Aflatoxins: Food Sources, Occurrence and Toxicological Effects**

*Adina G. Faulkner*

In series: *Food Science and Technology*

2014.

Hardcover: 978-1-63117-298-4. $150.00.


Progress in understanding the biology of Aspergillus has greatly improved with the new techniques in genome sequencing and the developed molecular tools that enable rapid genetic analysis of individual genes. Particularly, the genetics of aflatoxin synthesis is regarded as a model to gain insight into fungal secondary metabolism. This compilation discusses topics that include the prevalence of aflatoxin B1 in cereals; contamination exposure, toxicity and control of aflatoxins in food and feed; immunosuppressive actions of aflatoxin; hazards and regulations; toxicological effects, risk assessment and legislation for aflatoxins; and the threat aflatoxins have on the economy and health.
Food Product Traceability in Value Networks
Per Engelseth (Department of Economics, Molde University College, Informatics and Social Sciences, Molde, Norway)
In series: Food Science and Technology
2013. 182 pp.
Hardcover: 978-1-62948-239-2. $85.00.
e-book: 978-1-62948-244-6. $85.00.
Food product traceability became rather suddenly a food industry concern after the turn of the millennium. New laws in developed countries enforcing food product traceability demanded that the food industry follow up with developing information systems that supported this requirement. This was at the time a significant and new organizational and technical challenge for the food industry. Gradually more and more food suppliers are establishing food traceability also because customers require this information. This is the case in developing countries where traceability laws yet to have been implemented and potentially weakly enforced. Food production traceability is an organizational resource, used to trace foods when information about the food product history in the value chain is needed. While most studies of food product traceability and development schemes have been associated with IT-based process development, this book places focus on how food product traceability can be viewed as “value” in an inter-organizational setting; “the value network”. This approach involves taking into close consideration that developing food product traceability is most importantly associated not with technical compliance with government legislation but associated with achieving customer value. The book illustrates how this is understood conceptually and may be achieved in business practice. This fresh view of food product traceability provides reasons for business elevating focus on traceability issues and integrating the creation of such information in a seamless manner into their existing information systems. Stepping stones in developing food product traceability from a customer value standpoint are provided. The book is mainly written to argue for this alternative managerial view of food product traceability which is aimed at being complementary to the currently dominant technical view. It provides a perspective that enriches the dominant IT-base view by taking into consideration the main purpose of food supply which is to achieve satisfied customers. Technology is the helper. The taken approach of the book is founded on literature in the fields of operations management, logistics, supply chain management, industrial marketing and to a limited degree information technology. This reflects that competence in food product traceability is cross functional. The book has an academic profile and a sufficient number of references are provided mainly to permit the reader to investigate on their own specificities related to the arguments brought forward through the book’s text. The book is written both for specialized professionals as well as researchers. The book may be used as a foundation and inspiration in developing research and development projects at different levels including students at a post-graduate level and more advanced. The book also contains two detailed case descriptions of end-to-end food product supply including analysis of this supply based on the framework developed through the book. This provides students and researchers with illustrations as to how a case study on food product traceability may be constructed. The illustrations also aim to anchor the preceding text in business practice.

Food Safety: Developments, Policies, Programs, and Research. Volume 3
Garvin Agnew and Douglas Yokley
In series: Food Safety: Developments, Policies, Programs, and Research
Hardcover: 978-1-62948-875-2. $110.00.
Numerous federal, state, and local agencies share responsibilities for regulating the safety of the U.S. food supply. Federal responsibility for
food safety rests primarily with the Food and Drug Administration (FDA) and the U.S. Department of Agriculture (USDA). The combined efforts of the food industry and government regulatory agencies are often credited with making the U.S. food supply among the safest in the world. This book provides an overview of recent cost-of-foodborne illness estimates; how safe our food is; more disclosure and data needed to clarify impact of changes to poultry and hog inspections; the “pink slime” controversy; and the unapproved genetically modified wheat discovered in Oregon.

Handbook on Cheese: Production, Chemistry and Sensory Properties

*Henrique Castelli and Luiz da Vale*

In series: *Agriculture Issues and Policies*


In this book, the authors present current research in the study of the production, chemistry and sensory properties of cheese. Topics discussed include the technological and chemical characterization of PDO cheeses in Italy; the presence of biogenic amines in cheese; Spanish traditional cheese characteristics; sensorial analysis methodology for goats’ cheese made with clotting enzymes; processed cheese flavors and flavor compounds; the dietary and toxicological aspects of cheese; fortification strategies of cheese as a functional food; health issues, reduction and replacement of salt in cheese; cheese ripening and proteolysis; lipid fraction in cheese; engineering properties of Mexican chihuahua cheese; structure and texture determination of dairy products by using spectroscopic techniques coupled with chemometric tools; clostridium in late blowing defect of cheese; analysis of fatty acids in cheese by capillary electrophoresis; valorisation of whey in small and medium dairy industries; conjugated linoleic acid (CLA) in cheese; assessment of natural levels of functional foods in much higher concentrations than their principal parts. In fact, this would bring in the verbatim of sustainable multifaceted function of cheese and its functional in terms of providing nutrients and/or energy to sustain basic life, but nutraceuticals and functional foods are defined dietary foods that prevent or reverse a diseased state. Nutraceuticals and functional foods are intensively researched for their role in maintaining health and prevention of diseases. Increasing public awareness of the link between diet and health has boosted the consumption of these foods to unparalleled levels, particularly in countries where the population is aging and health care costs are rising. The science behind these foods is growing rapidly not only because of the increasing number of new substances or type of novel foods, but also the regulatory bodies requiring more and more evidence on efficacy, mode-of-action and safety. The nutraceuticals market is growing rapidly, with a 2016 forecast value of $207 billion, according to a new report available on companiesandmarkets.com. The latest trend in nutraceuticals and functional foods sector has been the recovery of nutraceuticals from discarded fruits and vegetables. For example, a wave of possible new functional ingredients is being developed by the Irish Agriculture and Food Development Authority (Teagasc), some of which are derived from waste products. One of their findings has shown that onion peels, a common by-product of food processing, have a higher antioxidant activity than their flesh. Onions are rich in quercetin, a potent antioxidant, also found in apples, berries and other vegetables. This has opened a completely new research area by deriving the potentially important nutraceuticals and functional foods in much higher concentrations than their principal parts. In fact, this would bring in the verbatim of sustainable nutraceutical and functional food sector by putting the focus on the valuable wastes and their value-addition.

**Handbook on Cheese: Production, Chemistry and Sensory Properties**

*Henrique Castelli and Luiz da Vale*

In series: *Food Science and Technology*


In this book, the authors present current research in the study of the production, chemistry and sensory properties of cheese. Topics discussed include the technological and chemical characterization of PDO cheeses in Italy; the presence of biogenic amines in cheese; Spanish traditional cheese characteristics; sensorial analysis methodology for goats’ cheese made with clotting enzymes; processed cheese flavors and flavor compounds; the dietary and toxicological aspects of cheese; fortification strategies of cheese as a functional food; health issues, reduction and replacement of salt in cheese; cheese ripening and proteolysis; lipid fraction in cheese; engineering properties of Mexican chihuahua cheese; structure and texture determination of dairy products by using spectroscopic techniques coupled with chemometric tools; clostridium in late blowing defect of cheese; analysis of fatty acids in cheese by capillary electrophoresis; valorisation of whey in small and medium dairy industries; conjugated linoleic acid (CLA) in cheese; assessment of natural levels of substances with preservative effects in dairy products; cheese microstructure; and the multifaceted function of cheese and its anticancer effect on human leukemic cell growth in vitro.

**Meat Production: Emerging Trends & Market Demands**

*Kimberly B. Murch*

In series: *Food and Beverage Consumption and Health*

Hardcover: 978-1-62948-873-8. $110.00.

Beef markets in the United States are undergoing rapid change as alternative production systems and technologies evolve in response to consumer demands and compete with conventional grain-fed beef production. This book focuses on the issues and implications of alternative beef production systems; slaughter and processing options and issues for locally sources meat; and technology, restructuring, and productivity growth of hog production in the United States from 1992 to 2009.

**Mushrooms: Cultivation, Antioxidant Properties and Health Benefits**

*Grégoire Pesti*

In series: *Food Science and Technology*

2014.
Hardcover: 978-1-63117-521-3. $150.00.
e-book: 978-1-63117-522-0. $150.00.

Many of the vast number of mushroom species are available worldwide. They are valued in gourmet traditions around the world for their unique taste, aroma, nutritional value, and medicinal potential. Many mushroom species are also used in traditional medicines in many countries around the world, including China, Japan, Nigeria, Tibet, etc. Additionally, mushrooms are highly appreciated by many in most communities. Because they are considered as valuable health foods, have acceptable texture and flavor, have low energy content, high proportion of indigestible fiber, and antioxidant constituents. They have good medicinal values, and they contain significant amounts of vitamins, and minerals. This book discusses the cultivation of mushrooms along with the antioxidant properties mushrooms have. The book also provides information on the health benefits edible mushrooms may have on the human body.

**Nutraceuticals and Functional Foods: Natural Remedy**

*Satinder Kaur Brar, Surinder Kaur and Gurpreet Singh Dhillon (Institut National de la Recherche Scientifique (INRS), University of Québec, Centre for Water, Earth and Environment (ETE), Quebec, Canada)*

In series: *Food Science and Technology*

Hardcover: 978-1-62948-783-0. $230.00.

Most foods are considered functional in terms of providing nutrients and/or energy to sustain basic life, but nutraceuticals and functional foods are defined dietary foods that prevent or reverse a diseased state. Nutraceuticals and functional foods are intensively researched for their role in maintaining health and prevention of diseases. Increasing public awareness of the link between diet and health has boosted the consumption of these foods to unparalleled levels, particularly in countries where the population is aging and health care costs are rising. The science behind these foods is growing rapidly not only because of the increasing number of new substances or type of novel foods, but also the regulatory bodies requiring more and more evidence on efficacy, mode-of-action and safety. The nutraceuticals market is growing rapidly, with a 2016 forecast value of $207 billion, according to a new report available on companiesandmarkets.com. The latest trend in nutraceuticals and functional foods sector has been the recovery of nutraceuticals from discarded fruits and vegetables. For example, a wave of possible new functional ingredients is being developed by the Irish Agriculture and Food Development Authority (Teagasc), some of which are derived from waste products. One of their findings has shown that onion peels, a common by-product of food processing, have a higher antioxidant activity than their flesh. Onions are rich in quercetin, a potent antioxidant, also found in apples, berries and other vegetables. This has opened a completely new research area by deriving the potentially important nutraceuticals and functional foods in much higher concentrations than their principal parts. In fact, this would bring in the verbatim of sustainable nutraceutical and functional food sector by putting the focus on the valuable wastes and their value-addition.

**Probiotic and Prebiotic Foods: Technology, Stability and Benefits to Human Health**

*Nagendra P. Shah (Victoria University, Melbourne, Victoria, Australia), Adriano Gomes da Cruz and Jose de Assis Fonseca Faria (State University of Campinas (UNICAMP), Campinas, Brazil)*

In series: *Advances in Food Safety and Food Microbiology*

Edited by: *Dr. Anderson de Souza Sant'Ana and Dr. Bernadette D.G.M. Franco*

2013. 537 pp.
Hardcover: 978-1-61668-842-4. $385.00.
Softcover: 978-1-62808-249-4. $89.00.
Prebiotics is defined as a selectively fermented ingredient that allows specific changes, both in the composition and/or activity in the gastrointestinal microflora that confers benefits upon host well-being and health. It explains the many avenues in which probiotics can be induced into our bodies, as well as the many types of bacterium composed in this product. This new book encompasses the advances of Prebiotics in health and food technology, exploring its beneficial effect on the health of our consumers.

Processed Foods: Quality, Safety Characteristics and Health Implications
Chloe M. Gagne and Daniel B. Jones
In series: Food Science and Technology
Hardcover: 978-1-62808-688-1, $150.00.
e-book: 978-1-62808-689-8, $150.00.
In this book, the authors present current research in the study of the quality, safety characteristics and health implications of processed foods. Topics discussed include novel thermal and non-thermal food processing technologies; persistence of transgenic DNA in processed foods of animal origin; cassava as a source of chemically safe food; transformation of vegetable waste from the food industry into value added products; functional mathematical index (FMI) as an index generator for taming quality as applied to food and processes; nutritional and biological potential of functional foods containing hard-to-cook bean protein hydrolysate; basic guidelines for establishing food standards; strategies for annatto seeds processing with pressurized fluids in the food industry; principles of quality analysis and critical control points applicable to food processing; and engineered colloidal systems from food.

Soy Protein: Production Methods, Functional Properties and Food Sources
Jon M. Casamides and Hector Gonzalez
In series: Food Science and Technology
2013. 120 pp.
Softcover: 978-1-62948-578-2, $72.00.
In this book, the authors study the production methods, functional properties and food sources of soy protein. Topics discussed include the rheology, texture and functionality of soy protein isolate-based potato puree; research advances on the relationships among the processing techniques for soy protein; and soybean proteins applied to microencapsulation as wall materials.

Takuji Ohyama, Toshikazu Nishiwaki, Keiko Morohashi, Satoshi Watamabe, Sayaka Shimojo and Yoshikiko Takashi (Faculty of Agriculture, Niigata University, Niigata, Japan)
In series: Food Science and Technology
In series: Nutrition and Diet Research Progress
2013. 175 pp.
Softcover: 978-1-62618-001-7, $52.00.
e-book: 978-1-62618-607-1, $52.00.
In 2009, the average life span in Japan was 83 years old (women 86.08, men 79.29), which for women was the longest in the world. This may be partly due to the low fat Asian diet of rice, soybean products, fish and vegetables. Soybeans originated from East Asia, and Japanese people eat a variety of traditional foods made from soybeans, such as ninarume (boiled soybean), irimame (baked soybean), tofu (soybean curd), abura-age (deep-fried soybean curd), shoyu (soy sauce), miso (fermented soybean paste), natto (soybeans fermented by bacteria), edamame (green vegetable soybean), and moyashi (soybean sprout) etc. Also, relatively new types of soy food such as tonyu drink (soymilk), snacks, nutritional sports supplements, and dietary supplements for decreasing body weight are consumed. This book was written by professors of the Faculty of Agriculture, Niigata University, and researchers of the Food Research Center, Niigata Agricultural Research Institute, Niigata.

GEOLGY

Feldspar: Mineral Composition, Geology and Petrogenesis Significance
Francis D. Whitmore and Jorge B. Escamilla
In series: Geology and Mineralogy Research Developments
Softcover: 978-1-62948-647-5, $69.00.
In this book, the authors present current research in the study of the mineral composition, geology and petrogenesis significance of feldspar, a group of rock-forming tectosilicate minerals that make up as much as 60% of the Earth's crust. Topics discussed in this compilation include the patterns of phosphorus enrichment in alkali feldspars; crystallization conditions of feldspars in basement rocks in Bangladesh; industrial evaluation and beneficiation of Jordanian feldspar for application in the ceramic industry; unimpeded growth of K-feldspar megacrysts in granitic liquids; the extent to which simple twinning occurs in igneous K-feldspar; and multiple growth twinning of K-feldspar in hypervolcanic granite.

Mountains: Geology, Topography and Environmental Concerns
António José Bento Gonçalves and Antonio Avelino Batista Vieria, (Departamento de Geografia, Instituto de Ciências Sociais, Universidade do Minho, Campus de Azurém, Portugal)
In series: Geology and Mineralogy Research Developments
Hardcover: 978-1-63117-288-5, $175.00.
Mountains areas constitute exceptionally rich environments characterized by an extremely high biodiversity, high geomorphological dynamics, peculiar climatic environments and an important reserve of natural resources (hydrological, geological…). But these areas are also characterized by specific cultural aspects and varied forms of territory exploitation and occupation. The highest mountain areas were once considered repulsive areas, until they began to attract scientists (mainly geographers) in the 19th and 20th centuries. The gradual occupation of these areas with different economical activities during this period started to slow down between the 1960’s – 1980’s, when mountains suffered a gradual abandonment. In the 1990’s, a movement of appropriation over these mountain spaces occurred, promoted mainly by urban societies, in search of new spaces for sport, leisure and tourism. This modification of uses, a key process for revitalization of economically depressed areas, posed some issues, however, in terms of the preservation and management of environmental resources. Although mountain areas are important to local and regional societies, they play a crucial role in the global economy and the environment. They are a source of energy, water, food and other natural resources for both local and distant populations. Therefore, the protection and preservation of mountains is an issue that belongs to all mankind and forces the development of a globally sustainable strategy. The present book intends to outline different
perspectives regarding the geology, topography and environmental issues of mountains, including 13 valuable contributions that reflect its title.

GOVERNMENT

Federal Climate Change Funding: Analyses and Trends
Sandrin Toullart
In series: Climate Change and its Causes, Effects and Prediction
Softcover: 978-1-62948-554-6. $52.00.
The federal government has funded work to address global climate change for more than four decades. An initial focus on science has expanded to encompass both mitigation and adaptation, involving at least 18 agencies plus the Executive Office of the President. The work supported is conducted by universities, national laboratories, private contractors, non-governmental organizations, and some federal agencies. Most of the funding has supported scientific and, since the 1990s, technological research and development. Given uncertainties regarding the risks of future climate change, the federal climate strategy has aimed at improving the information available for decision-making and reducing the costs of technologies that could help abate the risks. A growing component has been federal planning and efforts to adapt to climate change. Complementing the science and technology initiatives have been regulatory actions; programs to build capacity in private, state, local, and international entities to address climate change; and tax incentives to stimulate deployment of low greenhouse gas-emitting technologies. This book summarizes direct federal funding identified as climate change-related from FY2008 enacted funding through FY2013 and the FY2014 request. It reports the Administration’s estimates of tax revenues not received due to energy tax provisions that may reduce GHG emissions and identifies the programs and funding levels, as well as some qualifications and observations on reporting of federal funding, and offers some issues that members of Congress may wish to consider in deliberating U.S. climate change strategies.

HEALTH

Medicare Home Health Benefit: Elements and a Roadmap for Value-Based Incentive Payments
Viktor Persson
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-62808-786-4. $110.00.
The Medicare home health benefit provides coverage for home visits by skilled health care professionals. To be eligible for the home health benefit, a beneficiary must meet three different criteria. The beneficiary must (1) be homebound, (2) require intermittent skilled nursing care and/or skilled rehabilitation services, and (3) be under the care of a physician who has established that the home health visits are medically necessary in a 60-day plan of care. A beneficiary who meets these requirements is entitled to a 60-day episode of Medicare coverage for home health visits, and is then entitled to an unlimited number of 60-day episodes so long as he or she continues to meet the eligibility requirements. There is no cost-sharing requirement for home health services. Roughly 9.6% of Medicare fee-for-service (FFS) beneficiaries (or 3.4 million individuals) used home health services in 2010. Home health services are provided through home health agencies (HHAs), most of which (90%) are freestanding—HHAs not affiliated with an institution such as a hospital or a nursing facility. The number of HHAs participating in Medicare grew by 57% between 2000 and 2010 (from 7,528 to roughly 11,800), with a vast majority of the increase in for-profit freestanding HHAs. This book describes home health eligibility criteria, home health services, characteristics of Medicare beneficiaries who use home health services, and home health providers. Further, this book describes in detail the Medicare home health prospective payment system (HH PPS), provides an overview of Medicare home health payments, and discusses issues for Congress related to the Medicare home health benefit.

U.S. Mental Health Workforce and the State of the Mental Health System: A Primer and Perspectives
Maurice Gordon
In series: Health Care Issues, Costs and Access
Softcover: 978-1-62948-865-3. $52.00.
The federal government is involved in mental health care in various ways, including direct provision of services, payment for services, and indirect support for services. Policy makers have demonstrated interest in the federal government’s broad role in mental health care. They have done so primarily by holding hearings and introducing legislation addressing the interrelated topics of quality of mental health care, access to mental health care, and the cost of mental health care. This book begins with a working definition of the mental health workforce and a brief discussion of alternative definitions. It then describes three dimensions of the mental health workforce that may influence quality of care, access to care, and costs of care. The book then briefly discusses how these dimensions of the mental health workforce might inform certain policy discussions, and provides statements and testimonies from various individuals on mental health care.

HORTICULTURE

Flowers: Morphology, Evolutionary Diversification and Implications for the Environment
Teodor Berntsen and Kaj Alsvik
In series: Botanical Research and Practices
2013. 144 pp.
Hardcover: 978-1-62808-798-7. $120.00.
e-book: 978-1-62808-800-7. $120.00.
In this book, the authors present topical research in the study of the morphology, evolutionary diversification and implications for the environments of flowers. Topics discussed in this compilation include the bioactive components from asteraceae flowers; the classification, phylogenetic status and uses as ornamental groundcover of the arachis species; understanding the role of pigments in flowers; flowers as sources of therapeutic molecules; the floral development of sauvgesia (ochnaceae) revealing different origins of presumed stamnodes; pollen grain diameter, in vitro pollen germination and regression between grain diameter and in vitro pollen germination in pickerelweed (pontederia cordata L.) and the development of novel pollination techniques to overcome the effects of heteromorphic incompatibility and herkogamy in pickerelweed.
INTERNET

Copyright and Creativity in the Digital Economy: Balancing Policy, Protection, and Innovation
Matthew Newman and Noel Oliver

In series: Internet Policies and Issues
Hardcover: 978-1-62948-189-0. $110.00.

Copyright law’s history is one of continuous evolution in the face of technological change. But arguably no prior technological change has impacted copyright with a magnitude comparable to the development of the Internet. Never before has there been such widespread and immediate access to such a broad array of creative works; never before have content creators – ranging from individuals to large corporations – been able to reach a global audience so effortlessly and inexpensively; and never before has it been possible for members of the public to create, transform or distribute multiple perfect copies of works seamlessly, without regard to national borders. How to retain a meaningful copyright system that continues to drive the production of creative works while at the same time preserving the innovative power of the Internet and the free flow of information are questions at the forefront of today’s policy debate. As a broadening array of creators continue to express themselves and share their valuable works with the world, and as the Internet continues to grow in economic, social and cultural relevance, the importance of these questions will only be heightened. The industries that rely on copyright are today an integral part of the U.S. economy, accounting for millions of jobs and contributing billions of dollars to the G.D.P. Moreover, the creative content they produce contributes to the development of the broader Internet economy, spurring the creation and adoption of innovative distribution technologies. Not only do these industries make important economic contributions, they are at the core of our cultural expression and heritage. It is no exaggeration to say that U.S. music, movies, television shows, computer software, games, writings and works of art have changed the world. This book provides a lens through which to assess current policy related to copyright and the Internet, identifying important issues that are being addressed by the courts and those that are ripe for further discussion and development of solutions.

Cyber Infrastructure Protection: Selected Issues and Analyses
Howard C. Collins and Connor R. Hughes

In series: Internet Policies and Issues
2013. 279 pp.
Hardcover: 978-1-62808-581-5. $110.00.
e-book: 978-1-62808-582-2. $110.00.

The Internet, as well as other telecommunication networks and information systems, have become an integrated part of our daily lives, and our dependency upon their underlying infrastructure is ever-increasing. Unfortunately, as our dependency has grown, so have hostile attacks on the cyber infrastructure by network predators. The lack of security as a core element in the initial design of these information systems has made common desktop software, infrastructure services, and information networks increasingly vulnerable to continuous and innovative breakers of security. Worms, viruses, and spam are examples of attacks that cost the global economy billions of dollars in lost productivity. Sophisticated distributed denial of service (DDoS) attacks that use thousands of web robots (bots) on the Internet and telecommunications networks are on the rise. The ramifications of these attacks are clear: the potential for a devastating, large-scale network failure, service interruption, or the total unavailability of service. This book provides an integrated view and a comprehensive framework of the various issues relating to cyber infrastructure protection. It covers not only strategy and policy issues, but also the social, legal, and technical aspects of cyber security as well.

LANGUAGE

Language Processing: New Research
Louis T. Klein and Vivian Amato

In series: Languages and Linguistics
Softcover: 978-1-62948-333-7. $69.00.

In this book, the authors present current research in the study of language processing. Topics include neuroimaging and aphasiology in the 21st century with EEG and MEG studies on language processing in aphasia since the year 2000; language processing in children with specific language impairment; analyzing the language use of learners with learning difficulties and disabilities with regard to challenging behavior; inspection time for verbal stimuli with a focus on letter detection, identification and discrimination speed; and visual recognition of the Chinese compound word as a serial process.

The Development of Prosody and Prosodic Structure
Margaret Kehoe (Faculté de Psychologie et des Sciences de l’éducation, Université de Genève, Genève, Switzerland)

In series: Languages and Linguistics
Hardcover: 978-1-62618-556-2. $150.00.
e-book: 978-1-62618-592-0. $150.00.

This book is a comprehensive yet succinct overview of research on prosodic development, uniting phonetic, phonological, and clinical approaches to the topic. It brings together diverse research findings on prosodic perception, prosodic production, the development of prosodic structure, and prosodic disorders in clinical populations. The book is written for advanced undergraduate students, graduate students, as well as for professionals and scholars working in linguistics, child language development, psychology, or related disciplines. It also introduces the reader to important related themes in speech perception research such as prosodic bootstrapping and word segmentation. Included in this first part is a discussion of the production of prosody during the pre-linguistic and early linguistic periods, with a focus on central topics such as ambient language effects and differentiation of prosody according to pragmatic function. In this part is where the discussion of the development of individual prosodic systems such as stress, timing, intonation, and tone are discussed. This book also deals with clinical aspects of prosody such as the assessment of prosody and atypical prosody in clinical conditions such as autistic spectrum disorder, childhood apraxia of speech, specific language impairment, and hearing impairment. The book’s cross-linguistic approach is documented through numerous examples and illustrations. Chapter summaries, relevant sidebar topics, and a list of key terms make the book highly readable and accessible.
MANUFACTURING
Machining: Operations, Technology and Management
J. Paulo Davim (Department of Mechanical Engineering, University of Aveiro, Santiago Aveiro, Portugal)
In series: Mechanical Engineering Theory and Applications
In series: Materials and Manufacturing Technology
Edited by: Professor J. Paulo Davim (University of Aveiro, Portugal)
Hardcover: 978-1-62100-579-7. $150.00.
Machining is a science and technology that holds great interest in industrialized countries (G7) and countries with emerging economies (BRICS). Nowadays, several important and advanced industries such as the automotive, aeronautic, aerospace, alternative energy, moulds and dies, and biomedical industries, use machining. Machining is a manufacturing process in which parts are shaped by removal of unwanted material. Interest for this topic has increased over the last twenty years, with rapid advances in materials science, micro and nanotechnology, automation, electronics and computer technology. This book aims to provide research and review studies on machining operations, technology and management. This research book can be used for final undergraduate engineering courses (for example, mechanical, manufacturing, industrial, materials, etc.) or as a subject on machining at the postgraduate level. Also, this book can serve as a useful reference for academics, manufacturing researchers, mechanical, manufacturing and industrial engineers, and professionals in related industries with machining operations, technology and management.

MARINE BIOLOGY
Advances in Squid Biology, Ecology and Fisheries. Part I – Oegopsid Squids
Rui Rosa, Ron O’Dor and Graham Pierce (Centro de Oceanografia, Faculdade de Ciências da Universidade de Lisboa, Portugal)
In series: Fish, Fishing and Fisheries
In series: Marine Biology
2013. 349 pp.
Hardcover: 978-1-62808-331-6. $175.00.
The aim of this volume is to gather and synthesize the research conducted on the biology (early life history stages, age and growth, maturation and fecundity), ecology (distribution, migrations, diet, predators and parasites) and fisheries (fishing areas, methods, landings, management and stock assessment) of the most economically relevant oegopsid squids. This squid group dominates the pelagic, oceanic environment and large populations (namely of ommastrephids) are characteristic of the productive shelf-break oceanic boundary currents and upwelling systems, where they normally occupy epipelagic and mesopelagic depths. Little is known about the spawning and embryonic development of these pelagic squids. They spawn in the relatively inaccessible open sea and extrude the eggs in large gelatinous neutrally buoyant egg masses. Oegopsids play a key role on the vertical energy flow of oceanic ecosystems, acting as an important part of the biological pump from the surface to deeper waters. In fact, some species show a typical daily behavior that involves vertical migrations from near-surface waters at night to mesopelagic depths above or within oxygen minimum zones during the daytime. In addition to the critical role both as prey and predator in the open ocean, some species are the target of some of the world’s largest invertebrate fisheries.

Advances in Squid Biology, Ecology and Fisheries. Part II – Myopsid Squids
Rui Rosa, Ron O’Dor and Graham Pierce (Centro de Oceanografia, Faculdade de Ciências da Universidade de Lisboa, Portugal)
In series: Fish, Fishing and Fisheries
In series: Marine Biology
2013. 293 pp.
Hardcover: 978-1-62808-333-0. $150.00.
As with the previous volume, the aim of this book is to gather and synthesize the research conducted on the biology (early life history stages, age and growth, maturation and fecundity), ecology (distribution, migrations, diet, predators and parasites) and fisheries (fishing areas, methods, landings, management and stock assessment) of the most economically relevant myopsid squids. This squid group is considered one of the 37 Wilderness Areas of the World, and it plays an important role in the maintenance of regional macro-ecological processes, as well as indirectly supporting regions with biodiversity and endemicism. The Brazilian Myopsid squid region is also home to Neotropical fish species that occur in diversified aquatic ecosystems, exhibiting different strategies to survive and reproduce. In this scenario of fantastic diversity there exists an intensive and yet insufficiently known interaction of environmental factors and fish communities. To fully understand this it is necessary to know the details about how it works. This volume assembles research articles on different themes of biology of Myopsid fish species. The contents of the ten articles show at least a fraction of the biology and adaptations of fish species to survive and complete their reproductive cycle in the aquatic ecosystems of Myopsid Caatinga ecoregion. The articles address aspects of ecological distribution of fish communities, fish reproduction and behavior, anatomy and histology of the digestive tract and feeding habits of fish, and impacts of fish culture and of fish parasites. This information is important to fish biologists, ecologists, and to all individuals with an interest in fish species.

Biology of Semiarid Tropical Fish
José Rosa Gomes and Sathyabama Chellappa
In series: Marine Biology
Hardcover: 978-1-63117-067-6. $95.00.
Brazil is home to equatorial, tropical, semi-arid, highland tropical, and subtropical climatic regions. The semiarid region of Northeastern Brazil, considered an area of drought polygon, has distinctive scrub vegetation referred to as Caatinga that covers over 10% of the Brazilian territory with approximately twenty million inhabitants. The Caatinga is considered one of the 37 Wilderness Areas of the World, and it plays an important role in the maintenance of regional macro-ecological processes, as well as indirectly supporting regions with biodiversity and endemicism. The Brazilian semiarid region is also home to Neotropical fish species that occur in diversified aquatic ecosystems, exhibiting different strategies to survive and reproduce. In this scenario of fantastic diversity there exists an intensive and yet insufficiently known interaction of environmental factors and fish communities. To fully understand this it is necessary to know the details about how it works. This volume assembles research articles on different themes of biology of semiarid fish species. The contents of the ten articles show at least a fraction of the biology and adaptations of fish species to survive and complete their reproductive cycle in the aquatic ecosystems of semiarid Caatinga ecoregion. The articles address aspects of ecological distribution of fish communities, fish reproduction and behavior, anatomy and histology of the digestive tract and feeding habits of fish, and impacts of fish culture and of fish parasites. This information is important to fish biologists, ecologists, and to all individuals with an interest in fish species.
Lagoons: Habitat and Species, Human Impacts and Ecological Effects

Mweniyikone Mwenyihija (Chartered Water and Environmental Manager, Nairobi, Kenya)

In series: Oceanography and Ocean Engineering
Hardcover: 978-1-62808-092-6. $150.00.

This book provides an important insight that increases the scope of knowledge and investigates leadership in areas of lagoon dynamics and management. In attaining this zeal, both natural and anthropogenic dimension in determining associated impacts and conservation of these vital ecosystems partook in its paramount consideration. To further enrich the book's coverage, the authors' scientific excellence and overall acquired experience in their respective areas of specialization and background was explored to encompass research from different geographic localities. The result of this approach brought about significant and insinuates that opportunities arose where researched information from the tropic, Mediterranean and temperate based lagoon ecosystems were achieved, inverting, providing ecological examination at micro and macro organismic levels. Moreover, the book covers other specialized areas affecting directly or indirectly lagoon biogeochemistry and usage such as: species interaction, microbial threats, anthropogenic and edaphic pressures, application of biotechnology (e.g., application of biomarkers), aquaculture, marine and inland conservation methodologies and waste management.

Neuroecology and Neuroethology in Molluscs: The Interface between Behaviour and Environment

Anna Di Cosmo and William Winlow (Department of Biology, University of Naples "FedericoII", Complesso Universitario Monte Sant'Angelo, Napoli, Italy)

In series: Marine Biology
Hardcover: 978-1-62948-970-4. $150.00.

The term neuroecology was first coined in the 1980s and describes the ways in which species adapt to their environment both in the short term and in evolutionary time. Here, we focus on molluscan neuroecology to show how it interfaces with neuroethology and how animal behaviour adapts to environmental cues. Neuroecology is thus meeting point between ethology, neuroscience, ecology, physics, evolution, and chemistry. In this book, our contributors examine the concept of Neuroecology as applied to molluscs for the first time with particular reference to the areas of chemical ecology, predator prey relationships, neuroethology and evolution. Significant neuroecological progress has been made with a number of molluscan groups in terms of neurotransmitters, complex defensive ink alarm pheromones, biochemical accumulation of shellfish toxins and the evolution of chemical defence mechanisms in species with reduced physical protection. Many molluscs inhabit a world of olfactory cues and their perceptions of the outside world are largely chemically driven, leading to odorant driven behavioural responses. This is important to both molluscan predators and prey and this area is explored in some detail with particular reference to gastropod molluscs. It is also true for cephalopod molluscs which although they have excellent vision, rely on distance chemoreception particularly prey perception, thus demonstrating their significance in affecting marine populations and communities. A better understanding the interactions of chemical cues between predator and prey molluscs will be important in future studies in the area of chemical ecology. Within the immune and neuroendocrine systems of molluscs the primary signalling molecules are exceptionally well-conserved and the pool of molecules used is similar to those in advanced vertebrates. This conservation of molecular systems is important in neuroecology and underlies the conservation of neural mechanisms underlying behaviours as organ systems alter under evolutionary pressure. Indeed, studies on pulmonates have shown that behavioural networks remain virtually intact during these processes, although reflecting the evolutionary changes that adapt the animal to its environment. Such networks exhibit plastic responses to allow for behavioural selection and seasonal change. However, studies on respiratory behaviour lead to the conclusion that many molluscs and other invertebrates are facing extinction because they cannot adapt their respiratory behaviour to the rapidly changing environmental conditions currently occurring particularly where hypoxia threatens the health of ecosystems due to human activity. Such animals may prove to be sensitive models for studying the neuroecological effects of climate change with particular respect to invasive freshwater species such as predators, freshwater plans or microbial species. The challenge for the future is to utilise molluscan species research to illuminate the effects of environmental change on the neuroecology of these species, using them wherever possible to evaluate the degree of ecological change taking place.

Oysters: Biology, Consumption and Ecological Importance

Judith P. Turner

In series: Marine Biology
Softcover: 978-1-62948-806-6. $72.00.
e-book: 978-1-62948-808-0. $72.00.

Oyster reefs provide valuable habitat for many ecologically and economically important species, as well as stabilizing benthic and intertidal habitats. Their bioactivity and structure creation leads to a greater abundance and diversity of other aquatic species. This book focuses on the eastern oyster's aquaculture and diversity of associated species; the cadmium conundrum in British Columbian oysters; the problems and risks related to an exotic oyster introduction case; and the expansion of distribution among spionid polychaetes by accompanying oyster shells during transportation.

Phytoplankton: Biology, Classification and Environmental Impacts

Maria Teresa Sebastiá (Instituto de Investigación para la Gestión Integral de Zonas Costeras, Universitat Politècnica de València, Spain)

In series: Oceanography and Ocean Engineering
e-book: 978-1-62948-655-0. $175.00.

Phytoplankton plays a key role in aquatic ecosystems where it is the major biomass producer. Phytoplankton is characterized by a high time-space variability which is determined by abiotic and biotic factors. In this book, the role of abiotic factors (light, temperature, nutrients, wind, hydrodynamics, CO2 and UV radiation) and biotic factors (bacteria, zooplankton, macrophytes and fish) is discussed. Anthropogenic pressure can alter those environmental factors, causing undesired changes in the composition and biomass of phytoplankton. This book emphasizes the effects on water quality, but bottom sediment is also analyzed. The effectiveness of management measures to restore impacted ecosystems is reviewed and ecological modeling is used as a prediction tool. In this book, the authors describe case studies
in different systems such as natural lakes, reservoirs, marine systems and aquatic microcosm systems, covering a wide range of geographic areas from African tropical lakes and Brazilian subtropical lakes to peri-alpine European lakes.

**Seawater: Geochemistry, Composition and Environmental Impacts**

*Mathew R. White*

In series: *Oceanography and Ocean Engineering*

2013. 186 pp.

Hardcover: 978-1-62808-606-5. $95.00.

In this book, the authors present current research in the study of the geochemistry, composition and environmental impacts of seawater. Topics discussed include the impact of internal wave breaking on the ocean upper layer formation; trace elements in seawater in offshore oil production platform areas; self-purification of seawater; the Salton Sea megaport and seawater canal; and assessing the effect of nearshore currents over the SO2 absorption in Caribbean seawater.

**Teleosts: Evolutionary Development, Diversity and Behavioral Ecology**

*Skylar Carone*

In series: *Fish, Fishing and Fisheries*


Hardcover: 978-1-62948-754-0. $150.00.

The number of proliferation zones in the adult brain is strongly reduced in the transition between fish and tetrapods and even more in mammals compared to non-mammalian vertebrates. While the adult mammalian brain generally contains only two neurogenic areas, the adult teleost brain displays numerous proliferative niches. This book discusses the entire neurogenesis, the sexual reproduction of teleosts and touches on the SO2 absorption in Caribbean seawater.

**Zooplankton: Species Diversity, Distribution and Seasonal Dynamics**

*George Kehayias (Department of Environmental & Natural Resources Management, University of Western Greece, Agrinio, Greece)*

In series: *Marine Biology*

2014. 266 pp.

Hardcover: 978-1-62808-680-2. $150.00.

Zooplankton organisms comprise very important elements of the structure and function of marine and freshwater ecosystems, not only as consumers of primary production, but also as food items for juvenile stages of several fish species. Moreover, its sensitivity to both man-made and natural changes makes zooplankton quite suitable for assessing alterations in the trophic dynamics and the ecological state of aquatic ecosystems related to changes in nutrient loading and climate. Multi-scale, spatial and temporal relationships between zooplankton variability and environmental heterogeneity are still not satisfactorily understood due to the complexity of the different aquatic ecosystems (considering both biotic and abiotic elements). Thus, the ambition of the present edition is to contribute to the understanding of the role of zooplankton by investigating ecological aspects such as the species diversity, their spatial distribution and seasonal dynamics in relation to the environmental influence in various aquatic ecosystems around the world. Topics discussed in this book include the understanding of the role of zooplankton in the transfer of pollutants through trophic food webs; plankton models to explain red tides; spatial patterns of trophy and zooplankton communities in a tropical urban reservoir; the zooplankton variation in five Greek lakes; the zooplankton community in a nuclear power station cooling reservoir; the spatio-temporal dynamics of cladocera and copepoda in the Danube River; the gelatinous zooplankton in the Namibian upwelling region; and the zooplankton community in relation to the environmental factors in a solar saltern.

**MATERIALS SCIENCE**

**Advances in Materials Science Research. Volume 17**

*Maryann C. Wythers*

In series: *Advances in Materials Science Research*


Hardcover: 978-1-62948-734-2. $150.00.

Materials science encompasses four classes of materials, the study of each of which may be considered a separate field: metals, ceramics, polymers and composites. This volume gathers important research from around the globe in this dynamic field including research on the outstanding contributions in the area of polymeric micro and nanoparticles as drug delivery systems; strategies to modify the inorganic clays and to make them compatible with polymeric matrices and the effect of each one; present problems of ceramic lubricating materials, and the design principle of these materials; the study of Pincina alginite and its applications; the methods of determining the composition of polaron with different mobility and their main magnetic, relaxation and dynamics parameters from effective EPR spectra and the development of glass fibre reinforced polyester composites.

**Ferrofluids**

*Franco F. Orsucci and Nicoletta Sala*

In series: *Materials Science and Technologies*


Hardcover: 978-1-62808-410-8. $150.00.

Ferrofluids, are strange materials that are part liquid, part magnet, and which solidify when exposed to magnetic fields. They consist of nanometer-sized magnetic particles dispersed in a nonmagnetic fluid such as water or kerosene and form a magnetic liquid. Ferrofluids are stable colloidal suspensions of nanosized magnetic materials in a suitable basefluid. They can be synthesized with or with suitable surface coatings. The properties are greatly influenced by the grain size, carrier fluid chosen, and composition of the magnetic material and concentration of them in the fluid. Their flow and properties can be tuned with the application of an external magnetic field. The application potential of ferrofluids is enormous. They are important templates, from the fundamental physics point of view, to study the magnetism of non-interacting nanodomains. Also by tuning the concentration of this system, the effect of interaction also could be studied. They are also ideal templates for studying the quantum confinement effects in nanomagnetic materials. Hence, optically they are ideal systems as the grain size approaches the Bohr radius limit, high quantum confinement and induced blue shift can make them optically more transparent, and this confined exciton can assist in nonlinear absorptions. As a random media, this can offer induced scattering which can make them good optical limiters owing to their high shelf life and stability against agglomeration.
Focus on Porous Media Research
Changying Zhao (School of Mechanical Engineering, Shanghai Jiaotong University, Shanghai, PRC)
In series: Mechanical Engineering Theory and Applications
In series: Materials Science and Technologies
Hardcover: 978-1-62618-668-2. $175.00.
Heat transfer in porous media has continuously received great attention in recent years due to its wide applications in engineering. There are various forms of porous media, such as carbonate rock, percolation cluster, packed particles, metal foams, etc., which are either widely distributed in the natural environment or carefully designed for industrial functions. This book covers a broad state-of-the-art knowledge of thermal transport in porous media, and it will be interesting and useful for both academic and industrial communities.

Neutron Diffraction: Principles, Instrumentation and Applications
Xinzhe Jin (Cryogenic Science Center, High Energy Accelerator Research Organization (KEK), Ibaraki, Japan)
In series: Materials Science and Technologies
2013. 87 pp.
Softcover: 978-1-62808-725-3. $52.00.
e-book: 978-1-62808-728-4. $52.00.
The neutron beam has been applied extensively in scientific studies and in industrial fields. Studies on neutron diffraction have been promoted for many materials, especially composite materials and light-element materials. In this book, the authors present topical research in the study of the principles, instrumentation and application of neutron diffraction. Topics discussed include neutron diffraction measurements for materials science; neutron diffraction studies of the isotopic effect in arrangement of hydrogen atoms in solid solutions of Ti-N-H, Ti-N-D and Ti-N-H-D systems; a study on the residual strain induced by thermal hysteresis in a composite material; and neutron diffractometers for fatigue study of engineering metals.

New Research Trends of Fluorite-Based Oxide Materials: From Basic Chemistry and Materials Science to Engineering Applications
Akio Nakamura (Advanced Science Research Center, Japan Atomic Energy Agency, Ibaraki, Japan) and Junichiro Mizusaki (Inst. Multidisciplinary Research for Advanced Materials, Tohoku Univ., Sendai, Japan)
In series: Materials Science and Technologies
2014.
Fluorite-based oxide materials such as stabilized zirconias, doped cerias, and urania represent a group of the most important key engineering materials in our modern society, with their well-known various electrochemical, ceramic and nuclear etc. applications. This is primarily due to their multi-lateral excellent physical/chemical properties such as high chemical/structure stability, high oxide ion conductivity, superior mechanical strength, and unique nuclear properties, and so on. For example, urania UO2 and urania-plutonia mixed-oxide (U,Pu)O2 are almost exclusively used to represent nuclear fuels in commercial nuclear power plants throughout the world. Also in non-nuclear next-generation clean hydrogen energy technology such as solid oxide fuel cells (SOFCs), stabilized zirconias and doped cerias are the key solid electrolytes (oxide ion conductors) for their current and future more efficient versions. Stabilized zirconias, the most widely used fluorite materials, find other various practical and potential applications such as solid electrolytes for oxygen sensors/monitors/pumps, thermal barrier coatings, conventional and novel super-plastic and ultra-hard structural/refractory ceramics, high-pressure media, dielectric insulators/substrates, catalysts, synthetic teeth/jewels, etc. in non-nuclear areas and inert-matrix fuel and radioactive nuclear waste form in the nuclear area. Ceria-based systems have recently attracted increasingly more attention also as catalysts, pollution gas/liquid managements and chemical substance syntheses. Concurrently with such expanding technological applications, the rapid progress of various theoretical, computational and experimental research techniques in recent years has brought a great advance in our understanding of their key basic properties, such as bulk thermal, thermodynamic, mechanical, defects and transport properties, grain boundary structure, gas/solid interfacial electrochemical, catalytic and local-structural properties, and radiation tolerance, and so on. In this book, with the hope of covering as wide a range as possible of basics and applications of these fascinating oxide materials in a single book, the eleven experts were invited to contribute one chapter each and intend to convey a timely up-to-date comprehensive review of their latest research trends. We believe this book will not only further stimulate the interest of concerned chemists, physicists and materials scientists in these materials, but can also serve as a unique guide for young undergraduate and graduate students.

Novel Materials
Rafiqul Islam (Dalhousie University, Canada)
In series: Materials Science and Technologies
Hardcover: 978-1-62808-263-0. $150.00.
The most important first premise in science is that mass can be neither created nor destroyed. It is also becoming clear that natural laws dictate that mass be connected to energy. In effect, mass-balance provides the only governing equation that is both necessary and sufficient. Clearly, this compels a paradigm shift in scientific study. If a process is ‘engineered’ in violation of natural principles of material production, the balance will be irreversibly disturbed, and the outcome of such a violated process both unpredictable and harmful to future generations. The post-Renaissance mode of technology development is based on an analogous corollary principle of mass production. This is an approach characterized by an excessive focus on quantity to the detriment of establishing or upholding definitive criteria as to quality. In order to make mass-produced materials acceptable to the consumer, non-scientific means have been used to cover up true properties of both materials and energy. As a result, today technologies ranging from photovoltaic electricity to genetically-modified crop production to mass-produced pharmaceutical products are considered to be in harmony with nature. On the other hand, herbal medicine is dismissed as quackery and direct solar energy usage as pseudoscience. Nobel Laureates, such as the prize-winning chemist Robert Curl, have not shied from pronouncing this development mode a ‘technological disaster.’ Unfortunately, to date, even at this level, this broadly-correct diagnosis has yet to give rise to something that could be considered a cure. Others from this same plane of scientific accomplishment, e.g., Stephen Hawking, have echoed Dr. Curl’s general sentiment only to propose alternatives that are actually worse than current practices, e.g., colonization of the planet Mars by this same technologically-disastrous society. Is it not past time that scientists re-examine why Egyptian mummies used not a single drop of toxin whereas modern-day mummification proceeds by means of nothing but toxins? Could the dwellers of Petra Valley in Jordan carve an entire mountainside without using a single source of toxic energy, while we cannot sculpt any amount of Mount Rushmore without resorting to TNT? Could surgeons centuries ago perform complicated surgeries without resorting to X-rays, MRI, ultrasound, etc. — all of which ‘diagnostic aids’ have been demonstrated to be fraught with risks for the patient’s health? There is an emerging science of natural plastics: how can it be...
elaborated sufficiently to enable replacing ‘hypo-allergenic’ plastic tubes of present-day medical applications? We have to unravel the mysteries of the Taj Mahal that air-conditioned without Freon and powered fountains without electricity. How could Avicenna’s medical science not come with lengthy gruesome details about ‘contra-indications’ and other deadly long-term impacts? As this catalogue is filled out, the really nagging question emerges: can an accumulated body of chemical ‘knowledge’ that cannot distinguish between real and artificial, or of physical knowledge that cannot differentiate the impacts of sunlight and fluorescent light, be relied upon for sorting out the science of all these nature-emulating accomplishments?

Recent Advances in Abrasives Research
Ing. Dirk Bähre (Saarland University, Institute of Production Engineering, Saarbrücken, Germany)
In series: Materials Science and Technologies
Hardcover: 978-1-62808-566-2 $150.00.
Due to their strong hardness, abrasives are suitable to produce material removal in contact with surfaces and have a high resistance to wear. Fields of application are manufacturing technologies, especially the precise machining of parts with smooth surface, the removal of hard materials and the wear protection, e.g., in the case of brake discs. The investigation of abrasives is an interdisciplinary field in science where many research groups from all over the world work on. In this edited volume, different results from research in abrasives are compiled. The chapters contain several theoretical reflections and experimental analyses which contribute to understanding the mechanisms of material removal and wear protection with their influences and effects.

Recent Advances in Magnetism Research
Keith Pace
In series: Materials Science and Technologies
In series: Physics Research and Technology
Hardcover: 978-1-62808-450-4 $150.00.
In this book, the authors gather and present recent advances in magnetism research. Topics discussed include the field theory of magnetism; long-range order (LRO) and phase transition in the quantum anisotropic ferromagnetic Ising-Heisenberg linear chain; Green’s function method in the Bogolubov-Tyablikov version of the quantum theory of magnetism; diluted magnetic semiconductors; perpendicular magnetic anisotropy in half-metallic Heusler alloy films; a comparative study of the structural and physical properties of spinel nano-ferrites synthesized by a co-precipitation method; and the hysteretic behavior of composite magnetic alloys.

Research in Novel Materials
Rafiqul Islam (Dalhousie University, Canada)
In series: Materials Science and Technologies
Hardcover: 978-1-62808-265-4 $230.00.
The most important first premise in science is that mass can be neither created nor destroyed. It is also becoming clear that natural laws dictate that mass be connected to energy. In effect, mass-balance provides the only governing equation that is both necessary and sufficient. Clearly, this compels a paradigm shift in scientific study. If a process is ‘engineered’ in violation of natural principles of material production, the balance will be irreversibly disturbed, and the outcome of such a violated process both unpredictable and harmful to future generations. The post-Renaissance mode of technology development is based on an analogous corollary principle of mass production. This is an approach characterized by an excessive focus on quantity to the detriment of establishing or upholding definitive criteria as to quality. In order to make mass-produced materials acceptable to the consumer, non-scientific means have been used to cover up true properties of both materials and energy. As a result, today technologies ranging from photovoltaic electricity to genetically-modified crop production to mass-produced pharmaceutical products are considered to be in harmony with nature. On the other hand, herbal medicine is dismissed as quackery and direct solar energy usage as pseudo-science. Nobel Laureates, such as the prize-winning chemist Robert Curl, have not shielded from pronouncing this development mode a ‘technological disaster.’ Unfortunately, to date, even at this level, this broadly-correct diagnosis has yet to give rise to something that could be considered a cure. Others from this same plane of scientific accomplishment, e.g., Stephen Hawking, have echoed Dr. Curl’s general sentiment only to propose alternatives that are actually worse than current practices, e.g., colonization of the planet Mars by this same technologically-disastrous society. Is it not past time that scientists re-examine why Egyptian mummies used not a single drop of toxin whereas modern-day mumification proceeds by means of nothing but toxins? How could the dwellers of Petra Valley in Jordan carve an entire mountainside without using a single source of toxic energy, while we cannot sculpt any amount of Mount Rushmore without resorting to TNT? How could surgeons centuries ago perform complicated surgeries without resorting to X-rays, MRI, ultrasound, etc. — all of which ‘diagnostic aids’ have been demonstrated to be fraught with risks for the patient’s health? There is an emerging science of natural plastics: how can it be elaborated sufficiently to enable replacing ‘hypo-allergenic’ plastic tubes of present-day medical applications? We have to unravel the mysteries of the Taj Mahal that air-conditioned without Freon and powered fountains without electricity. How could Avicenna’s medical science not come with lengthy gruesome details about ‘contra-indications’ and other deadly long-term impacts? As this catalogue is filled out, the really nagging question emerges: can an accumulated body of chemical ‘knowledge’ that cannot distinguish between real and artificial, or of physical knowledge that cannot differentiate the impacts of sunlight and fluorescent light, be relied upon for sorting out the science of all these nature-emulating accomplishments?

Semiconductor Materials for Gas Sensors
Valentyn Smyntyna (Faculty of Physics, Odessa National I.I. Mechnikov University, Odessa, Ukraine)
In series: Materials Science and Technologies
Hardcover: 978-1-62808-458-0 $150.00.
e-book: 978-1-62808-461-0 $150.00.
This book examines the potential application of semiconductor materials for gas sensor production on the basis of their fundamental, theoretical, and experimental studies. Some of these materials or their composites were applied for semiconductor gas sensor production for the first time. Special attention is paid to the model materials A2B6, which are used in the form of films with biographic surface as well as with the surface doped by donor (In, Cd, Sn, Pt, Pd etc.) and acceptor (Se and others) particles. Results of application of metal-oxide materials as adsorptionally sensitive elements are also represented in this book. These elements were produced and tested in the form of simple oxides (as SnO2, In2O3, for example) as well as in the form of composite oxide metal complexes (SnWO4, ZnO:In2O3 etc.). The book examines in detail the influence of doping on different materials and their adsorption sensitivity, persistence, selectivity, dynamic and kinetic characteristics, and other parameters. Results of thorough studies of degradation of semiconductor sensor material characteristics, when in working gas atmospheres, are represented in a special section of the book. Adsorptionally sensitive parameters of amorphous silicon, micro-, macro- and nanoporous silicon are examined and results of Si structure testing as gas sensors are also discussed in this book.
Ultra-High Performance Concrete: Research and Developments

Gary M. Avalos

In series: Materials Science and Technologies
In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit
Hardcover: 978-1-62948-461-7. $135.00.

Advances in the science of concrete materials have led to the development of a new class of cementitious composites, namely ultra-high performance concrete (UHPC). The mechanical and durability properties of UHPC make it an ideal candidate for use in developing new solutions to pressing concerns about highway infrastructure deterioration, repair, and replacement. Since 2000, when UHPC became commercially available in the United States, a series of research projects has demonstrated the capabilities of the material. Three State transportation departments have deployed UHPC components within their infrastructure, and many more are actively considering the use of UHPC. This book documents the research, development, and deployment of UHPC components and includes information about its materials and production, mechanical properties, structural design and structural testing, durability and durability testing, and actual and potential applications. The book concludes with recommendations for the future direction for UHPC applications in the United States.

X-Ray Diffraction: Structure, Principles and Applications

Kaimin Shi (Department of Civil Engineering, The University of Hong Kong, Hong Kong)

In series: Materials Science and Technologies
Hardcover: 978-1-62808-591-4. $150.00.

An important milestone in the history of science, the diffraction of X-rays, was observed by Max von Laue in 1912. In the last 100 years, X-ray diffraction (XRD) studies have revealed highly valuable information about many ordered atomic structures seen in a variety of common materials. The understanding of material structures opened the door to the reliable application of these materials and allowed scientific discussions about material properties and structural features to become possible. Besides playing this crucial role in history, XRD has now also successfully transformed itself into a method in the forefront of extending much of our knowledge boundaries. Written by more than 30 X-ray diffraction experts from 9 countries/regions, this book consists of 11 chapters examining the development of the XRD technique and demonstrating various new opportunities for its application. Each chapter discusses timely and important subjects surrounding the XRD technique, including the past and future of the single-crystal XRD technique and new explorations with coordination polymers; the very successful implementation of Rietveld refinement analysis for alloys, intermetallics, cements, and ceramics; the application of XRD in nanoparticles structure study; the methodological developments in quantifying the state of residual stress in materials; and the state-of-the-art progress in combining XRD principles with electron crystallography for structure determination.
Frontiers of Combinatorics and Number Theory. Volume 4
Zhi-Wei Sun
In series: Frontiers of Combinatorics and Number Theory
2013. 219 pp.
Hardcover: 978-1-62808-957-8. $150.00.
This book contains papers on topics in combinatorics (including graph theory) or number theory. The subject areas within correspond to the MSC (Mathematics Subject Classification) codes 05, 11, 20D60, and 52. Some topics included in this compilation are pseudorandom binary functions on rooted plane trees; class number one criteria for real quadratic fields with discriminant k2p2±4p; some product-to-sum identities; a zeta function for juggling sequences; divisibility properties of hypergeometric polynomials; the distance between perfect numbers; a new proof of a theorem of Hamidoune avoiding; conjectures on the monotonicity of some arithmetical sequences; complexity of trapezoidal graphs with different triangulations; applications of shuffle products of multiple zeta values in combinatorics; the invariant area formulas and lattice point bounds for the intersection of hyperbolic and elliptic regions; and product-cordial index set for Cartesian products of a graph with a path.

Graph Theory: New Research
Alessandra Cavalcante
In series: Mathematics Research Developments
Hardcover: 978-1-62808-543-3. $150.00.
e-book: 978-1-62808-544-0. $150.00.
Graphs can be used to model many types of relations and process dynamics in physical, biological, social and information systems. Many practical problems can be represented by graphs. In this book, the authors present new research on graph theory including the applications of graph theory in architectural analysis; Messian intersections and comparing and evaluating graph theory approaches to architectural spatial analysis; the algebraic structure of graphs; the combination of graph theory and unsupervised learning applied to social data mining; organizing and structuring the contents of mathematical subjects using graph theory; and a modularity-based filtering approach for network immunization.

Introduction to Geometry and Relativity
David C. Mello (Department of Mathematics, John Hazen White School of Arts & Sciences, Johnson & Wales University, Providence, Rhode Island, USA)
In series: Mathematics Research Developments
Hardcover: 978-1-62618-542-5. $175.00.
This book provides a lucid introduction to both modern differential geometry and relativity for advanced undergraduates and first-year graduate students of applied mathematics and physical sciences. This book meets an overwhelming need for a book on modern differential geometry and relativity that is student-friendly, and which is also suitable for self-study. The book presumes a minimal level of mathematical maturity so that any student who has completed the standard Calculus sequence should be able to read and understand the book. The key features of the book are: • Detailed solutions are provided to the Exercises in each chapter. • Many of the ‘missing steps’ that are often omitted from standard mathematical derivations have been provided to make the book easier to read and understand. • A
detailed introduction to Electrodynamics is provided so that the book is accessible to students who have not had a formal course in this area. In its treatment of modern differential geometry, the book employs both a modern, coordinate-free approach, and the standard coordinate-based approach. This makes the book attractive to a large audience of readers. Also, the book is particularly attractive to professional non-specialists who would like an easy to read introduction to the subject.

Justification of the Courant-Friedrichs Conjecture for the Problem about Flow around Wedge
Alexander M. Blokhin, D.L. Tkachev and Evgeniya Mishchenko (Sobolev Institute of Mathematics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk, Russia)
In series: Mathematics Research Developments
In series: Physics Research and Technology
2013. 156 pp.
Hardcover: 978-1-62417-377-6. $110.00.
e-book: 978-1-62618-170-0. $110.00.

The classical problem about a steady-state supersonic flow of an inviscid non-heat-conductive gas around an infinite plane wedge under the assumption that the angle at the vertex of the wedge is less than some limit value is considered. The gas is supposed to be in the state of thermodynamical equilibrium and admits the existence of a state equation. As is well-known, the problem has two discontinuous solutions, one of which is associated with a strong shock wave (the gas velocity behind the shock wave is less than the sound speed) and the second one corresponds to the weak shock wave (the gas velocity behind the shock wave is, in general, larger than the sound speed) (Courant R., Friedrichs K.O. Supersonic flow and shock waves. N. Y.: Interscience Publ. Inc., 1948). One of the possible explanations of this phenomenon was given by Courant and Friedrichs. They conjectured that the solution corresponding to the strong shock wave is unstable in the sense of Lyapunov, whereas the solution corresponding to the weak shock wave is stable. This conjecture has been confirmed in a number of studies in which either particular cases were considered or the proposed argumentation was given at the qualitative (mostly, physical) level of rigor. In this monograph, the Courant-Friedrichs conjecture is strictly mathematically justified at the linear level. The mechanism of generating the instability for the case of a strong shock is explained. The smoothness of the solution essentially depends on the peculiarity of the boundary at the vertex of the wedge. The situation with a weak shock drastically differs from the previous one. It is amazing but for the compactly supported initial data the solution to the linear problem reaches the steady state regime infinite time.

Linear Programming: Theory, Algorithms and Applications
Yaromir Truma
In series: Mathematics Research Developments
2014.
Softcover: 978-1-63117-473-5. $72.00.

Linear programming (LP), as a specific case of mathematical programming, has been widely encountered in a broad class of scientific disciplines and engineering applications. In view of its fundamental role, the solution of LP has been investigated extensively for the past decades. Due to the parallel-distributed processing nature and circuit-implementation convenience, the neurodynamic solvers based on recurrent neural network (RNN) have been regarded as powerful alternatives to online computation. This book discusses how linear programming is used to plan and schedule the workforce in an emergency room; the neurodynamic solvers, robotic applications, and solution nonuniqueness of linear programming; the mathematical equivalence of simple recourse and chance constraints in linear stochastic programming; and provides a decomposable linear programming model for energy supply chains.

Lyapunov Stability of Non-Autonomous Dynamical Systems
David Nicolae Cheban (Department of Fundamental Mathematics, State University of Moldova, Republic of Moldova)
In series: Mathematics Research Developments
Hardcover: 978-1-62618-926-3. $175.00.

The foundation of the modern theory of stability was created in the works of A. Poincare and A.M. Lyapunov. The theory of the stability of motion has gained increasing significance in the last decade as is apparent from the large number of publications on the subject. A considerable part of these works are concerned with practical problems, especially problems from the area of controls and servo-mechanisms, and concrete problems from engineering, which first gave the decisive impetus for the expansion and modern development of stability theory. This book contains a systematic exposition of the elements of the asymptotic stability theory of general non-autonomous dynamical systems in metric spaces with an emphasis on the application for different classes of non-autonomous evolution equations (Ordinary Differential Equations (ODEs), Difference Equations (DEs), Functional-Differential Equations (FDEs), Semi-Linear Parabolic Equations etc.). The basic results of this book are contained in the courses of lectures which the author has given during many years for the students of the State University of Moldova. This book is intended for mathematicians (scientists and university professors) who are working in the field of stability theory of differential/difference equations, dynamical systems and control theory. It would also be of use for the graduate and post graduate student who is interested in the theory of dynamical systems and its applications. The reader needs no deep knowledge of special branches of mathematics, although it should be easier for readers who know the fundamentals concepts of the theory of metric spaces, qualitative theory of differential/difference equations and dynamical systems.

Mathematical Models of Non-linear Phenomena, Processes and Systems: From Molecular Scale to Planetary Atmosphere
Alexey B. Nadykto (State University of New York at Albany, Atmospheric Sciences Research Center, Albany, NY, USA), Ludmila Uvarova (Moscow State University of Technology Stankin, Vadkovski, Moscow), Anatoli V. Latyshev (Moscow University, ult. Radi)

In series: Mathematics Research Developments
2013. 495 pp.
Hardcover: 978-1-60876-994-0. $125.00.

The book consists of twenty seven chapters, which can be divided into three large categories: (i) articles with the focus on the mathematical treatment of non-linear problems, including the methodologies, algorithms and properties of analytical and numerical solutions to particular non-linear problems; (ii) theoretical and computational studies dedicated to the physics and chemistry of non-linear micro-and nano-scale systems, including molecular clusters, nano-particles and nano-composites; (iii) papers focused on non-linear processes in medico-biological systems, including mathematical models of ferments, amino acids, blood fluids and polynucleic chains.
Particle of Life: Mathematical Abstraction or Reality?
Mikhail Zak (Jet Propulsion Laboratory, California Institute of Technology, Senior Research Scientist, (Emeritus), Cypress, CA, USA)
In series: Physics Research and Technology
Hardcover: 978-1-62948-582-9. $85.00.
e-book: 978-1-62948-585-0. $85.00.
The book presents a mathematical answer to the ancient philosophical question “How mind is related to matter”. It proves that in the mathematical world, the bridge from matter to mind requires extension and modification of quantum physics. The proposed dynamical model that captures behavior of living things is based upon the extension of the First Principles of classical physics to include the phenomenological behavior of living systems, i.e., to develop a new mathematical formalism within the framework of classical dynamics that would allow one to capture the specific properties of natural or artificial living systems. The proposed mathematical formalism is quantum-inspired. It is based upon coupling the classical dynamical system representing the motor dynamics with the corresponding Liouville equation describing the evolution of initial uncertainties in terms of the probability density and representing the mental dynamics. Along with the main objective, the book addresses fundamental departures from classical views on some unsolved problems in quantum mechanics. By moving from the Schrödinger to the Madelung equation, it demonstrates that randomness in quantum mechanics has the same mathematical origin as that in turbulence and chaos. It illuminates the origin of entanglement and interference of probabilities. These results are reinforced by similar properties of L-particle that are based upon a modification of the Madelung equation. Therefore, the model of L-particle fits well into the mathematical formalism of modern physics, and that rouses a belief that L-particle is not only a mathematical abstraction, but a reality as well.

Selected Topics of Invariant Measures in Polish Groups
Gogi Pantsulaia (Department of Mathematics, Georgian Technical University, Tbilisi, Georgia)
In series: Mathematics Research Developments
Hardcover: 978-1-62948-831-8. $150.00.
This book explores a number of new applications of invariant quasi-finite diffused Borel measures in Polish groups for a solution of various problems stated by famous mathematicians (for example, Carmichael, Erdos, Fremlin, Darji and so on). By using natural Borel embeddings of an infinite-dimensional function space into the standard topological vector space of all real-valued sequences, (endowed with the Tychonoff topology) a new approach for the construction of different translation-invariant quasi-finite diffused Borel measures with suitable properties and for their applications in a solution of various partial differential equations in an entire vector space is proposed.

Self-organization: Theories and Methods
WenJun Zhang (Sun Yat-sen University, Guangzhou, China)
In series: Mathematics Research Developments
In series: Computational Mathematics and Analysis
Hardcover: 978-1-62618-865-5. $150.00.
e-book: 978-1-62618-917-1. $150.00.
Self-organization is a universal mechanism in nature. In the past thirty years, numerous phenomena, theories and methods on self-organization have been founded around the world. This book presents recent achievements in theories and methods of self-organization and includes such theories and methods of self-organization as ant algorithms, particle swarm algorithms, artificial neural networks, motion and migration algorithms, self-adaptive Kalman Filters, finite state approximations, etc. Chapters are contributed by more than 20 scientists from China, Italy, Spain, Japan, Russia, Serbia, India, and Turkey, in the areas of mathematics, computational science, artificial intelligence, aeronautics and astronautics, automation and control, and life sciences. It will provide researchers with various aspects of the latest advances in self-organization. It is a valuable reference for scientists, university teachers and graduate students in mathematics, natural science, engineering science, and social science.

Sequencing and Scheduling with Inaccurate Data
Yuri N. Sotskov and Frank Werner (United Institute of Informatics Problems of the National Academy of Sciences of Belarus, Minsk, Belarus)
In series: Applied Statistical Science
In many real-world applications, the problems with the data used for scheduling such as processing times, setup times, release dates or due dates is not exactly known before applying a specific solution algorithm which restricts practical aspects of scheduling theory. During the last decades, several approaches have been developed for sequencing and scheduling with inaccurate data, depending on whether the data is given as random numbers, fuzzy numbers or whether it is uncertain, i.e., it can take values from a given interval. This book considers the four major approaches for dealing with such problems: a stochastic approach, a fuzzy approach, a robust approach and a stability approach. Each of the four parts is devoted to one of these approaches. First, it contains a survey chapter on this subject, as well as between further chapters, presenting some recent research results in the particular area. The book provides the reader with a comprehensive and up-to-date introduction into scheduling with inaccurate data. The four survey chapters deal with scheduling with stochastic approaches, fuzzy job-shop scheduling, minmax regret scheduling problems and a stability approach to sequencing and scheduling under uncertainty. This book will be useful for applied mathematicians, students and PhD students dealing with scheduling theory, optimization and calendar planning.

The Future of Post-Human Probability: Towards a New Theory of Objectivity and Subjectivity
Peter Baofu (Full Professor)
In series: Applied Statistical Science
Hardcover: 978-1-62948-671-0. $275.00.
Is the degree of probability that an individual holds when betting on a particular outcome really so subjective that, as Frank Ramsey once argued, “objective logical relations” do not exist and that “probability is the logic of partial belief”? (WK 2012a) This subjective interpretation of probability can be contrasted with an objective view by John Keynes, who argued instead that “logical probabilities are conceived...to be objective, logical relations between propositions (or sentences), and hence not to depend in any way upon belief.” (WK 2012) Contrary to these opposing interpretations (and other ones as will be discussed in the book), probability (in relation to both objectivity and subjectivity) are neither possible (nor impossible) nor desirable (or undesirable) to the extent that the respective ideologues (on different sides) would like us to believe. Surely, this questioning of the opposing interpretations on probability does not entail that probability is useless, or that those fields related to probability (like “statistics, finance, gambling, science, artificial intelligence/machine learning and philosophy”) are not worth studying. Needless to say,
neither of these extreme views is reasonable. Instead, this book offers an alternative way to understand the future of probability, especially in the dialectic context of objectivity and subjectivity—while learning from different approaches in the literature but without favoring any one of them (nor integrating them, since they are not necessarily compatible with each other). More specifically, this book offers a new theory (that is, the interpretivist theory of probability) in order to go beyond the existing approaches in a novel way. To understand this, the book is organized in four chapters. This seminal project will fundamentally change the way that we think about probability in relation to objectivity and subjectivity from the combined perspectives of the mind, nature, society, and culture, with enormous implications for the human future and what I originally called its “post-human” fate.

MECHANICAL ENGINEERING

Distributed Propulsion Technology
Amir S. Gohardani (L·Garde Inc., Orange County, California, USA)

In series: Mechanical Engineering Theory and Applications
Hardcover: 978-1-62948-588-1, $175.00.

Distributed propulsion technology is one of the revolutionary candidates for future aircraft propulsion. In this book, which serves as the very first reference book on distributed propulsion technology, the potential role of distributed propulsion technology in future aviation is investigated. Following a historical journey that revisits distributed propulsion technology in unmanned air vehicles, commercial aircrafts, and military aircrafts, features of this specific technology are highlighted in synergy with an electric aircraft concept and a first-of-its-kind comparison between commercial and military aircrafts employing distributed propulsion arrangements. In light of propulsion–airframe integration and complementary technologies, such as boundary layer ingestion, thrust vectoring and circulation control, transpired opportunities and challenges are addressed in addition to a number of identified research directions proposed for future aircrafts. Moreover, a diverse set of distributed propulsion arrangements are considered. These include: small engines, gas-driven multi-fan architectures, turboelectric systems featuring superconductive and non-superconducting electrical machine technology, and electromagnetic fans. This book features contributions by the National Aeronautics and Space Administration (NASA) and the United States Air Force (USAF), and includes the first proposed official definition for distributed propulsion technology in subsonic fixed wing aircrafts.

Structural Health Monitoring in Australia
Tommy Chan and David P. Thambiratnam
(Queensland University of Technology, Brisbane, Australia)

In series: Engineering Tools, Techniques and Tables
Softcover: 978-1-63117-022-5, $89.00.

Structural Health Monitoring (SHM) is defined as the use of on-structure sensing system to monitor the performance of the structure and evaluate its health state. Recent bridge failures, such as the collapses of the 1-35W Highway Bridge in USA, the collapse of the Can Tho Bridge in Vietnam and the Xijiang River Bridge in the Mainland China, all of which happened in the year 2007, have alerted the importance of structural health monitoring. This book presents a background of SHM technologies together with its latest development and successful applications. It is a book launched to celebrate the establishment of the Australian Network of Structural Health Monitoring (ANSHM). The network comprising leading SHM experts in Australia promotes and advances SHM research, application, education and development in Australia.

MEDIA AND COMMUNICATIONS

Electronic Communications Privacy Act: Overview and Issues for Consideration
Marissa G. Haul
In series: Media and Communications - Technologies, Policies and Challenges
Hardcover: 978-1-62948-826-4, $110.00.

The statutory framework for the communications sector largely was enacted prior to the commercial development and deployment of digital technology. Internet Protocol (IP), broadband networks, and online voice, data, and video services. These new technologies have driven changes in market structure throughout the communications sector. In a technologically dynamic sector, the statutory framework cannot be modified every time there is a significant technological change. The challenge therefore is to create statutory language that is flexible enough to continue to foster articulated public policy objectives in the face of technological change, without artificially favoring either legacy technology or new technology. This book focuses on updating the statutory framework for communications for the digital age. The authors also provide statements and testimonies from hearings on lawful access to stored content, and geolocation privacy surveillance.

Scientific Writing for Impact Factor Journals
Eric Lichtfouse (INRA, Agroecology Unit, University of Burgundy, Dijon, France)

In series: Media and Communications - Technologies, Policies and Challenges
Softcover: 978-1-62618-943-0, $52.00.

Publish or Perish. This old adage illustrates the importance of scientific communication; essential to research, it also represents a strategic sector for each country’s competitiveness. An often-neglected topic, scientific communication is of vital importance, with new information technologies accelerating and profoundly changing how knowledge is disseminated. The necessity of optimally disseminating experts’ findings has also become crucial to researchers, institutes and universities alike, which has prompted the recent advent of Impact Factors for the evaluation and financing of research, the goal being for scientific knowledge to be equally distributed to a very broad audience, especially to the media, entrepreneurs and sociopolitical players. This handbook presents the “golden rules” for publishing scientific articles. In order to do away with major recurring errors, the author explains how to easily structure an article and offers support for the typical mistakes made by native French speakers publishing in English, tips on how to make the style more academic of more general to fit your intended readership and, in the book’s closing section, suggests new publishing techniques of the Internet age such as the micro-article, which allows researchers to focus their findings into a single innovative point. The major principles presented can be applied to a broad range of documents such as theses, industry reports, publicity texts, letters of intent, CVs/resumes, blogs and press releases, as all of these documents involve presenting information on advances, discoveries, innovations, or changes to our previous knowledge.
Telecommunications: Applications, Modern Technologies and Economic Impact
Joseph P. Barringer
In series: Electronics and Telecommunications Research

The market for telecommunications networks and services is constantly changing. So is the regulatory approach. Technological progress creates new challenges for the creation of a level playing field between traditional and new operators and service providers. In this book, the authors present current research in the study of telecommunications. Topics discussed include electronic communications services in the world of apps; computer algebra and symbolic processing in modern telecommunication applications; and explicit form of three novel classes of multiplier-less linear phase selective 2D FIR filter function.

Transformations in Telecommunications and Media: Elements and Issues for Consideration
Irwin Cavaos
In series: Media and Communications - Technologies, Policies and Challenges

The passage of the 1996 Telecommunications Act resulted in a major revision of the Communications Act of 1934 to address the emergence of competition in what were previously considered to be monopolistic markets. Since its passage, however, the advancement of broadband technology to supply data, voice, and video; the growing convergence of the telecommunications and media sectors; and the growth in demand for usable radio frequency spectrum has led to a consensus that the laws that govern these sectors have become inadequate to address this rapidly changing environment and have, according to a growing number of policymakers, made it necessary to consider revising the current regulatory framework. This book provides an overview of selected topics that, while far from a definitive list, provide a broad overview of issues that are central to the telecommunications/media convergence debate. The issues covered in this book include broadband deployment, broadband regulation and access, broadcast media ownership rules, funding for the Corporation for Public Broadcasting, emergency communications, legal issues regarding facilities siting, Federal Communications Commission oversight and reform, Internet governance and the domain name system, reauthorization of statutory copyright and communications provisions in the Satellite Television Extension and Localism Act, spectrum policy and wireless broadband deployment, and Universal Service Fund reform.

MEDICINE

Regulators of Ovarian Functions
Alexander V. Sirotkin (Research Inst. of Animal Protection, Nitra, Slovakia)
In series: Transportation Issues, Policies and R&D

This book represents an attempt to review the most recent knowledge concerning basic processes occurring in the most important female reproductive organ – the ovaries and their regulators. The most important processes (ovarian cyclic changes and oogenesis), as well as their extracellular (hormones and growth factors) and intracellular (protein kinases, transcription factors, small RNAs) regulators are described. Data concerning processes or substances well described in previous reviews are summarized here in a short form with references to corresponding reviews.

MILITARY

Cyber Resiliency, Security, and Cloud Computing Suitability in Military Information Technology
Jesse A. Flanagan
In series: Defense, Security and Strategies

The United States cannot be confident that our critical Information Technology (IT) systems will work under attack from a sophisticated and well-resourced opponent utilizing cyber capabilities in combination with all of their military and intelligence capabilities. While the Department of Defense takes great care to secure the use and operation of the “hardware” of its weapon systems, these security practices have not kept up with the cyber adversary tactics and capabilities. Further, the same level of resource and attention is not spent on the complex network of information technology (IT) systems that are used to support and operate those weapons or critical cyber capabilities embedded within them. This book provides recommendations for a workable framework; details about how the Department could prepare to operate in a cyber-contested environment; and the task force describes the specific aspects of the cloud computing configuration that are relevant to avoid the simple choice of public or private clouds.

Integration of Civil Unmanned Aircraft Systems into the National Airspace System: Roadmap, Plans, and Privacy
Jessica Rivera
In series: U.S. Transit, Transportation and Infrastructure: Considerations and Development

Since the early 1990s, unmanned aircraft systems (UAS) have operated on a limited basis in the National Airspace System (NAS). Until recently, UAS mainly supported public operations, such as military and border security operations. The list of potential uses is now rapidly expanding to encompass a broad range of other activities, including aerial photography, surveying land and crops, communications and broadcast, monitoring forest fires and environmental conditions, and protecting critical infrastructures. UAS provide new ways for commercial enterprises (civil operations) and public operators to enhance some of our nation’s aviation operations through increased operational efficiency and decreased costs, while maintaining the safety of the NAS. This book focuses on the integration of civil unmanned aircraft systems in the national airspace system; provides an unmanned aircraft systems comprehensive plan; and discusses the final privacy requirements for the unmanned aircraft system test site program.
NANOTECHNOLOGY

Advanced Nanocomposites: Types, Properties and Applications
Abel Maharramov, Mahammadali Ramazanov and Mohammad Reza Saboktakin (Baku State University, Baku, Azerbaijan) Olgun Guven (Chemistry Department, Hacettepe University, Ankara, Turkey)
In series: Nanotechnology Science and Technology
Hardcover: 978-1-62808-308-8. $175.00.
The field of nanotechnology is one of the most popular areas for current research and development in basically all technical disciplines. This obviously includes polymer science and technology and even in this field the investigations cover a broad range of topics. This would include microelectronics (which could now be referred to as nanoelectronics) as the critical dimension scale for modern devices now below 100 nm. Other areas include polymer-based biomaterials, nanoparticle drug delivery, miniemulsion particles, fuel cell electrode polymer bound catalysts, layer-by-layer self-assembled polymer films, electrospun nanofibers, imprint lithography, polymer blends and nanocomposites. Even in the field of nanocomposites, many diverse topics exist including composite reinforcement, barrier properties, flame resistance, electro-optical properties, cosmetic applications, and bactericidal properties. Nanotechnology offers unique approaches to probe and control a variety of biological and medical processes that occur at nanometer length scales, and is expected to have a revolutionary impact on biology and medicine. Among the approaches for exploiting nanotechnology in medicine, nanoparticles offer some unique advantages as sensing, image enhancement, and delivery agents. Several varieties of nanoparticles with biomedical relevance are available including, polymeric nanoparticles, metal nanoparticles, liposomes, micelles, quantum dots, dendrimers, and nanoassemblies. To further the application of nanoparticles in disease diagnosis and therapy, it is important that the systems are biocompatible and capable of being functionalized for recognition of specific target sites in the body after systemic administration. We have discussed the novel nanocomposites and nanoparticles from various applications and drug delivery systems for cancer therapy.

Advances in Nanotechnology. Volume 11
Zacharie Bartul and Jérôme Treon
In series: Advances in Materials Science Research
Hardcover: 978-1-62948-732-8. $120.00.
e-book: 978-1-62948-733-5. $120.00.
Nanotechnology is the study of the controlling of matter on an atomic and molecular scale and is also very diverse, ranging from extensions of conventional device physics to completely new approaches based upon molecular self-assembly. This book gathers and presents data on nanotechnology, including basic introduction on nanoimprint lithography, the technology and materials, and how to use them for achieving an optimum result for research or industrial applications; strategies to obtain well-dispersed, with improved mechanical properties nanocomposites; information about the growing field of nanomaterials formed by green nanotechnology for bioapplication in medical science to minimize the potential human health and environmental risk; the polymer filling process in nanoimprint lithography performed by molecular dynamics simulation; the optical properties and sizes of gold nanoparticles and its practical applications; and the study of the rheological properties of ferrofluid particles and how it compares with some existing models.

Atomic Force Microscopy (AFM): Principles, Modes of Operation and Limitations
Hongshun Yang (Food Science and Technology Programme, Department of Chemistry, National University of Singapore, Singapore)
In series: Chemistry Research and Applications
Hardcover: 978-1-63117-172-7. $150.00.
With the wide application of nanotechnology in scientific research as well as in industrial product development, it is urgent to develop appropriate tools for investigating and manipulating molecules, especially macromolecules at the nanoscale level. Different microscopes are typical equipment. Due to the high resolution, being maximally close to samples’ original status and the low requirement of sample preparation, atomic force microscopy (AFM) has been applied as a nanotechnology tool since it was invented in 1986. As this equipment utilizes the force between the sample and scanning tip rather than the light signal as used by many other microscopes, samples with different optical properties can be investigated with AFM without limitations. AFM has many modes including contact mode and non-contact mode, which can be applied for achieving different purposes depending on the samples’ properties and final purposes. Recent force spectroscopy can measure the interaction forces of the tip-sample, which is a function of distance between the tip and the sample, thus called a force-distance curve. Force spectroscopy can also be conducted with static or dynamic modes, which has been widely applied in many fields, especially in biophysics for measuring mechanical properties of living organisms or cells. This book focuses on the research on AFM principles, modes of operation and limitation and they are discussed with detailed examples in various fields, ranging from inorganic materials in physics to organic materials in food science, biomedical science, chemistry and others.

Handbook of Functional Nanomaterials. Volume 1 - Synthesis and Modification
Mahmood Alioshazraei (Tarbiat Modares University, Faculty of Engineering, Department of Materials Engineering, Tehrān, Iran)
In series: Nanotechnology Science and Technology
Hardcover: 978-1-62948-364-1. $230.00.
This is the first volume of the four volume set of Handbook of Functional Nanomaterials. Functional nanomaterials appear in our daily lives. These materials mainly include nanocomposites, nanopowders, nanoparticles and nanocoatings. Nanotechnology enables the creation of structures that do not exist in nature, those which cannot be produced by conventional chemistry. Some advantages of this technology are the synthesis of stronger, more adjustable materials as well as lower costs. Nanotechnology is scientific and research development at the atomic, molecular, or macromolecular levels in a dimension range of 1 to 100 nm; the fabrication and application of the structures, equipment, and systems which involve unique characteristics and new applications because of their small or medium dimensions; and the potential for (materials and processes) and control and management of atomic scales. Therefore, nanotechnology involves industrial research and development at atomic, molecular, and macromolecular levels. This research aims to create and exploit the structures and systems which involve unique applications due to their small dimensions. The main difference between nanotechnology and other technologies is found within the dimensions and properties of the materials and structures applied to this technology. As a matter of fact, the main difference between these two types of technologies is the presence of base elements, which are indeed the same nanoscale elements with different properties in their
Handbook of Functional Nanomaterials. Volume 2 - Characterization and Reliability

Mahmood Aliofkhazraei (Tarbiat Modares University, Faculty of Engineering, Department of Materials Engineering, Tehrān, Iran)

In series: Nanotechnology Science and Technology


This is the second volume of the four volume set. Functional nanomaterials appear in our daily lives. These materials mainly include nanocomposites, nanopowders, nanoparticles and nanocoatings. Nanotechnology enables the creation of structures which do not exist in nature, those which cannot be produced by conventional chemistry. Some advantages of this technology are the synthesis of stronger, more adjustable materials as well as lower costs. Nano technology is scientific and research development at the atomic, molecular, or macromolecular levels in a dimension range of 1 to 100 nm; the fabrication and application of the structures, equipment, and systems which involve unique characteristics and new applications because of their small or medium dimensions. The main difference between nanotechnology and other technologies is found within the dimensions and properties of the materials and structures applied to this technology. As a matter of fact, the main difference between these two types of technologies is the presence of base elements, which are indeed the same nanoscale elements with different properties in their nanoscale and larger states. Due to the developed properties of the very fine powders including surface chemistry, compressive properties, optical characteristics, and synthetic reactions as well as an increasing demand for fine powders in industries, a very fine fragmentation is applied in many materials such as: minerals, ceramics, dyes, chemicals, microorganisms, pharmaceuticals and paper manufacturing. This volume mainly discusses the application and development of functional nanomaterials. This is the third volume of the “Handbook of Functional Nanomaterials” (4 volume set). Functional nanomaterials appear in our daily lives. These materials mainly include nanocomposites, nanopowders, nanoparticles and nanocoatings. Nanotechnology enables the creation of structures that do not exist in nature, those which cannot be produced by conventional chemistry. Some advantages of this technology are the synthesis of stronger, more adjustable materials as well as lower costs. Nano technology is scientific and research development at the atomic, molecular, or macromolecular levels in a dimension range of 1 to 100 nm; the fabrication and application of the structures, equipment, and systems which involve unique characteristics and new applications because of their small or medium dimensions; and the potential for the control and management at atomic scales. Therefore, nanotechnology involves industrial research and development at atomic, molecular, and macromolecular levels. This research aims to create and exploit the structures and systems which involve unique applications due to their small dimensions. The main difference between nanotechnology and other technologies is found within the dimensions and properties of the materials and structures applied to this technology. As a matter of fact, the main difference between these two types of technologies is the presence of base elements, which are indeed the same nanoscale elements with different properties in their nanoscale and larger states. Due to the developed properties of the very fine powders including surface chemistry, compressive properties, optical characteristics, and synthetic reactions as well as an increasing demand for fine powders in industries, a very fine fragmentation is applied in many materials such as: minerals, ceramics, dyes, chemicals, microorganisms, pharmaceuticals and paper manufacturing. This volume mainly discusses the application and development of functional nanomaterials. This is the fourth volume of the handbook of functional nanomaterials (4 volume set). Functional nanomaterials appear in our daily lives. These materials mainly include nanocomposites, nanopowders, nanoparticles and nanocoatings. Nanotechnology enables the creation of structures that do not exist in nature, those which cannot be produced by conventional chemistry. Some advantages of this technology are the synthesis of stronger, more adjustable materials, as well as lower costs. Nano technology is (1) scientific and research development at the atomic, molecular, or macromolecular levels in a dimension range of 1 to 100 nm, (2) the fabrication and application of the structures, equipment, and systems which involve unique characteristics and new applications because of their small or medium dimensions, (3) and the potential for (materials and processes) the control and management of atomic scales. This research aims to create and exploit the structures and systems which involve unique applications due to their small dimensions. The main difference between nanotechnology and other technologies is found within the dimensions and properties of the materials and structures applied to this technology. As a matter of fact, the main difference between these two types of technologies is the presence of base elements, which are indeed the same nanoscale elements with different properties in their nanoscale and larger states. Due to the developed properties of the very
fine powders including surface chemistry, compressive properties, optical characteristics, and synthetic reactions, as well as an increasing demand for fine powders in industries, a very fine fragmentation is applied in many materials such as: minerals, ceramics, dyes, chemicals, microorganisms, pharmaceuticals and paper manufacturing. This volume mainly discusses the properties and commercialization of functional nanomaterials. Some of the functional nanomaterials that were discussed in this volume are graphene-based nanocomposites, nanoporous materials, ionic liquids-carbon nanotube nanocomposites, carbon nanotube/nanofiber cement-based composites, titania nanostructured materials, nanostructured multilayer films, ZnO nanostructures, biomolecular nanoconjugates, functionalized magnetic nanoparticles, nano latex materials, semiconductor quantum dots, mesoporous silica-based sensors and keratin nanomaterials. There are 21 chapters in this volume. Each one includes examples of these interesting materials, supported with appropriate figures for better clarification.

**Magnetic Nanoparticles: Synthesis, Physicochemical Properties and Role in Biomedicine**

*Nora P. Sabbas*

In series: *Nanotechnology Science and Technology* 2014. 257 pp.

Hardcover: 978-1-63117-434-6, $150.00.


Magnetic nanoparticles (MNPs) are one of the materials of great interest for presenting a unique combination of relevant properties such as high surface area, magnetic behavior and low toxicity, which can find potential use in different processes and applications in areas such as catalysis, data storage, water treatment, drug delivery system, DNA separation, tissue engineering, sensors, hyperthermia, ferrofluids, and as contrast agents in nuclear magnetic resonance (NMR) imaging. This book provides further information on how magnetic nanoparticles are synthesized, their physicochemical properties and the roles MNPs play in biomedicine.

**Nanocomposites: Synthesis, Characterization and Applications**

*Xiaoying Wang (State Key Laboratory of Pulp and Paper Engineering School of Light Industry and Food, South China University of Technology, Guangzhou, China)*

In series: *Nanotechnology Science and Technology* 2013. 430 pp.

Hardcover: 978-1-62948-226-2, $195.00.


The intention of this book is to provide an updated view of the synthesis, characterization and applications of different kinds of nanocomposites. It includes 9 review chapters and 8 research chapters. The review articles introduce various nanocomposites like polymer-based nanocomposite (polymer-based carbonaceous nanocomposites, chitosan-quantum dots nanocomposites and chitosan-based inorganic nanocomposites), UV-cured nanocomposite coatings, carbon dots nanocomposites, layered double hydroxides/organ nano composites, catalytic membranes loaded with nanocomposite materials and block polymer nanocomposites. The research articles include studies on the influence of silica nanoparticles on functional properties of polyurethane nanocomposites, the annealing effects in nanostructured carbon-copper films, fabrication, characterization and modeling of functionally graded synthetic graphite/polymer nanocomposites, the mass transfer process in metal-ion exchanger nanocomposites, mechanosynthesis of Fe-MeC (Me=V, Ti, Nb) nanocomposites, preparation and adsorption for Congo red of rectorite/chitosan nanocomposite, synthesis, assembly, and performance of metal-oxide based nanocomposites using polyol technique and electrospinning and also synthesis and applications of developed metal matrix/nanodiamond composites. According to this book, you can get a comprehensive understanding about the development of nanocomposites in recent years. Moreover, you can figure out detailed synthesis methods as well as advanced characterization methods for nanocomposites. It will be an inspiration for applications of nanocomposites in various fields. By covering both the fundamentals and synthetic applications, it is therefore suitable for both new and experienced researchers, chemists, biochemists, natural product chemists and graduate students.

**Nanotechnology in Drug Delivery: Strategies, Technologies and Applications**

*A.K. Haghi and E.A. Castro (University of Guilan, Rasht, Iran)*

In series: *Nanotechnology Science and Technology* 2013. 204 pp.

Hardcover: 978-1-62948-425-9, $150.00.


The aim of this book is to provide both a rigorous view and a more practical, understandable view of nanosystems for graduate students and scientists in related fields. This book wants to satisfy readers with both direct and lateral interest in the discipline. This volume is structured into different parts devoted to nanotechnology and drug delivery systems and their applications. Every section of the book has been expanded where relevant, to take into account significant new discoveries and realizations of the importance of key concepts. Furthermore, emphasis is placed on the underlying fundamentals and on acquisition of a broad and comprehensive grasp of the field as a whole.

**Nanotechnology in Modern Medical Imaging and Interventions**

*Xiaoming Yang (Department of Radiology, University of Washington School of Medicine, Seattle, WA, USA)*

In series: *Biomedical Devices and their Applications* In series: *Nanotechnology Science and Technology* 2013. 332 pp.

Hardcover: 978-1-62808-274-6, $175.00.


The rapid progress of nanoscience and the application of nanotechnology in medicine are changing the foundations of disease prevention, diagnosis and treatment. At the core of nanotechnology for modern biomedical imaging and interventions, the microparticles offer “3-in-1” primary functions as imaging agents, target-specific probes, and target-specific therapeutic carriers. Nanoparticle-based imaging and interventions have already exhibited exciting potential in probing the bases or “roots” of diseases, such as to identify their altered molecular profiles and/or cellular characteristics prior to the appearance of visual anatomic alterations. As nanoparticle-based imaging and interventions continue to be refined and are increasingly applied to clinical practice, they will certainly have significant impact on global health care in the near future. Scientists from various disciplines around the world have already done outstanding work in developing various nanotechnology-based imaging modalities, such as molecular and cellular imaging with X-ray-based computerized tomography (CT), ultrasound, magnetic resonance (MR), optics, and nuclear medicine. However, clinical applications of these particle-based imaging techniques are still very limited. This can be attributed to a gap existing between basic science and clinical practice, where scientists have no direct access to patient care; meanwhile clinicians are extremely busy with their daily clinical practices and lack the time or means to learn such new technological evolutions. In order to bring the two parties together, a bridge needs to be built between basic science and clinical practice, as termed “translational medicine” by the US National Institute of Health (NIH). The aim of writing this book is
to facilitate such translation of nanotechnology-based imaging modalities from laboratory benches to clinical practices. The authors come from several continents around the world, and are experts working in the fields of nanotechnology, material science, biomedical engineering, medicine, pathology, medical imaging, and interventional radiology. We hope this book will provoke common interest, brainstorming and cooperation among professionals in both technology and medicine, and will bring nanomedicine one step closer to improving patient care.

**Particulate-Filled Polymer Nanocomposites: Structure, Properties, Perspectives**

Georgii Vladimirovich Kozlov, Yurii Grigor’evich Yanovskii and Gennady E. Zaikov (N.M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, Moscow, Russia)

In series: Nanotechnology Science and Technology


The present monography consists of three parts, in which particulate-filled polymer nanocomposites with elastomeric, semicrystalline and amorphous glassy matrices, and also hybrid nanocomposites, were considered. The relationship structure-properties study for all the indicated above nanocomposites were performed on the basis of modern physical concepts—fractal analysis, percolation theory, cluster model of polymer amorphous state structure and synergetics of the solid body. Particular attention is paid to the basic effects found for nanocomposites: interfacial adhesion and nanofiller particles aggregation. A number of new typical effects for polymer nanocomposites (for example, the nanoadhesion effect) are described in detail. A new treatment of the nanocomposites structure reinforcing element is offered as the sum of the nanofiller and interfacial regions contents, taking into account the interfacial adhesion level. This has allowed us to use the modified percolation model for the determination of these materials reinforcement degree, as well as an evaluation of its greatest reaching value. An important role of nanoparticles (aggregates of nanoparticles) in nanocomposites properties formation has been shown. For the initial nanoparticles aggregation degree, a theoretical model within the framework of dispersive strength theory was proposed, allowing one to perform nanoparticles aggregates size estimation as a function of their contents. With the aid of nanodentation, the interfacial layer sizes and elasticity modulus were experimentally determined. Within the framework of the indicated above fractal models nanocomposites thermophysical properties, their electrical conductivity and other properties were studied. It has been shown that the classical continuous models, developed for polymer microcomposites, do not give an adequate description of change (reduction) of polymer nanocomposites melt viscosity at the nanofiller contents enhancement. Such a description can be obtained by the fractally-beaten ice model application.

**Silver Nanoparticles: Synthesis, Uses and Health Concerns**

Ilaria Armentano and Jose Maria Kenny (University of Perugia, Terni, Italy)

In series: Nanotechnology Science and Technology

In series: Materials Science and Technologies


“Silver Nanoparticles: Synthesis, Uses and Health Concerns” highlights recent advances in silver nanoparticles, at the interface between material science, technology and bio-applications of these important metal nanostructures. In this book, interesting discussions are reported on promising new avenues of research that reveal the enormous potential of emerging approaches in nanobiotechnology. This is an interdisciplinary field that conjugates expertise coming from different backgrounds. A nanotechnological approach is now used in different aspects of our life: medicine, energy, transport, etc. For this reason, we decided to invite scientists with different backgrounds and from all over the world, to cover the various subjects connected with silver nanoparticles in terms of synthesis, applications and characterization. Nanostructures are playing a fundamental role in the advancement of science, as a result of the continuing dramatic progress in understanding the electronic, optical, mechanical and biomedical properties of an ever-increasing variety of nanostructures.

**Smart Nanoobjects: From Laboratory to Industry**

Kirill Levine, (Department of General and Technical Physics, The Saint Petersburg State Mining University, St. Petersburg, Russia)

In series: Nanotechnology Science and Technology

2013. 211 pp.

Hardcover: 978-1-62808-741-3. $150.00.

e-book: 978-1-62808-742-0. $150.00.

This book covers a variety of topics related to the synthesis of smart nanoobjects. Among them are surface nanostructured metals with improved corrosion and wear resistance (Syrov); the synthesis of organo-micro cycles, with emphasis on the characterization of obtained materials by infrared spectroscopy, HPLC, and NMR analysis (El-Saied); Schiffo bases metal complexes and their investigation for antibacterial and antifungal activity (El-Seidy); and transition metal complexes (Al-Sawaf). Nanotubes have always been positioned in the study of nanocomposites as interesting materials for application in electronics (transistors, resistors, varistors, sensors, display devices to mention just a few). This volume includes research on thin film deposition by acoustic wave atomizers (Balachova), and exfoliation of graphene from the liquid phase (Moshkalev). Continued interest in conducting polymer hydrogels have stimulated research for their application as pH sensors with sensing principles based on electroactivity (Elyashevich). Investigation of mass transfer kinetics in bifunctional matrices is carried out with a new type of material: metal-ion exchangers (Kalinitchev). The world of nanotechnology described in this book will excite any reader, from interested students to industrial or academic professionals.

The National Nanotechnology Initiative: Elements, Considerations and Activities

Matthew R. Gauthier

In series: Nanotechnology Science and Technology

2013. 245 pp.

Hardcover: 978-1-62948-453-2. $110.00.


Nanotechnology—a term encompassing the science, engineering, and applications of submicron materials—involves the harnessing of unique physical, chemical, and biological properties of nanoscale substances in fundamentally new and useful ways. The economic and societal promise of nanotechnology has led to investments by governments and companies around the world. In 2000, the United States launched the world’s first national nanotechnology program. From FY2001 through FY2013, the federal government invested approximately $17.9 billion in nanoscale science, engineering, and technology through the U.S. National Nanotechnology Initiative (NNI). President Obama has requested $1.7 billion in NNI funding for FY2014. U.S. companies and state governments have invested billions more. The United States has, in the view of many experts, emerged as a global leader in nanotechnology, though the competition for global leadership is intensifying as countries and companies around the world increase their investments. Nanotechnology’s complexity and intricacies, early stage of development (with commercial payoff possibly years away for many potential applications), and broad scope of potential applications engender a wide range of public policy issues.
Maintaining U.S. technological and commercial leadership in nanotechnology poses a variety of technical and policy challenges, including development of technologies that will enable commercial scale manufacturing of nanotechnology materials and products, as well as environmental, health, and safety concerns. This book provides an overview of nanotechnology, the National Nanotechnology Initiative, possible reauthorization of the 21st Century Nanotechnology Research and Development Act of 2003 (P.L. 108-153), and appropriations issues.

NATURAL DISASTERS

Cyclones: Formation, Triggers and Control
Kazuyoshi Oouchi (Japan Agency for Marine-Earth Science and Technology) and Hironori Fudeyasu (Yokohama National University, Japan)
In series: Environmental Science, Engineering and Technology
Hardcover: 978-1-61942-976-5. $140.00.
Softcover: 978-1-63117-097-3. $89.00.
This book is edited for the researchers and students who are interested in overviewing and knowing the specific progress of tropical cyclone research. This book is devoted to either an up-to-date review or report of new research on the tropical cyclone, encompassing the problems of the genesis, development, climate control of tropical cyclone in terms of wide-ranging scales based on every types of method -- theoretical, modeling, and observational analysis. Not only comprehensive climate model but stand-alone theoretical and conceptual modeling researches will continue to play important role in illustrating the essential physics of tropical cyclone, and observational studies will support their specific features.

Tsunamis: Economic Impact, Disaster Management and Future Challenges
Tianxing Cai (Dan F. Smith Department of Chemical Engineering, Lamar University, TX, USA)
In series: Natural Disaster Research, Prediction and Mitigation
Softcover: 978-1-62808-682-9. $52.00.
For most of us, the impression of the word "tsunami" is a combination of multiple elements of action movie, thriller, drama and science fiction, which can only be experienced through movies such as "The Poseidon Adventure", "The Impossible", "Bait 3D", and "Haewundae, 2013"). However, we have now indeed witnessed a tsunami in 2011. People are now very concerned and some are afraid of the realization of movie scenes in our real life. More research fields have started to give attention and thought to the tsunami itself and its impact on economics, disaster management and future challenges. This book discloses the close relationship between the tsunami and all aspects of our real life: communities, markets, economic systems, industrial operations, the natural environment, medical care, emergency response, and whole societies. This book is timely and in some ways timeless; the issues discussed within its pages are matters that are of interest to all people across the world and really across time. The chapters presented focus on the theoretical positions and cognition about engineering, and different segments of research fields; the innovative integration of geographic information system with point-of-care testing for emergency response and disaster management after tsunami (Chapter 1), the adaptive capacity building through public participation (Chapter 2), the modeling and simulation of mixing and sediment processes induced by tsunamis propagating upriver (Chapter 3), the perspective of risk quantification for commercial nuclear power plants (Chapter 4), and the future role of mathematical modeling for local energy shortage recovery after tsunamis (Chapter 5). These chapters demonstrate the complexities involved in attempting to understand the impact of tsunamis in different aspects. Furthermore, it will also help to improve disaster management systems for better preparedness and future challenges.

NUCLEAR MATERIALS & DISASTER RESEARCH

Nuclear Detonation: Guidance for Emergency Responders and Officials
Anthony R. Bruns
In series: Nuclear Materials and Disaster Research
A nuclear detonation in the United States is one of the most catastrophic incidents imaginable. While the United States Government is working domestically and with international partners to ensure this scenario never occurs, failing to plan for managing the consequences of such an event would be irresponsible. Should a nuclear detonation occur, a crucial task for federal, state, local, tribal and territorial authorities and private-sector organizations will be communicating clear and consistent messages to the public. All levels of government have responsibility for coordinating and communicating information regarding the incident to the public immediately after a nuclear detonation. State, local and tribal authorities retain the primary responsibility for responding to large-scale incidents, such as a nuclear detonation. Effectively communicating health and safety instructions to the population will be a critical factor in building trust, comforting the nation, saving lives and minimizing injury. This book was developed as a resource for emergency responders and federal, state, and local officials communicating with the public and the media during the immediate aftermath of a nuclear detonation in the United States. An interagency group of communications and radiation technical experts developed the messages in this book, which include key messages for the impacted community and the nation, and anticipated questions and answers for distribution to the public in the immediate aftermath of a nuclear detonation.

Nuclear Energy, Facility Siting and Waste Storage: Public Attitudes and Preferences
Francis Crowson
In series: Nuclear Materials and Disaster Research
2013. 204 pp.
The United States (US) program for siting interim storage and permanent disposal facilities for used nuclear fuel (UNF) is at a crossroads. The March 2010 request by the US Department of Energy (DOE) to the US Nuclear Regulatory Commission (NRC) for termination of the Yucca Mountain Project (YMP) license application, followed one year later by the disastrous nuclear events in Fukushima, Japan, have resulted in a fundamental reconsideration of approaches for siting interim and permanent UNF management facilities in the US. This book provides findings from a set of social science studies undertaken by the Center for Risk and Crisis Management (CRCM) and Sandia National Laboratories (SNL), which focus on public attitudes and preferences concerning the siting of nuclear repositories and interim storage facilities. This book is also a framework for moving toward a sustainable program to deploy an integrated system
capable of transporting, storing, and disposing of used nuclear fuel and high-level radioactive waste from civilian nuclear power generation, defense, national security and other activities.

**NUTRITION**

**Food Products Use of Voluntary Health- and Nutrition-Related Claims**  
*Oren Chertok and Marcus Aberlieb*  
In series: Nutrition and Diet Research Progress  
In series: Public Health in the 21st Century  
2013. 86 pp.  
Softcover: 978-1-62808-440-5. $52.00.  
e-book: 978-1-62808-441-2. $52.00.

Voluntary health- and nutrition-related claims by food companies were present on 43.1 percent of new products introduced in 2010. Health- and nutrition-related claims such as “low fat,” “low cholesterol,” or “high fiber” potentially influence consumer purchases and can lead companies to reformulate their less healthy products to qualify for the claims; hence, it is important to understand food companies’ adoption of these claims. This book tracks health- and nutrition-related claims on new U.S. food and beverage products from 1989 to 2010 and delineates the claims by product category and type of claim. Over the 2009 to 2010 period, the sales and average nutrient content of all new food and beverage products carrying at least one of the top ten health- and nutrition-related claims is also analyzed.

**Nutritional Insights and Food Safety**  
*Jaroslava Švarc-Gajić (Faculty of Technology, Novi Sad, Serbia)*  
In series: Nutrition and Diet Research Progress  
Hardcover: 978-1-61122-130-5. $275.00.  
Softcover: 978-1-62948-012-1. $89.00.  
e-book: 978-1-61122-630-0. $275.00.

A balanced and healthy diet is prerequisite for good health and well-being. However, dietary natural or introduced components can contribute in high extent to the development of certain diseases, such as in the case of carcinogenesis and cardiovascular illness, or may postpone or counteract their development in individuals’ with high genetic susceptibility. To humans, a balanced diet represents the source of energy, building and functional elements, as well as pleasure. On the other hand, under certain circumstances, diets can include acute or chronic poisoning and provoke numerous adverse reactions ranging from mild discomfort to death. This book presents scientific facts and evidences that will help the readership to create its own picture and attitude about nutrition, since the essence of the food safety can not be discussed excluding the individually colored philosophical approach.

**OCEANOGRAPHY**

**Ocean Acidification: Elements and Considerations**  
*Scott Raisman and Daniel T. Murphy*  
In series: Oceanography and Ocean Engineering  
Softcover: 978-1-62948-295-8. $52.00.  
e-book: 978-1-62948-296-5. $52.00.

With increasing concentrations of carbon dioxide (CO2) in the atmosphere, the extent of effects on the ocean and marine resources is an increasing concern. One aspect of this issue is the ongoing process (known as ocean acidification) whereby seawater becomes less alkaline as more CO2 dissolves in it, causing hydrogen ion concentration in seawater to increase. Scientists are concerned that increasing hydrogen ion concentration could reduce growth or even cause the death of shell-forming animals (e.g., corals, mollusks, and certain planktonic organisms) as well as disrupt marine food webs and the reproductive physiology of certain species. While not yet fully understood, the ecological and economic consequences of ocean acidification could be substantial. Scientists are concerned that increasing hydrogen ion concentration in seawater could alter biogeochemical cycles, disrupt physiological processes of marine organisms, and damage marine ecosystems. This book examines potential legislative action by Congress relating to authorizing, funding, and coordinating research to increase knowledge about ocean acidification and its potential effects on marine ecosystems.

**OPTICS AND LASERS**

**Femtosecond Lasers: New Research**  
*Yuwen Zhang (Department of Mechanical and Aerospace Engineering, University of Missouri, Columbia, MO, USA)*  
In series: Lasers and Electro-Optics Research and Technology  
Hardcover: 978-1-62948-059-6. $150.00.  
e-book: 978-1-62948-067-1. $150.00.

This book presents new research related to femtosecond laser ablation, coherent control, electronic and thermal processes, coloring, nanoscale heat transfer, and corneal refractive surgery. With laser-pulse durations of one quadrillionth of a second, femtosecond lasers are poised to change the way research is done in a variety of disciplines in science, engineering and medicine. The ability to remove material with minimal collateral damage may be the most striking feature that has not been matched by any other material processing technologies. With the processing power carried by each pulse entering petawatts (1015 W) in less than 100 femtoseconds, femtosecond lasers can remove virtually any type of material in a few picoseconds while confining the process zone to within tens of nanometers. The result is clean cuts, strong welds, and precision destruction of small targets such as cancer cells with no injury to surrounding materials.

**Nonlinear Performance and Characterization Methods in Optics**  
*Jingsong Wei (Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, Shanghai, China)*  
In series: Lasers and Electro-Optics Research and Technology  
Hardcover: 978-1-62808-093-3. $150.00.  

Nonlinear optical phenomena have been widely investigated and well understood since the invention of the Laser. Lots of applications of the nonlinear optical phenomena have always been advanced in various fields, such as, optical information storage, all-light computing, optical switch, optical limiters, micro-nano-fabrication, etc. Nonlinear optics has been developed into a subfield of optics, and there is no indication that either the developments of nonlinear optics or its applications are slowing down. In nonlinear optics, the characterization and measurement techniques of the nonlinear index are critical for understanding the nonlinear physical process and developing new applications. In this book, different optical nonlinearities, characterization and measurement methods are introduced and nonlinear problems are discussed theoretically. This book is invaluable
to advanced undergraduates, graduate students and researchers working in the fields of physics, materials, and chemistry.

**Optical Fibers: New Developments**  
*Marco Pisco (University of Sannio, Optoelectronic Division - Engineering Department, Palazzo Bosco Lucarelli, Benevento, Italy)*  
In series: *Lasers and Electro-Optics Research and Technology*  
Hardcover: 978-1-62808-425-2. $150.00.  
This book is a collection of contributions by renowned scientists in the optical fiber technology field, covering a wide range of recent progress pertaining to various topics such as special optical fibers, non-linear effects in optical fibers, components and devices for communication systems as well as optical fiber sensors. Inevitably, many aspects are omitted but each chapter is a representative example of the latest trends and results in a rapidly evolving research scenario. This collection is enriched by a few expert commentaries on selected topics, highlighting recent innovative developments and a future outlook in optical fiber technology.

**PHILOSOPHY**

**Evolution Stands Faith Up: Reflections on Evolution’s Wars**  
*Guillermo Paz-y-Miño-C (Department of Biology, University of Massachusetts Dartmouth, Massachusetts, USA)*  
In series: *Science, Evolution and Creationism*  
Softcover: 978-1-62948-440-2. $52.00.  
e-book: 978-1-62948-447-1. $52.00.

“…Shot-gun marriages between evolution and faith have never worked, despite the tradition of pointing the barrel at evolution’s head. The truth is that evolution likes it single. Free, with no stoppers of thought or restrains on logic. And when lured unknowingly into the altar by those who see facts and fiction compatible, evolution has consistently stood belief up and walked away, sometimes run, toward its secular turf… [The] dream of arranging evolution’s wedding with belief will remain dormant for as long as evolution is awake.”  
Provocative, intriguing, a contemporary and concise analysis of the clashes between science and faith: In this book, Guillermo Paz-y-Miño-C examines the societal sequels in public education, the future of America’s science and academia of believing in a deity. For this evolutionary biologist, educator and public speaker, “science is [the only] refined device for resolving ordinary curiosity and a powerful liberator of superstition. He thinks of science as “the subsistence kit to defeat re-emerging fundamentalism” in the world. This open-ended book concludes: “Once embraced by all, this truly universal language —scientific rationalism/empiricism and evolution— shall lead us to a more cohesive understanding of nature and of our amazingly diverse human condition. Humanity’s ultimate challenge will be to collectively embrace reality, with no stoppers of thought or restrains on logic.”

**PHYSICS**

**Advanced High Tc Ferroelectrics**  
*Jingzhong Xiao (Physics Department, Universidade de Coimbra, Coimbra, Portugal)*  
In series: *Physics Research and Technology*  
Hardcover: 978-1-62618-002-4. $150.00.  
Micro-Electro-Mechanical Systems (MEMS) is the integration of mechanical elements, sensors, actuators, and electronics on a common silicon substrate through microfabrication technology. Electromechanical actuators directly transform input electrical energy into mechanical energy. Piezoelectric and electrostrictive ceramics are widely used in applications requiring high generative force, high frequency operation, accurate displacement, quick response time, or small device size. This book presents important progress in growth and structure-property studies in ferroelectrics with a high Curie temperature (Tc).

**Advanced Quantum Mechanics upon Theorems**  
*Fu-sui Liu (Department of Physics, Beijing University, Beijing, China)*  
In series: *Physics Research and Technology*  
Hardcover: 978-1-62948-586-7. $150.00.  
e-book: 978-1-62948-800-4. $150.00.  
This textbook has the following four prominent features: 1. To teach advanced quantum mechanics more clearly and simply. 2. To give some new applications which the quantum mechanics cannot give due to its limitations in methods. 3. To eliminate some mistakes in both physical concepts and pure mathematics. 4. To shorten the distance between study and research. Even you are a student or a beginner, you already can write high quality papers, and can bring forth new ideas in new technology. It might be that no one reader believes this. Rather than the ordinary axiomatic approach to establish quantum mechanics upon postulates, in "Quantum Mechanics upon Theorems", the author of this textbook proved 52 theorems, 16 corollaries, one criterion, and establishes one law. Advanced quantum mechanics is the natural extension of quantum mechanics upon theorems. To make advanced quantum mechanics clear and simple, this textbook introduces the theorems, corollaries, criterion, and law of "Quantum Mechanics upon Theorems" in Chapter 1. In the other 9 chapters, this textbook proves 20 new theorems and 7 new corollaries.

**Advances in Quantum Systems Research**  
*Zoheir Ezziane (The Wharton Entrepreneurship and Family Business Research Centre (University of Pennsylvania), CERT Technology Park, Abu Dhabi, UAE and Higher Colleges of Technology, Al Ain, UAE)*  
In series: *Classical and Quantum Mechanics*  
Hardcover: 978-1-62948-645-1. $175.00.  
Quantum field theory represents a theoretical framework that explains the nature and behavior of matter and energy at the atomic and subatomic level and that constructs quantum mechanical models of systems with an infinite number of degrees of freedom. It is also known as the natural language of both particle physics and condensed matter physics. Quantum theory and Albert Einstein's theory of relativity provide the foundation for modern physics. The principles of quantum physics are being applied in several areas such as quantum computing and quantum chemistry. During the last twenty years, there
have been new developments in quantum computing, and many physicists and computer scientists have focused their interests in this exciting area, which enables quantum systems to process, save and transmit information. This area, which includes an increasing body of new insights into the basic properties of quantum systems, has inspired many scientists and scholars around the world to conduct research in optical, atomic, molecular and solid state physics. On the other hand, quantum chemistry (QC) (also referred to as quantum computational chemistry) is mainly concerned with the numerical computation of molecular electronic structures using various techniques. It investigates the ground state of atoms/molecules, the excited states, and the transition states that happen during chemical reactions. During the process of calculating molecular properties such as molecular energy, QC explores computations for different molecular geometries. Hence, QC should propose approaches that are both cost effective and reliable. This book is a welcomed addition to the current research which investigates the physical meaning and significance of information, and highlights the latest and most sophisticated concepts in quantum theory.

Contemporary Research in Quantum Systems
Zoheir Ezziane (The Wharton Entrepreneurship and Family Business Research Centre, University of Pennsylvania, and the Higher Colleges of Technology, Al Ain, UAE)
In series: Physics Research and Technology
Hardcover: 978-1-63117-132-1, $175.00.

Quantum field theory represents a theoretical framework that explains the nature and behavior of matter and energy at the atomic and subatomic level, which constructs quantum mechanical models of systems with an infinite number of degrees of freedom. It is also known as the natural language of both particle physics and condensed matter physics. Quantum theory and Albert Einstein's theory of relativity provide the foundation for modern physics. The principles of quantum physics are being applied in several areas such as quantum computing and quantum chemistry. During the last twenty years, there have been new developments in quantum computing, and many physicists and computer scientists have focused their interests in this exciting area, which enables quantum systems to process, save and transmit information. This area, which includes an increasing body of new insights into the basic properties of quantum systems, has inspired many scientists and scholars around the world to conduct research in optical, atomic, molecular and solid state physics. On the other hand, quantum chemistry (QC) (also referred to as quantum computational chemistry) is mainly concerned with the numerical computation of molecular electronic structures using various techniques. It investigates the ground state of atoms/molecules, the excited states, and the transition states that happen during chemical reactions. During the process of calculating molecular properties such as molecular energy, QC explores computations for different molecular geometries. Hence, QC should propose approaches that are both cost effective and reliable. The book explores the physical meaning and significance of information, and also exhibits the latest and most sophisticated concepts in quantum theory.

Density Functional Theory: Principles, Applications and Analysis
Joseph Morin and Jean Marie Pelletier
In series: Physics Research and Technology
Hardcover: 978-1-62417-954-9, $150.00.
e-book: 978-1-62417-955-6, $150.00.

Density Functional Theory (DFT) is a quantum mechanical modelling method, used in physics and chemistry to investigate the electronic structure (principally the ground state) of many-body systems, in particular atoms, molecules, and the condensed phases. This book provides current research in the study of the principles, applications and analysis of Density Functional Theory (DFT). Topics discussed include density functional treatment of interactions and chemical reactions at interfaces; applications of DFT calculations to lithium carbonates and magnesium carbonates; thermoelectric properties of low-dimensional materials by DFT; using DFT computations on the radical scavenging activity studies of natural phenolic compounds; polarizability of C60/C70 fullerene [2+1]- and [1+1]-adducts; DFT application to the calculation of properties of di- and trimethylphosphoranes; transport calculations of organic materials; the evolution of DFT; the capabilities of DFT for materials design of alloys; and the fundamentals of energy density functionality in nuclear physics.

Features of Optical Materials Modified with Effective Nanoobjects: Bulk Properties and Interface
Natalia V. Kamanina (Lab for Photophysics of Media with Nanoobjects, Vavilov State Optical Institute, St. Petersburg, Russia)
In series: Physics Research and Technology
Softcover: 978-1-62948-033-6, $52.00.
e-book: 978-1-62948-924-7, $52.00.

New effective nano-objects such as the fullerenes, carbon nanotubes, shungites, graphenes and quantum dots have been widely used now in the research of many scientific and technical groups. The main reason to use the fullerenes, shungites, and quantum dots is connected to their unique energy levels and the high value of electron affinity energy. The basic features of carbon nanoobjects and graphenes are regarded to their high conductivity, strong hardness of their C-C bonds as well as complicated and unique mechanisms of charge carrier moving. These peculiarities of carbon nano-objects will be under consideration in this paper to explain their influence on bulk and surface optical materials properties with good new advantages. As the result of this discussion and investigation, new areas of application of the nanostructured optical materials and elements can be shown in the optoelectronics and laser optics, medicine, telecommunications, display, microscopy technique, etc. Moreover, the nanostructured materials can be used for example, for development of transparent UV and IR window, for gas storage and solar energy accumulation, as well as in airspace and atomic industry.

From Infinity to Infinity and Beyond: The Field Evolution Equations
Miroslaw Kozlowski, Janina Marciak-Kozowska (Institute of Electron Technology, Warsaw University, Poland)
In series: Physics Research and Technology
2014.
Hardcover: 978-1-63117-448-3, $150.00.

The evolution processes in nature are governed by natural laws. The origins of the laws are still debated. In the monograph, we will present the idea that the splitting of the forces in the Universe is the result of the special properties of gravity, which influences all interactions in the Universe. We will present the master equations for all interactions and sketch the solutions. All laws of nature influence matter in the same manner which is dependent only on the scale.

From Maxwell’s Equations to Free and Guided Electromagnetic Waves: An Introduction for First-Year Undergraduates
Manuel Quesada-Pérez and José Alberto Maroto-Centeno (University of Jaén, Department of Physics,
*Escuela Politécnica Superior de Linares, Linares, Jaén, Spain*  
In series: *Physics Research and Technology*  
2014.  
Softcover: 978-1-63117-453-7. $52.00.  
e-book: 978-1-63117-460-5. $52.00.

Maxwell’s equations and the discovery of electromagnetic waves changed the world. Can you imagine how our everyday life would be without telephone, radio, television, mobile phones and internet? It’s thanks to Maxwell’s equations that we understand electromagnetic waves and how they are generated, propagated and detected. These equations can even change our perception of nature when they are really understood, but their power and elegance is completely appreciated when they are expressed in differential form. Moreover, this form is extremely useful dealing with some issues, such as the propagation of electromagnetic waves.

*Graviteoelectromagnetic Theories and their Applications to Advanced Science and Technology*  
*T. Musha, M.J. Pinheiro and T. Valone (Advanced Science Technology Research Organization, Yokohama, Japan)*  
In series: *Physics Research and Technology*  
2013. 182 pp.  
Hardcover: 978-1-62808-210-4. $120.00.  
e-book: 978-1-62808-221-0. $120.00.

The purpose in writing this book is to give an historical overview of a new challenging field of research, and equip the readers with the mathematical basis of gravitoelectromagnetic theories and their applications to advanced science and technology. The first chapter introduces the historical background of electrogravity, especially on the Biefeld-Brown effect. The second chapter gives several explanations on the Biefeld-Brown effect and other related phenomena, with a concern on the Einstein’s Unified Field Theory of Gravitation and electromagnetism and gravitational anomaly induced by the massive electrostatic charges of planets. The third chapter is concerned with the electrogravitic effect related to the zero point energy fluctuation in the vacuum, introduced from the standpoint of quantum electrodynamics. The fourth chapter discusses other electromagnetic gravity control devices including the Heim theory and their applications for space flight. The fifth chapter has shown that the Abraham force is the analogue of the Magnus force, and it thus represents the formation of vortex structures, of electromagnetic nature, in the physical vacuum: the electromagnetotoroid which can generate gravitational field. The sixth chapter deals with the plasma theory of the Universe and the role played by the gravito-electromagnetic forces generated by the plasma permeating the space between planets. And the last chapter shows the application on advanced aviation systems and future prospects of these technologies. This is a textbook written for both researchers and professional scientists, which provides the mathematical basis for readers to introduce the basic concept of gravitoelectromagnetic theories and also discusses their application to advanced science and technologies.

*Horizons in World Physics. Volume 281*  
*Albert Reimer*  
In series: *Horizons in World Physics*  
2013. 219 pp.  
Hardcover: 978-1-62808-205-0. $150.00.  

This book presents original research results on the leading edge of physics. Each article has been carefully selected in an attempt to present substantial research across a broad spectrum. Topics include a gamma spectroscopy study of natural radioactivity in soil, sediment, drinking and brine waters in communities of the oil rich Niger Delta Region, Nigeria; nature and properties of axions from the sun, archernar and gas giants; new developments of light-front dynamics in hadron physics; mesonic Lipschitz monoids; estimates for parameters and characteristics of the confining SU(3)-gluonic field in neutral vector mesons from leptonic widths; and manifestation of the strong nuclear interactions in the isotope-induced band-gap opening of graphene.

**Interaction of the Electromagnetic Field with Substance**  
*Andrey Nikolaevich Volodiev (Head of the Chair - Physics, Samara State Medical University, Samara, Russia)*  
In series: *Physics Research and Technology*  
Softcover: 978-1-62618-348-3. $150.00.  

In this book, the problems of interaction of the electromagnetic field and substance are considered. This interaction is investigated on the basis of classical and quantum approaches. Standard methods, such as the classical electronic theory of interaction of the electromagnetic field with atoms; application of Maxwell equations to various problems; and research of effective sections of interaction are discussed. Questions regarding research of optical active substances, including the physical sense of the parameter of chirality and the relativistic theory of optical activity are analyzed. Nonlinear aspects of formation of electromagnetic impulse in dielectrics are submitted, including self-induced transparency. Decisions of some kinetic equations, including some for radiating gas are given. On the basis of quantum electrodynamics, the quantum-relativistic approach to an explanation of Malus law is developed, and some new features of deduction of the Klein-Nishina formula are investigated. The book can be useful to students and scientists working in areas connected with the interaction of electromagnetic radiation and substance.

**Large Hadron Collider (LHC): Phenomenology, Operational Challenges and Theoretical Predictions**  
*Bernard D. Hatton and Abelin R. Gilles*  
In series: *Physics Research and Technology*  
2013. 100 pp.  
Softcover: 978-1-62948-176-0. $69.00.  

The Large Hadron Collider (LHC) is the highest-energy particle collider ever constructed and is considered "one of the great engineering milestones of mankind." It was built by the European Organization for Nuclear Research (CERN) from 1998 to 2008, with the aim of allowing physicists to test the predictions of different theories of particle physics and high-energy physics, and particularly prove or disprove the existence of the theorized Higgs boson and of the large family of new particles predicted by supersymmetric theories. In this book, the authors study the phenomenology, operational challenges and theoretical predictions of LHC. Topics discussed include neutral and charged black hole remnants at the LHC; the modified statistics approach for the thermodynamical model of multiparticle production; and astroparticle physics and cosmology in the LHC era.

**Layered Structure Effects as Realisation of Anizotropy in Magnetic, Galvanomagnetic and Thermoelectric Phenomena**  
*Peter V. Gorskyi (Institute of Thermoelectricity of National Science Academy and Ministry of Education and Science of Ukraine)*  
In series: *Physics Research and Technology*  
Hardcover: 978-1-62948-875-5. $175.00.  
Many materials used in devices intended for converting the energy or information in its crystal structure belong to the layered ones. These materials include transition metal dichalcogenides, intercalated graphite compounds, semiconductors with superlattice, synthetic metals based on organic compounds, etc. This book examines the influence of nonparabolicity effects on magnetic, electric and thermoelectric properties of layered crystals with closed or transient Fermi surfaces, although most researchers believe that these effects can be pronounced only for high-open Fermi surfaces. The book can be recommended as a reference or textbook for undergraduate and graduate students of higher educational institutions as well as for professionals interested in the special problems of theoretical condensed matter physics.

Maxwell Electrodynamics and Boson Fields in Spaces of Constant Curvature

E. M. Ovsiyuk, V. V. Kisel and V. M. Red’kov
(Institute of Physics, Minsk, Belarus)
In series: Contemporary Fundamental Physics
Edited by: Valeriy V. Dvoeglazov (Univ. de Zacatecas, Zacatecas, Mexico)
Hardcover: 978-1-62618-891-4. $230.00.
In this book detailed analytical treatment and exact solutions are given to a number of problems of classical electrodynamics and boson field theory in simplest non-Euclidean space-time models, open Bolyai and Lobachevsky space H3 and closed Riemann space S3, and (anti) de Sitter space-time. The main attention is focused on new themes created by non-vanishing curvature in the following topics: electrodynamics in curved spacetime and modeling of the media, Majorana–Oppenheimer approach in curved space time, spin 1 field theory, tetrad based Duffin–Kemmer-Petiau formalism, Schrödinger–Pauli limit, Dirac–Kahler particle, spin 2 field, anomalous magnetic moment, plane wave, cylindrical, and spherical solutions, spin 1 particle in a magnetic field, spin 1 field and cosmological radiation in de Sitter space-time, electromagnetic field and Schwarzschild black hole.

Nano- and Piezoelectric Technologies, Materials and Devices

Ivan E. Parinov (Vorovich Mechanics and Applied Mathematics Research Institute, Southern Federal University, Rostov-on-Don, Russia)
In series: Physics Research and Technology
The novel materials and devices based on nanotechnology and piezoelectric approaches have found wide applications in modern science techniques and technologies. A tremendous interest is ignited with the fast development of theoretical, experimental and numerical methods which provide new knowledge and are capable of providing a forecast on the development of very fine processes; particularly structural and phase transformations taking place during processing, loading and work of modern materials under critical influences. These specimens demonstrate a broad spectrum of properties in scale from nanometers up to macroscopic range. Numerous devices with their very high accuracy, longevity and extended possibilities to work in wide temperature and pressure ranges, aggressive media, etc. demonstrate characteristics directly defined by used compositions and technological solutions.

NeuroQuantology: Quantum Physics in the Brain. Reducing the Secret of the Rainbow to the Colours of a Prism

Sultan Tarlacy (Sifa University, Izmir, Turkey)
In series: Neuroscience Research Progress
2014.
Softcover: 978-1-63117-301-1. $85.00.
Since 2003, neuroscience and quantum physics have been growing together by examining two main topics under NeuroQuantology. One of these is the measurement problem in quantum mechanics. The other topic of NeuroQuantology is quantum neurobiology: that is, the brain operates not only at a classical, macroscopic level, but also at a quantum microscopic level. It covers the question of where this level begins and whether it has a bearing on our consciousness, mind, memory and decision-making processes. The last subtopic is quantum biology. Quantum biology refers to applications of quantum mechanics to biological objects. The first people to suggest that quantum mechanics could operate in biology, even though they were the godfathers of quantum mechanics, now after 100 years have passed, have been squeezed into quantum mechanics and the physics and chemistry of solid, dead matter. This book provides the motivation to break down this resistance and open further a new door to quantum neurobiology. This book gives the reader a distinctly better understanding of interdisciplinary approach of the brain, including quantum mechanics and neuroscience. This book is about the edge of new science, briefly NeuroQuantology in a nutshell.

Neutrinos: Discovery, Detection and New Developments

Luan Navarro and Sarah Bianchi
In series: Physics Research and Technology
Softcover: 978-1-62808-546-4. $72.00.
e-book: 978-1-62808-547-1. $72.00.
The idea of a neutrino was derived from experiments demonstrating continuous beta decay spectra and, at the same time, it resolved problems that had arisen in the determination of nuclear constituents. The unusual features of the neutron, especially its disintegration, led to the introduction and subsequent detection of a new particle, the neutrino. In this book, the authors present current research in the study of the discovery, detection and new developments in neutrinos. Topics include the way to a deterministic tachyon model of neutrino; neutrino emissivity and light species; and the magnetic moment and electric dipole moment of Tau-neutrinos.

Quantum Mechanics Upon Theorems

Fu-sui Liu (Department of Physics, Beijing University, Beijing, China)
In series: Classical and Quantum Mechanics
This innovative new textbook contains forty-nine theorems, sixteen corollaries, one criterion, and one law, and thus for the first time, approaches quantum mechanics in a manner to be established on the basis of exact proofs instead of on postulates, principles, axioms, hypotheses, assumptions, and guesses, and in a manner to be free from paradoxes. In this textbook, most chapters start with a bit of history, because the historical experiences are worthy to note. All the difficult points, such as the wave-particle duality and uncertainty relations and operator representation of the observable are proved exactly by mathematics, and thus the concepts and pictures in quantum mechanics become easy to understand and imagine. If readers understand the
In this book the authors present current research in the study of neutron scattering. Topics discussed in this compilation include the current status and activities of small-angle neutron scattering instrument-SANS-U; analyzing the phase behavior of polymer blends by small-angle neutron scattering; small-angle neutron scattering and the study of nanoscopic lipid membranes; evaluation of the thermodynamic properties of hydrated metal oxide nanoparticles by INS techniques; ultra-low-temperature sample environment for neutron scattering experiments; and strengths of the interactions in YBa2Cu3O6.7 and La2-xSrxCuO4(x = 0.16) superconductors obtained by combining the angle-resolved photoemission spectroscopy and the inelastic neutron scattering resonance measurements.

Research Progress in Chemical Physics and Biochemical Physics: Pure and Applied Science
Gennady E. Zaikov, Alexandr A. Berlin, Krzysztof Majewski and Andrey A. Pimerzin (N.M. Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, Moscow, Russia)
In series: Physics Research and Technology
The editors and contributors of this volume will be quite pleased if the readers can understand and accept the contents and ideas of this monograph. In this book, we decided to include information about the synthesis and investigation properties of epoxy containing compounds and composite materials on their basis, such as: hydrolysislation reactions of polymethylhydroxideoxane with acrylates and methacrylates and solid polymer electrolyte membranes on their basis; biodegradable binary and ternary blends of cellulose and ethyl cellulose with synthetic and natural polymers; biodetoxication of aromatic hydrocarbons in aqueous media; modern immunochemical and biosensor technologies for the analysis of environmental ectoicants; the morphology of polyl3-hydroxybutyrate) with an ethylene-propylene copolymer blend; the development of thermoplastic vulcanizates based on isotactic polypropylene and ethylene-propylene-diene elastomer, as well as the mechanical and chemical properties of modern basalt fibers and epoxy basaltoplastics. We collected the reviews and original papers about technology transfer for the development of new products, chemical and biochemical physics. Special attention is given to adaptogens that decrease the generation of reactive oxygen species by mitochondria. Quantum-chemical calculation of the aromatic olefines of some molecules is performed using the MNDO method, and the formation of ozonides and their stability in the process of unsaturated polymers in latex, as well as structures ( monomer and dimer) of sodium and potassium 2-(N- methylamide)-2-(3,5-di-tert.butyl-4-hydroxybenzyl)-malonates and biological properties are also discussed. The interrelation structure and thermodynamic properties in the five-membered O- and N-heterocyclic compounds, including the thermodynamic properties and structure of heteroatom derivatives of indene, are explored further. Many interesting results in the field of the reaction of ozone with some oxygen containing organic compounds are discussed, including: enhanced oil recovery using binary mixture reaction products as an alternative to increasing reservoir water content; assessment of the potential of enhanced oil recovery from reservoirs with high water content using the heat of nitrate oxidation reactions and in situ hydrocarbon oxidation; structural features of polyl3-hdroxybutyrate) with an ethylene-propylene copolymer blends; and the kinetics of photoinitiated copolymerization of bifunctional (meth)acrylates till high conversion. The numerical verification of kinetic model of the process and the degradation of films based on mixtures of vinyl alcohol with vinyl acetate copolymers and polyhydroxybutyrate under UV-radiation and polymer-inorganic materials on the basis of tetraethoxysilane are also discussed. We also included information concerning nanofibrous polyhydroxybutyrate-based biomaterials, such as: the influence of aminoalkoxy- and glycidoxyalkoxysilan on

Recent Developments in Dark Matter Research
Nori Kinjo and Akira Nakajima
In series: Physics Research and Technology
Hardcover: 978-1-62948-010-7. $150.00.
In this book, the authors present current research in the study of dark matter. Topics discussed in this compilation include the submicroscopic viewpoint on gravitation, cosmology, dark energy and dark matter, and the first data of inerton astronomy; some new astronomical consequences of the dark matter concept; dark matter/energy, quantum mechanics and modern causal analysis; non-baryonic dark matter in cosmology; superheated liquids and the search for astrophoric dark matter; behavior of dark matter in interacting dark energy models; rotation curves in Bose-Einstein condensate dark matter halos; weyl dark fluid from the brane world scenario; massive neutron stars to dark matter particle properties; and modeling dark matter halos via solitonic Bé condensates.

Recent Progress in Neutron Scattering Research
Agustin Vidal and Matthew Carrizo
In series: Physics Research and Technology
Hardcover: 978-1-62948-099-2. $95.00.
e-book: 978-1-62948-100-5. $95.00.
In this book the authors present current research in the study of neutron scattering. Topics discussed in this compilation include the current status and activities of small-angle neutron scattering instrument-SANS-U; analyzing the phase behavior of polymer blends by small-angle neutron scattering; small-angle neutron scattering and the study of nanoscopic lipid membranes; evaluation of the thermodynamic properties of hydrated metal oxide nanoparticles by INS techniques; ultra-low-temperature sample environment for neutron scattering experiments; and strengths of the interactions in YBa2Cu3O6.7 and La2-xSrxCuO4(x = 0.16) superconductors obtained by combining the angle-resolved photoemission spectroscopy and the inelastic neutron scattering resonance measurements.

Quantum Mechanics: Principles, New Perspectives, Extensions and Interpretation (with DVD)
Olavo Leopoldino da Silva Filho (Universidade de Brasilia, Instituto de Fisica, Nucleo de Fisica Estatistica e Fisica Matematica, Campus Universitario Darcy Ribeiro, Brazil)
In series: Physics Research and Technology
2014.
Hardcover: 978-1-63117-450-6. $195.00.
The interpretation of Quantum Mechanics has been the source of an intense debate since its earlier years of existence. The present book takes a different path to disclosure of a complete and self-contained interpretation of Quantum Mechanics. Beginning from its mathematical foundations, from which the Schrödinger equation is mathematically derived in six different but complementary ways, the book is capable of constructing an interpretation that follows closely the formalism of the theory, thus avoiding each and every weird construct of the other proposals, such as the “reduction of the wave packet”, the Copenhagen Interpretation, “non-locality and wholeness”, Hidden Variable theories, the Relative State Interpretation, and many other concepts that render Quantum Mechanics its (much infamous but also glorified) fame of a hermetic theory when it comes to its interpretation. Each derivation of the Schrödinger equation is shown equivalent to the others in precise mathematical terms, while these mathematical developments are kept at a level comprehensive for any graduate student in Physics, Chemistry or Mathematics. It allows the reader to understand how the constructs involved in one derivation compose with the constructs of all the other derivations to bring about a lively image of the interpretation of the theory. Many simulations are presented such that the reader can see what is going on within any quantum mechanical phenomenon.

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Nori Kinjo and Akira Nakajima
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adhesion characteristics of ethylene copolymers; the study of the influence of dihydroquercetin and cyclodextrin inclusion complex with the new dihydroquercetin derivative on ozone oxidation of fibrinogen; challenges and development perspectives on nanopatterned implants loaded with drugs; the use of vegetable oils as platform chemicals for synthesis of thermoplastic bio-based polyurethanes; active packaging based on the release of carvacrol and thymol for fresh food; the structural analysis of nanocomposites polymer/organoclay flame-resistance; the regularity of crack formation on vulcanized elastomers under ozone action (polysoprene); the evaluation of efficiency of deposition of dispersed particles in inertial dust separator; as well as a comparative evaluation of the viability of the cells of probiotic strains by luminescence microscopy and flow cytometry. As we know, the power of innovative solutions is experience, creativity and technology. In this volume the readers can find information about experience and creativity, as well as some information about modern technology. The editors and contributors will be happy to receive some comments from the readers which can be taken into account in our future research.

Rheology: Theory, Properties and Practical Applications
Geoffrey Mitchell (Centre for Rapid and Sustainable Product Development, Polytechnic Institute of Leiria, Marinha Grande, Portugal)
In series: Physics Research and Technology
Rheology is the study of the flow of matter, primarily in the liquid state, but also as ‘soft solids’ or solids under flow conditions in which they respond with plastic flow rather than deforming elastically in response to the applied force. An understanding of the flow of matter underpins a diversity of technologies and industrial processing including polymer and food processing. It applies to substances which have a complex microstructure, such as concentrated solutions, suspensions, polymers and inorganic glass formers as well as biological materials which belong to the class of soft matter.

The development of rheological measurements is seemingly straightforward to make, but require models to interpret the mechanical measurements in terms of the microscopic behaviour of the material. "Rheology: Theory, Properties and Practical Applications" draws these diverse strands of current rheological research in to a single volume which embraces theory, measurement and applications in topics as diverse as theory and electrospinning, coal ash slag and food processing, hydrogels and liquid crystal polymers, reaction injection moulding and micro rheology. There is a strong focus on the emerging topics in rheology and its application to complex soft matter especially in the field of food science and technology. The sixteen chapters in the volume present unpublished research work across these topics from leading authorities in the relevant field. The volume has a strong international representation with the selected authors drawn from some ten countries in Europe, South America and the rest of the world. Each chapter contains a comprehensive bibliography of related work.

"Rheology: Theory, Properties and Practical Applications" provides a fascinating snap shot across the current developments in rheology.

Space Time Geometry and Quantum Events
Ignazio Licata (Scientific Director of ISEM, Inst. for Scient. Methodology, Palermo, Italy)
In series: Physics Research and Technology
2014.
Hardcover: 978-1-63117-455-1. $175.00.
It is well-known that the fundamental problem in contemporary theoretical physics is the “pacific coexistence” between General Relativity and Quantum Mechanics. The scenarios of the explorables relationships between classical space-time and quantum land are various: the geometrodynamics one (by a proper extension of geometry), the stochastic fractal one (defining a middle land mediated by QFT-like hypotheses), the emergent one (from a physical viewpoint, by the collective behaviours of discrete entities, which mathematically means that the geometry derives from an algebraic structure of events). This anthology includes some of the most significant voices on the problem of the possible relations between the space-time dynamics and the quantum networks of events.

Spectroscopic Techniques for Security, Forensic and Environmental Applications
Y. Dwivedi, S. B. Rai and J. P. Singh
(NIT Kurukshetra, India)
In series: Chemistry Research and Applications
The objective of this book will be to explore the possible applications in the field of spectroscopy toward matters related to security, the environment and forensics, with in-depth analyses of relative difficulties and advantages of the various techniques. Spectroscopic techniques have been contributing significantly to diverse areas, such as material processing and characterization, communication, forensic science, and defense with an unequalled precision by using lasers. Raman and infrared spectroscopic techniques are regularly used in the studies on semiconductors, microelectronics, catalysis and nanomaterials. With the advent of nanotechnology, new materials are being reported with an improved sensitivity to various toxic gases, finger printing etc. Photo acoustic spectroscopy, with a quartz tuning fork sensor, makes it possible to detect trace amounts of explosive powders and residues on surfaces from a distance. Laser induced breakdown spectroscopy from the Curiosity rover, roaming the Mars surface, has been sending valuable spectral data that will be used to understand the existence of life. The present book encompasses a wide range of topics pertaining to the variety of spectroscopic techniques which would be of great importance in the detection of explosives, chemical and biological agents and in meeting any defense threats.

The Infinite History of NOW: A Timeless Background for Contemporary Physics
Davide Fiscalletti and Amrit Srecko Sorti
(S. Lorenzo in Campo (PU), Italy)
In series: Physics Research and Technology
Hardcover: 978-1-63117-283-0. $85.00.
The development of theoretical physics can be seen as a continuous improvement of the models of space and time. In particular, the beginning of the 21st century brought a new vision into quantum physics: quantum particles move in space only, time measured with clocks is merely a numerical order of particles’ motion. This so called “a-temporal” view of physics offers a radically new understanding of the micro and macro universe. On the basis of the notion of time as numerical order of material change, in the book “The Infinite History of NOW: A Timeless Background for Contemporary Physics”, the authors Davide Fiscalletti and Amrit Sorti introduce suggestive unitary and holistic perspectives in the interpretation and explanation of several physical phenomena of contemporary physics. It is shown that the concept of time as a mathematical quantity measuring the numerical order of material changes resolves Zeno problems on motion, hypothetical travel into past, twin paradox of special relativity and allow new perspectives to be opened in the interpretation and explanation of Einstein-Podolski-Rosen experiment and of non-local correlations between subatomic particles. Moreover, a timeless description of the gravitational interaction and the idea of a timeless three-dimensional quantum vacuum as a fundamental bridge between gravity and quantum behaviour of matter are developed. Finally, in the
second part of the book, after analysing the fundamental features of some relevant unitary theories of contemporary physics (such as superstring theory and loop quantum gravity) and making some considerations about being versus becoming and atomism versus monism in modelling physical reality at a fundamental level, it is shown that the replacement of the concept of time with the numerical order of material change provides a new suggestive interpretation of the fundamental unitary field theories opening the doors to a real “timeless theory of everything”. The use of a simple and fluid language makes the book accessible to a wide reading public.

The Theory of Relativity: Principles, Logic and Experimental Foundation
Qing-Ping Ma (The University of Nottingham Ningbo China, Business School, Zhejiang, China)
In series: Physics Research and Technology
The theory of relativity has been hailed as one of the two most important scientific discoveries in the 20th century. This book presents a comprehensive introduction and analysis of the special theory of relativity and its logical and experimental foundations. It explains in detail the basic principles of the relativity theory, introduces all the important experiments and examines the logic in the reasoning of relativistic results and conclusions. The ten chapters of this book cover 1) the two postulates, their experimental evidence and logical foundation; 2) the Michelson-Morley experiment and all other important experiments on the speed of light and the medium of light including stellar aberration, the Fizeau experiment, Trouton experiment, Trouton-Noble experiment, Sagnac experiment, Kennedy-Thorndike experiment, Ives-Stilwell experiment, and many modern experiments; 3) the derivation of the Lorentz transformation; 4) the variables in the Lorentz transformation and the principle of relativity; 5) time dilation, its experimental evidence and the twin paradox; 6) length contraction and length paradoxes; 7) motion mass and its derivation, relativistic momentum and experimental evidence; 8) mass-energy relation, its derivation and experimental evidence; 9) time and simultaneity; 10) test theories and experimental verification of special relativity. This book is suitable for both academics and students in science and philosophy and other readers who are interested in physics and its associated philosophical issues; space-time theories; the logical foundation of scientific discoveries; the history of science; the methodology of science, especially researchers and students in physics and the philosophy of science.

The Universe Evolution: Astrophysical and Nuclear Aspects
Igor Strakovsky and Leonid Blokhintsev (The George Washington University, Washington, DC, USA)
In series: Physics Research and Technology
Hardcover: 978-1-62808-545-7. $230.00.
This book is a natural follow-up and extension of the recent publication “The Big Bang: Theory, Assumptions and Problems”, (Eds: O’Connell and Hale, 2012, Nova Publications). The authors of the present work deliver an account of current research on the subject of the astrophysical and nuclear physics aspects of the evolution of the universe. They present a general overview of both the theoretical and experimental knowledge of nuclear physics and astrophysics necessary for the understanding of stellar structure and evolution of stars and galaxies. This account is followed by a discussion of different types of reaction mechanism (transfer, capture and photodissociation) that is further illustrated by appropriate examples. Two- and three-body approaches are among the topics that are addressed and discussed here. The book contains a comprehensive overview of neutron star gamma ray bursts and of pulsar-wind nebulae. The final chapter is devoted to an account of the contributions of the scientific polymath George Gamow to physical cosmology and astrophysics, much of which was based on the foundational work of the pioneers of the physics of stellar structure and evolution, Arthur Eddington, Ralph Fowler, and Subramanian Chandrasekhar.

The Way to ETIs: Applied Gravitational Mass Spectroscopy
Kristina Zubow, Anatolij Zubow and Viktor Zubow (R&D Department, Aist H&C GmbH, Germany)
In series: Physics Research and Technology
Hardcover: 978-1-62808-091-9. $175.00.
In this book, the main principles of gravitation mass spectroscopy are discussed. The possibilities of this method to investigate the long-range order in liquids, synthetic and natural polymers of organic and inorganic nature are shown. Special attention is paid to the analysis of chemical and physical processes as well as to information fields of cluster ensembles and their interaction in the distance (e.g., gravitational radiation signals with super light velocity, new communication channel with ETIs, a first contact with our nearest extraterrestrial civilization on the planet Uranus, interception in the ETIs in real time). A forced formation of a new molecular matter as clusters in stationary waves of white and colour noises of vacuum was established. The application of the method in chemistry, physics, botany, zoology, medicine, material research, applied informatics, astrophysics, mineralogy and even astrology has been suggested. The book is recommended for a broad readership that are interested in nature sciences like chemists, physicists, biologists, doctors, students, engineers and technicians.

Turbulence from First Principles
Michail Zak (Jet Propulsion Laboratory, California Institute of Technology, Cypress, CA, USA)
In series: Physics Research and Technology
2013. 207 pp.
e-book: 978-1-62808-474-0. $150.00.
This book presents a non-traditional approach to the theory of turbulence. Its objective is to prove that Newtonian mechanics is fully equipped for the description of turbulent motions without the help of experimentally obtained closures. Turbulence is one of the most fundamental problems in theoretical physics that is still unsolved. The term “unsolved” here means that turbulence cannot be properly formulated, i.e., reduced to standard mathematical procedure such as solving differential equations. In other words, it is not just a computational problem; prior to computations, a consistent mathematical model must be found. Although applicability of the Navier-Stokes equations as a model for fluid mechanics is not in question, the instability of their solutions for flows with supercritical Reynolds numbers raises a more general question: is Newtonian mechanics complete?
**Physiology**

**Estrous Cycle: Physiology, Endocrinology and Role in Breeding and Reproductive Management**

*Leonel H. Durand*

In series: *Endocrinology Research and Clinical Developments*

In series: *Obstetrics and Gynecology Advances*

2013. 150 pp.

Hardcover: 978-1-62948-476-1. $69.00.


The estrous cycle represents a cyclic pattern of ovarian activity in which many physiological and morphological events occur to enable ovulation, receptivity, and to maintain the establishment of pregnancy. In this book, the authors present current research in the study of the physiology, endocrinology, role in breeding and reproductive management of the estrous cycle. Topics discussed include the importance of hormones and rearing environments corresponding to sex differences in physiology and behavior; cell renewal in hormone-responsive tissues during the estrous cycle; new improvements for estrous cycle synchronization in cattle; a picture of zona pellucida as seen by way of a transmission electron microscope; and a comparative study of different populations of spiny mice (Acomys) and their reproductive response to increased salinity, melatonin, and aldosterone treatments assessed by the estrous cycle.

**Polymers**

**Advanced Functional Polymers and Composites: Materials, Devices and Allied Applications, Volume 1**

*M. Phil Inamuddin (Department of Applied Chemistry Faculty of Engineering & Technology Aligarh Muslim University, Aligarh, India)*

In series: *Materials Science and Technologies*

In series: *Polymer Science and Technology*


Hardcover: 978-1-62948-055-8. $175.00.


It is well known that polymeric and composite materials are finding various applications in some critical areas of human endeavors, such as medicine, medical appliances, energy and the environment. This edition will, hopefully, evoke interest from scientists working in the fields of chemistry, polymer chemistry, electrochemistry and material science. Its applications and uses include: voltammetric nanoelectrodes, photocatalytic materials and reactors, the adsorption of pollutants, environmental pollution control, support vector machines as applied to polymers, and the simulation of the ion exchange membrane. This edition is a highly valuable resource for scientists, researchers, upper-level undergraduate and graduate students, as well as college and university professors, because it provides the most up-to-date reference work summarizing the pioneering research work in the field of polymeric and composite materials.

**New Developments in Polymer Composites Research**

*Stephan Laske and Andreas Witschnigg* (Montanuniversitaet Leoben, Department Kunststofftechnik, Leoben, Austria)

In series: *Polymer Science and Technology*

In series: *Materials Science and Technologies*


Hardcover: 978-1-62948-340-5. $175.00.


Polymer materials are made from at least two different materials with significantly different properties and behavior. When such materials are combined, the produced composite has completely different characteristics compared to the individual components. In ancient Egypt, the earliest composite materials where created to form bricks out of mud and straw for building constructions. Polymeric composites are steadily growing and are one of the most promising material classes, which have the opportunity to deal with new challenges approaching from the market. These materials are often stronger, lighter or less expensive when compared to traditional materials, but the demands and needs are getting more diverse and complex. Modern composites comprise the incorporation of filler in micro and nanoscale, as well as the construction of specific structure – especially the imitation of nature – to create new or improved material properties. This book gives an overview of the scientific investigations carried out in recent years. The topics discussed are forging an arc over different kinds of composite materials such as composites based on commonly available polymeric raw materials, but also composites based on biological raw materials as well as the achievable material properties comprising mechanical, electrical, structural and tribological properties. Additionally, the book is also shedding light on the construction and structuring of such composites using nature as an inspiring example.

**Polymer Materials with Smart Properties**

*Maria Bercea ("Petru Poni" Institute of Macromolecular Chemistry, Iasi, Romania)*

In series: *Materials Science and Technologies*

In series: *Polymer Science and Technology*

2013. 219 pp.

Hardcover: 978-1-62808-876-2. $150.00.


The design of smart materials based on different natural and synthetic polymers represents one of the most attractive research areas over the last several years. Many efforts have been carried out to find new solutions for developing stimuli-responsive polymers sensitive to different triggers, which have a fast and reversible nonlinear response to small changes of external stimuli or environmental conditions. In
combination with other organic/inorganic/macromolecular compounds, new composite materials owning multifunctional properties can be designed. Thus, the inorganic nanoparticles incorporated into a polymer matrix provide novel functionalities to hydrogels and tunable properties. This book reviews recent advances and developments of various classes of stimuli responsive polymer materials, different type of hydrogels for biomedical and pharmaceutical devices, scaffolds for tissue regeneration, and stimuli-responsive sensors or separation processes.

**PROTEINS**

**Cytochromes b and c: Biochemical Properties, Biological Functions and Electrochemical Analysis**

*Rurik Thom*

In series: *Protein Biochemistry, Synthesis, Structure and Cellular Functions*


Hardcover: 978-1-63117-467-4, $150.00.

Despite the fact that over 200 phosphorylation sites have been mapped on the mitochondrial oxidative phosphorylation (OxPhos) complexes, very little is known about the relevant cell signaling pathways and the terminal kinases and phosphatases that control these phosphorylations. Within OxPhos, cytochrome c (CytC) plays a special role because it is not only involved in electron transport but is also a key executor of apoptosis when it is released from the mitochondria. In this book the authors present further research on the study of cytochrome C as well as cytochrome B. Some of the topics discussed in the book include the regulation of cytochrome C in respiration as well as its role in apoptosis. It also focuses on the structural aspects and touches base on cytochrome B5 as a pleiotropic metabolic modulator.

**PSYCHOLOGY AND PSYCHIATRY**

**Positive Human Functioning From a Multidimensional Perspective. Volume 1: Promoting Stress Adaptation**

*A. Rui Gomes, Rui Resende and Alberto Albuquerque (Universidade do Minho, Escola de Psicologia, Campus de Gualtar, Braga, Portugal)*

In series: *Psychology of Emotions, Motivations and Actions*


Hardcover: 978-1-62948-580-5, $150.00.

The main goal of this volume is to analyze human adaptation to life situations using examples of work and sport contexts, topics related to stress, emotions, and burnout, with a discussion from both a theoretical and an empirical point of view. How to promote positive adaptation to adaptational contexts is addressed by numerous authors.

**PUBLIC HEALTH**

**Contemporary Athletics Compendium. Volume 4**

*Daniel Drane*

In series: *Contemporary Athletics Compendium*

2013. 300 pp.

Athletics plays a role in the lives of many throughout the world. Some people compete in organized athletic competition while others take part in more recreational forms of athletics. Maintaining an active lifestyle seems to be even more important today with all of the stresses of everyday life. Therefore, research related to athletics and sport has an important place in our society. This book seeks to add to this body of knowledge by providing 16 chapters that deal with different components of athletics and sport. The first 7 chapters provide research on business related aspects of athletics while the final 9 chapters revolve around psycho-social aspects of athletics.

**Henri Piéron and Nathaniel Kleitman, Two Major Figures of 20th Century Sleep Research**

*Claude Gottesmann (Département de Biologie, Faculté des Sciences, Université de Nice-Sophia Antipolis, Nice, France)*

In series: *Sleep - Physiology, Functions, Dreaming and Disorders*

2013. 152 pp.

Hardcover: 978-1-62618-990-4, $85.00.

During the twentieth century, only two researchers published world famous, encyclopedic monographs related to sleep. The first of these works appeared in 1913, when Henri Piéron published “Le problème physiologique du sommeil”, which is still a standard reference today. Although multiple researchers and clinicians, such as Economo (1917, 1920), Berger (1929), Hess (1931), Bremer (1935, 1936), Loomis et al. (1937) and Ranson (1939), subsequently published highly important findings on sleep-waking processes, the next fundamental phase was marked by the publication of the first edition of Sleep and Wakefulness, by Nathaniel Kleitman in 1939. Later, following his discovery of rapid eye movement (REM) dreaming sleep stage in 1953, Kleitman published the masterful second edition of this work in 1963. Later on, several researchers published highly important reviews (Jouvet 1962, 1972, Moruzzi 1963, 1972, Hobson 1988, Steriade and McCarley 1990), although they were directed to more limited topics. The book provides an overview of Piéron’s and Kleitman’s sleep-related papers, placed in their proper historical context.

**Ticks: Disease, Management and Control**

*Mogens Woldemeskel (The University of Georgia, College of Veterinary Medicine, Department of Pathology, Tifton Veterinary Diagnostic and Investigational Laboratory, Tifton, GA, USA)*

In series: *Insects and Other Terrestrial Arthropods: Biology, Chemistry and Behavior*


Hardcover: 978-1-62081-136-8, $150.00.
Softcover: 978-1-63117-149-9, $89.00.

Ticks and tick-borne diseases are among the major stumbling blocks to the development of livestock industry and entail heavy economic loses particularly in the tropics and subtropics. Ticks serve as vectors of several diseases and pose health hazards to animals and humans throughout the world. Attempts to control ticks and tick-borne diseases using different methods have been going on for several generations; however, ticks still cause insurmountable problems to the livestock industry and human and animal health. This book enlightens the reader on research and field experiences obtained from different parts of the world on the various chemical and biological approaches used in the control of ticks and tick-borne diseases. This book would serve as a valuable reference and guide for students, and researchers in biological
and biomedical sciences and tick control authorities aimed at devising a sound tick control strategy.

Louise Stockman
In series: Food Safety: Developments, Policies, Programs, and Research
Softcover: 978-1-62948-876-9. $52.00.
Most U.S. households have consistent, dependable access to enough food for active, healthy living — they are food secure. But a minority of American households experience food insecurity at times during the year, meaning that their access to adequate food is limited by a lack of money and other resources. Food and nutrition assistance programs of the U.S. Department of Agriculture (USDA) increase food security by providing low-income households access to food, a healthful diet, and nutrition education. This book presents statistics from the survey covering households’ food security, food expenditures, and use of food and nutrition assistance programs in 2012.

SOCIETY

The "Management of Aging" and the Dark Side of Modernity
Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)
In series: Social Perspectives in the 21st Century
Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2014. 60 pp.
Softcover: 978-1-62948-533-1. $52.00.
Health, care and welfare have emerged as key vehicles used to legitimizew and position the identities that older people adopt in contemporary modernity. Both contain continually changing technologies that function to mediate relations between older people and the state. Medico-technical, victimization policies and care management discourses, have been presented as adding choice and reducing limitations associated with adult aging. However, they also represent an increase in professional control that can be exerted on lifestyles in older age and thus, the wider social meanings associated with that part of the life-course. This book presents a theoretical analysis based on a critical reading of the work of Michel Foucault. It identifies the inter-relationship between managers and older people in terms of power, surveillance and normalization. The book highlights how and why older people are the subjects of legitimizing professional gazes through the dark side of modernity: being managed, being victimized and asking the existential questions of death.

Theorizing Community Care: From Disciplinary Power to Governmentality to Personal Care
Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)
In series: Social Perspectives in the 21st Century
Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
Softcover: 978-1-62948-532-4. $52.00.
e-book: 978-1-62948-541-6. $52.00.
As we enter 2014, an accelerating interest in abuse has arisen due to the implementation of community care policies relying upon informal care and a relentless political campaign to legitimize an enforced obligation to care. The use of care management technologies that focus on assessment and inspection, can, in this policy climate, become a means of surveillance and enforcement of informal caring. It is argued that Michel Foucault offers a set of strategies (Foucault 1977: 205) for understanding how the discourses on community care construct older people’s experiences and their identities, as constructed subjects and objects of managerial knowledge. This book examines this and the dystopian implications for older people. The book attempts to move beyond such fatalism by introducing governmentality and the possibilities through social policy for older people. Finally, the book examines the emergence of personal care and the implications for personalization and tailored care services for older people.

SPACE AND ASTRONOMY

Homage to the Discovery of Cosmic Rays, the Meson-Muon and Solar Cosmic Rays
Jorge A. Perez-Peraza (Instituto de Geofisica, UNAM, C.U., Coyoacán, México, D.F. Mexico)
In series: Space Science, Exploration and Policies
In series: Physics Research and Technology
Hardcover: 978-1-62618-998-0. $230.00.
There is the conjuncture that 2012 is a special year in the history of physics, that cannot go unobserved without celebration: 100 years of cosmic ray discovery, the 75th anniversary of Muon discovery and 70 years of the discovery of relativistic solar particles (Ground Level Enhancements). Several symposiums have been held in this regard, among which can be mentioned is that of the one held in Pollau, Austria in May 2012. There is need of a book that pays homage to these historical discoveries. The aim of this book is to collect some typical papers written for researchers of the international cosmic ray community that many scientists and students would like to have in their libraries. The main market for this book are universities and research institutes throughout the world, and mainly in countries where there is an old tradition in cosmic ray research: Europe, USA, México, Canada, East Europe (mainly Russia), Japan, Australia, China, etc. It should also be of interest in scientific societies, professional organizations, or other groups relevant to the several fields of particle physics: e.g., the Victor F. Hess Society and the European Physical Society/History of Physics Group (EPS/HoP), COSPAR, IUGG, American Geophysical Union, Unión Geofisica Mexicana, and others.

Recent Advances in Topography Research
Jan Buytaert (Antwerpen-Berchem, Belgium)
In series: Earth Sciences in the 21st Century
Hardcover: 978-1-62618-840-2. $175.00.
The book at hand covers many of the different classes of topography profilometry, and will give the reader an overview of different aspects of current profilometric methods. The intent is to show the possibilities, the state-of-the-art and some recent advances in the field by bringing together a non-exhaustive but diverse selection of profilometric methods. Some methods are fresh and unique like the one pixel profilometer or the sampling moiré method. Others are more consolidated, like Fourier transform profilometry but now in real-time, and even commercially available, like the newest time-of-flight cameras for 3D vision. The techniques in this book range from projection moiré to binary dithering pattern projection to areal surface mapping. They include an endoscopic implementation to an
omnidirectional vision system and techniques using Fourier analysis to time-of-flight principles. Also, techniques applicable in biomeicine to engineering applications. Even from atomic force microscopy to optical coherence tomography, which both used as topographical means. Finally, some in-depth specialist reviews are included of new profilometric methods or new commercial profilometric devices. The book contains 12 chapters from selected authors from all over the world considered authorities in their field. The individual chapters are written to give a thorough introduction to each respective topographic method, and include a lot of background and abundant references, so that the book serves as a good introduction or reference.

The Space Education Phenomenon at NASA, Brazil and Beyond
Norma Teresinha Oliveira Reis (Brazilian Education Ministry)
Softcover: 978-1-62618-188-5. $150.00.
This publication explores the ‘space education phenomenon’, and how it contributes to STEM betterment by motivating students and facilitating teaching. Contents were grouped in three main sections: (a) space and education, (b) space education at NASA, and (c) state-of-the-art practices in space science education at NASA and the Brazilian space agency. The book is a reference to educators, STEM education specialists and project managers, researchers, and the general public. Educators can identify possibilities to enrich STEM classes. Researchers in STEM education and/or space education will find here analyses of this historically recent area of investigation. This book is an important resource for project managers, as they could access several implementation models on space education at NASA, Brazil and beyond.

SPACE SCIENCE

Clues for the Space Analysis of Chirality
A. Buch and C. Freissinet (Ecole Centrale Paris, France), R. Sternberg (Université Paris XII, Créteil, France) C.A. Jelinek (The Johns Hopkins University School of Medicine, Baltimore, MD, USA)
Hardcover: 978-1-61761-331-9. $85.00.
The identification of extrarectal chiral compounds could provide compelling evidence to prove that extrarectal environment such as Mars have supported some form of life. This book reviews why the study of chirality has been integrated into space exploration and experimentation and what this study might be achieved within the context of space missions. Also discussed herein is the analytical methods used on past space missions and a summarization of possible future methods planned to facilitate the detection of chirality for future expeditions.

TRANSPORTATION

Motorcycle Safety: Conspicuous Lighting Studies
Jeffrey N. Gardiner
Hardcover: 978-1-62948-608-6. $110.00.
The annual number of motorcycle rider fatalities in the United States increased from 2294 in 1998 to 5290 in 2008 (National Highway Traffic Safety Administration, 2010). Many multi-vehicle motorcycle crashes involve right-of-way violations where another vehicle turns in front of, or crosses the path of an on-coming motorcycle. Improving the front navigation of motorcycles with auxiliary forward lighting may reduce these types of crashes. This book describes some recent studies sponsored by NHTSA on motorcycle conspicuity.

Traffic Analysis Tools and Methods: Elements and Consistent Application Guidance
Cassandra Berry
Entering the 21st century, the Nation’s transportation system has matured; it only expands its infrastructure by a fraction of a percentage each year. However, congestion continues to grow at an alarming rate, adversely impacting our quality of life and increasing the potential for accidents and long delays. These are expected to escalate, calling for transportation professionals to increase the productivity of existing transportation systems through the use of operational improvements. In order to assess the potential effectiveness of a particular strategy, it must be analyzed using traffic analysis tools or methodologies. The objective of this book is to assist traffic engineers, planners, and traffic operations professionals in the selection of the correct type of traffic analysis tool for operational improvements.

U.S. Bridge Conditions and Long-Term Bridge Performance: A Primer
Ruby L. Lacey
Softcover: 978-1-63117-486-5. $52.00.
The United States has approximately 607,000 bridges on public roads subject to the National Bridge Inspection Standards mandated by Congress. The sudden catastrophic failure of the I-5 Interstate System bridge in Washington State has raised policy concerns in Congress regarding the condition of the nation’s transportation infrastructure in general, and in particular the federal role in funding, building, maintaining, and ensuring the safety of roads and especially bridges in the United States. This book discusses highway bridge conditions. It then continues to provide information on a Long-Term Bridge Performance (LTBP) Program that is intended to provide a comprehensive definition of bridge performance that will be the foundation for carefully designed research studies in the LTBP Program.

Vehicle-to-Vehicle Technologies for Intelligent Transportation Systems: Development, Challenges and Security Proposals
Douglas Lacey
Softcover: 978-1-63117-045-4. $52.00.
The development of vehicle-to-vehicle (V2V) technologies has progressed to the point of real world testing, and if broadly deployed,
Science and Technology

they are anticipated to offer significant safety benefits. Efforts by the U.S. Department of Transportation (DOT) and the automobile industry have focused on developing in-vehicle components such as hardware to facilitate communications among vehicles, safety software applications to analyze data and identify potential collisions, vehicle features that warn drivers, and a national communication security system to ensure trust in the data transmitted among vehicles. This book focuses on the V2V technologies expected to offer safety benefits as well as the technical description and identification of policy and institutional issues.

VIROLOGY

Weeds as an Alternate Host of Geminivirus
Rajneesh Prajapat and Rajarshi Kumar Gaur
(Department of Science, Faculty of Arts, Science and Commerce, Mody Institute of Technology and Science, Lakshmangarh, Rajasthan, India)
In series: Virology Research Progress
Hardcover: 978-1-62948-419-8. $85.00.
e-book: 978-1-62948-431-0. $85.00.

The book represents basic information about viral-caused and viral-like diseases in many weeds. Many scientific reports have demonstrated that weeds serve as a reservoir or alternative hosts for geminivirus genera (e.g., Begomovirus) for survival and spread in the absence of main crops. This book represents a tip of the iceberg of the diversity of begomoviruses in weeds. The recognition that geminivirus strains are capable of rapidly diverging through multiple mechanisms, underscores the need for accurate molecularly based methods that permit detection and tracking of biologically significant variants. Molecular approaches must combine knowledge of biology, ecology and the ability to monitor both conserved sequences and specific sites, most likely to undergo alteration with phylogenetic predictions to facilitate accurate identification and tracking of begomovirus variants and to also recognize new or resurgent viruses. Establishing databases of baseline sequences for extant viruses will permit future comparisons in establishing and interpreting disease patterns and associated trends for vector populations. With the development of reliable computational recombination detection tools and an increasing number of available genome sequences, many studies have reported evidence of recombination in a wide range of virus genera. The book also focuses on the first geminivirus database (GVDB) that contains biotic, molecular and in silico information which will permit rapid and accurate begomovirus identification and the selection of relevant viral species for the development of disease resistance/management strategy to the geminiviruses specific to individual crop production areas. To close, there is one chapter on the international and national status of geminivirus infection in various host weeds. Furthermore, the book’s heart discusses the most recent cutting-edge of research that makes this book essential reading for everyone, from researchers to scholars to students, working with molecular and computational aspects of geminivirus research as well as scientists already familiar with the area.
SOCIAL SCIENCE
Boko Haram: The Emerging Nigerian Terrorist Threat

Samuel T. Whitlock

In series: African Political, Economic, and Security Issues

Hardcover: 978-1-62948-105-5. $110.00.

Two years on from the bloody and destructive suicide attack on a United Nations (U.N.) facility in Abuja, Nigeria, the Nigerian terrorist organization Boko Haram continues to pose a threat to both the United States and our allies. Since that attack, Boko Haram has received increased international attention, has carried out near-daily attacks throughout much of Nigeria, and has taken part in operations in other parts of West Africa. They remain a lethal and growing threat to the people of Nigeria, the international community, Americans in the region, and potentially the United States Homeland. This book discusses Boko Haram's growing and emerging threat to the U.S. Homeland and provides statements from a hearing on "Boko Haram: emerging threat to the U.S. homeland."
This book discusses the crisis in Mali in further detail; provides a testimony from a hearing on U.S. interest and the international response to the crisis; and includes the roots of conflict and challenges to stability.

Morocco and the Conflict in Western Sahara: Background and Analyses

Daniel R. Cooper

In series: African Political, Economic, and Security Issues

In series: Global Political Studies


 Hardcover: 978-1-62808-557-0. $110.00.

At a crucial crossroads between Africa and Europe, the Mediterranean and the Atlantic, and the "Arab World" and the West, Morocco has long had a special place in U.S. diplomacy and strategic planning. Since the terrorist attacks of September 11, 2001, Morocco's importance to the United States has only risen, and the more recent uncertainties of the Arab Spring and Islamist extremism in Africa have further increased the strategic value and operational relevance of the Moroccan-American alliance. Yet, one of the pillars of the legitimacy of the Moroccan monarchy, its claim to Western Sahara, remains a point of violent contention. Since the Spanish withdrawal and subsequent occupation of the territory by Morocco in 1975, the United States has poured many millions of dollars in material, training, and intelligence into the Moroccan armed forces. But the latter has failed to inflict a decisive defeat on the Polisario Front, the Western Saharan organization whose goal is full independence for Western Sahara. This book provides an historical analysis of the conflict in Western Sahara, stressing developments of relevance to the U.S. Army and to American and regional strategic interests since Morocco's independence in 1956.

Nigeria: Conditions, Issues and U.S. Relations

Roland A. Pollak

In series: African Political, Economic, and Security Issues

2013. 175 pp.


The U.S. government considers its relationship with Nigeria, Africa’s largest producer of oil and its second largest economy, to be among the most important on the continent. Nigeria is Africa’s most populous country, with more than 170 million people, roughly divided between Muslims and Christians. U.S. diplomatic relations with Nigeria, which is regularly among the top six suppliers of U.S. oil imports, have improved since the country made the transition from military to civilian rule in 1999, and Nigeria is a major recipient of U.S. foreign aid. The country is an influential actor in African politics, having mediated disputes in several African countries and ranking among the top five troop contributors to U.N. peacekeeping missions. Nigeria is a country of significant promise, but it also faces serious social, economic, and security challenges that have the potential to threaten the stability of both the state and the region, and to affect global oil prices. The country has faced intermittent political turmoil and economic crises since independence. Political life has been scarred by conflict along ethnic, geographic, and religious lines, and corruption and misrule have undermined the authority and legitimacy of the state. This book examines current conditions, issues and U.S. relations with Nigeria, with a focus on human rights; religious freedom; and economic and business affairs.

Nigeria: Instability, Implications, and U.S. Policy

Todd B. Griffith

In series: African Political, Economic, and Security Issues


 Hardcover: 978-1-62948-694-9. $52.00.

Nigeria is one of the pivotal states of Africa and is extremely important to U.S. diplomatic and economic interests on that continent. However, Americans’ general lack of knowledge or misunderstanding of Nigeria undercuts our interactions with this crucial state to the detriment of both sides. Nigeria is considered a key power on the African continent, not only because of its size, but because of its political and economic role in the region. In the southern Niger Delta region, local grievances related to oil production in the area have fueled simmering conflict and criminality for over a decade. This book focuses on the government’s efforts to negotiate with local militants which have quieted the restive region, but the peace is fragile and violent criminality continues.

Somalia: Perspectives on Challenges and Lessons

Merlin Kennedy

In series: African Political, Economic, and Security Issues


 Hardcover: 978-1-63117-490-2. $52.00.

For more than 2 decades, Somalia has been the prime example of a collapsed state. For almost a generation, Somalia has been a byword for state failure, defying the combined efforts of diplomats and soldiers to restore some semblance of order, to say nothing of a functional national government. In the absence of an effective sovereign, the country is a backdrop for multiple humanitarian crises. The purpose of this book is to provide insight on the state collapse, insurgency, and counterinsurgency of Somalia.


Howard Sarisohn and Jonathan Cohen

In series: African Political, Economic, and Security Issues


 Hardcover: 978-1-62948-299-6. $52.00.

In 2000, Congress passed the African Growth and Opportunity Act (AGOA), a U.S. trade preference program, in order to help spur market-led economic growth and development in sub-Saharan Africa (SSA) and deepen U.S. trade and investment ties with the region. Since its enactment, Congress has amended AGOA five times, making some technical changes and renewing the trade preferences through September 30, 2015. According to the Assistant U.S. Trade Representative, (USTR) for Africa, “AGOA is the cornerstone of America’s trade and investment policy with sub-Saharan Africa.” Economic conditions in Africa, however, have changed considerably since Congress passed the initial AGOA legislation. Annual real gross domestic product (GDP) growth in SSA was nearly a full percentage point lower than global GDP growth (2.3% vs. 3.2%) in the decade leading up to AGOA’s passage (1990-2000). Over the last ten years, however, SSA’s growth averaged 5.7%, two points higher than the 3.7% world average. While the region still contains many of the world’s poorest countries and faces significant economic challenges, some observers and policymakers argue that changing economic conditions warrant an evolution in U.S. policy toward SSA, focused more strongly on private sector investment and increasing two-way trade. In recent years, SSA’s growing economic potential and abundant natural resources have attracted other foreign investors, including state-
The Power of Oil in Angola
José-León García Rodriguez, Francisco J. García Rodríguez and Carlos Castillo Gutiérrez (University of La Laguna, Canary Islands, Spain)

In series: African Political, Economic, and Security Issues
2013. 143 pp.
Hardcover: 978-1-62417-162-8. $150.00.

Angola is the seventh largest country in Africa, divided in 18 provinces and situated in the southwest of the continent, in the tropical zone of the southern hemisphere. It has a wealth of natural resources, fertile albeit scarce farming lands, rich mineral deposits of diamonds, iron, bauxite, gold, manganese, uranium and natural gas, in addition to a considerable volume of oil reserves with a highly valuable production.

Oil exploration in Angola was initially carried out onshore by state-owned company Sonangol, but later on production moved offshore, to the continental platform - far from war operations - and is currently carried out by numerous foreign companies, both European and North American, such as British Petroleum, Fina Total, Shell, Chevron and Texaco, Exxon Mobil, Statoil and AGIP, by means of oil rigs authorized by the State through production sharing agreements. This concession system has increased the search for oilfields, which in turn has enabled findings and crude oil production to increase in the last few decades, going from some 100,000 barrels per day in 1976 to 2.1 million barrels per day in 2009, which is 2.5% of world oil production at present.

AGING
Global Aging, China and Urbanization
Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)

In series: Social Perspectives in the 21st Century
Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2013. 61 pp.
Softcover: 978-1-62808-452-8. $52.00.

This original book explores the nature and extent of global aging in contemporary society. It examines the impact of population aging on different continents in the world. The book then moves its attention to exploring aging in China. In particular, it reviews the implications of urbanization for Chinese older people. It draws from social theory to illuminate a perceptual framework to examine rapid social change.

Long-Term Services and Supports for the Elderly: Elements, Trends, and Financing
Lars Rudberg

In series: Aging Issues, Health and Financial Alternatives
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-62808-788-8. $110.00.

Long-term services and supports (LTSS) refer to a broad range of health and health-related services and supports that are needed by individuals over an extended period of time. The need for LTSS affects persons of all ages and is generally measured by limitations in an individual’s ability to perform daily personal care activities (e.g., eating, bathing, dressing, walking) or activities that allow individuals to live independently in the community (e.g., shopping, housework, meal preparation). Most individuals prefer to be cared for in their own homes with the assistance of informal providers such as family members or friends, if available. The most recent published data estimating the number of Americans in need of LTSS indicate that about 10.9 million individuals living in the community need LTSS, or 4.1% of the community-resident population. It was estimated another 1.8 million individuals needing LTSS live in an institutional setting, such as a nursing home. LTSS include a variety of services and supports to assist an individual in maintaining an optimal level of functioning and/or improving his or her quality of life. Examples include a home health aide administering medication, a contractor-building a wheelchair ramp onto a home, or a nursing facility where a person resides. LTSS also vary in cost and intensity, depending on the individual’s underlying conditions, the severity of his or her disabilities, the setting in which services are provided, and the caregiving arrangement (i.e., informal care versus formal care). This book provides an overview of LTSS, including who needs LTSS, how need for LTSS is determined, and how much LTSS costs. The book also provides information on who the primary LTSS payers are, how much they spend, and what types of services are purchased.

Power and Aging: A Macro and Micro Analysis
Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)

In series: Social Perspectives in the 21st Century
Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2013. 64 pp.
Softcover: 978-1-62948-534-8. $52.00.
Agriculture and Trade: International Perspectives
Dragan Miljkovic (North Dakota State University)
In series: Agriculture Issues and Policies
Hardcover: 978-1-62948-975-9. $150.00.
Agricultural trade and development is a backbone of international trade. It includes agricultural trade patterns, commercial policy, international institutions such as WTO, Tariff and non-tariff barriers in international trade, exchange rates, biotechnology and trade, agricultural labor mobility, land reform, environment and the areas and issues spanning these areas. This new book brings together leading research and issues in this fundamental field.

Manure Management: Select Research and Legal Issues
Sheila E. Corby
In series: Agriculture Issues and Policies
Hardcover: 978-1-62948-874-5. $110.00.
e-book: 978-1-62948-879-0. $110.00.
In 2003, EPA introduced revised Clean Water Act regulations to better protect surface waters from nutrients from concentrated animal feeding operations (CAFOs). When applying manure to crop or pasture land (the primary disposal method), CAFOs now must follow a nutrient management plan that specifies a manure application rate that minimizes the threat to water quality. This book focuses on managing manure to improve air and water quality; trends and developments in hog manure management; and current laws and legislative issues with animal waste and hazardous substances.

Timber Industry in the Dakotas: Output and Use Assessments
Janice Segal
In series: Environmental Remediation Technologies, Regulations and Safety
2014. 79 pp.
Softcover: 978-1-63117-161-1. $52.00.
In 2009, there were 13 primary wood-processing mills in North Dakota, 4 more mills than in 2003, and there were 23 active primary wood-processing mills in South Dakota, 2 fewer mills than in 2004. This book focuses on the timber industry in Dakotas and provides an assessment of timber product output and use in 2009.

U.S. Farms: Income Trends and Typology Updates
Dawson P. Haynes
In series: Agricultural Research Updates
2013. 94 pp.
Softcover: 978-1-62948-691-8. $52.00.
e-book: 978-1-62948-692-5. $52.00.
According to USDA’s Economic Research Service (ERS), the national net farm income, a key indicator of U.S. farm well-being, is forecast at a record $121 billion in 2013, up 6% from last year, and about $3 billion above 2011’s previous record. In addition to record net farm income, farm wealth is also at record levels. This book discusses the USDA’s Economic Research Service (ERS), which originally developed a farm typology that has been used over the years extensively in ERS publications and USDA analyses to help clarify the distributional impacts of policy, market, and technological developments.

Agriculture

Social Behavior: Evolutionary Pathways, Environmental Influences and Impairments
Paulina Watson
In series: Animal Science, Issues and Professions
Hardcover: 978-1-63117-327-1. $150.00.
Social behavior has broad implications for the survival and reproduction of an organism. Social behaviors often reflect rather complex mechanisms. Through a variety of interactions, individuals establish social relationships (dominant/subordinate, friend/foe, potential mate/mating partner, kin/non-kin). In some cases this may require aggressive physical altercations and more passive interactions.
such as ritualistic competitions, behavioral sequences, behavioral postures, and other forms of signaling. Social interactions are dependent on context and environmental influences. Understanding the functional significance and mechanisms driving various social behaviors will require empirical comparative studies with careful consideration of environmental factors. This book provides information on the idea of social behavior in different animals being affected by evolution and the environment.

**ART**

**Visual Artists and Resale Royalties: Considerations, Copyright and the Droit de Suite Issue**
*Valentina Poland*

In series: *Fine Arts, Music and Literature*

Hardcover: 978-1-63117-302-8, $195.00.

Artists Rights Society (ARS) is an organization that represents the intellectual property rights, including the copyrights, of more than 50,000 visual artists worldwide. It has an American repertory, which includes Mark Rothko, Willem de Kooning, Andy Warhol, Georgia O’Keeffe, and Jacob Lawrence, to name some of the prominent members. However, the overwhelming majority of ARS members are lesser known artists who have nevertheless devoted their lives to this profession. This book provides an updated report examining the issues surrounding visual artists and resale royalties in the United States, and also is an adjunct to the Office’s 1992 report, Droit de Suite: The Artist’s Resale Royalty, and takes into account changes in law and practice over the past two decades. The book provides further detail on resale royalties, the Visual Arts and Galleries Association (VAGA), and the Equity for Visual Artists Act of 2011.

**ASIA**

**Association of Southeast Asian Nations: Investment Climates**
*John Normand and Arthur Stapleton*

In series: *Asian Political, Economic and Security Issues*

2013. 279 pp.
Hardcover: 978-1-62808-532-7, $135.00.

This book provides an overview of the Association of Southeast Asian Nation (ASEAN) members and their investment climates. The economics and business affairs of the following countries are discussed: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar (Burma), Philippines, Singapore, Thailand, and Vietnam.

**Bangladesh: Conditions, Issues and U.S. Relations**
*Gregory P. Davis*

In series: *Asian Political, Economic and Security Issues*

Softcover: 978-1-63117-003-4, $52.00.
e-book: 978-1-63117-004-1, $52.00.

Bangladesh (the former East Pakistan) is an Islamic-majority nation in South Asia, bordering the Bay of Bengal, dominated by low-lying riparian zones. It is the world’s eighth-largest country in terms of population. U.S. policy toward Bangladesh emphasizes support for political stability and democracy, development, and human rights. The United States offers economic assistance to Bangladesh, and has military-to-military ties that include cooperation in multilateral peacekeeping. Bangladesh is also of interest to the United States for the role it plays in the larger geopolitical dynamics of South Asia. This book focuses on the political and strategic developments and United States interests in Bangladesh; provides a background on the Bangladesh apparel factory collapse; discusses the Bangladesh 2012 human rights report as well as the 2012 international religious freedom report; and ends with the 2012 investment climate statement for Bangladesh.

**Burma: Human Rights, Political Reform Efforts and U.S. Sanctions**
*Mike D. Powell*

In series: *Asian Political, Economic and Security Issues*

2013. 197 pp.
Hardcover: 978-1-62948-548-5, $110.00.

An accurate and objective assessment of the status of human rights, civil unrest, and political reform in Burma is critical to congressional oversight of the Obama Administration’s conduct of U.S. policy towards the country, as well as any congressional examination of U.S. policy towards Burma. The Obama Administration and many other observers have focused their analysis on the apparent progress that has been made since Burma’s military junta transferred power to a new, quasi-civilian government in 2011. These analyses highlight the country’s political reforms and human rights improvements, while acknowledging that the situation remains fragile and reversible. This book examines the current situation in Burma from the implicit perspective shaped by U.S. laws setting policy toward Burma, and discusses the challenges of responding to reforms in a nation in political transition which has gone only part way to dealing with human rights abuses. In general, these laws establish a set of standards or thresholds to achieve before the sanctions are lifted and bilateral relations are normalized. Based on the criteria enumerated in these laws, this book reviews: (1) prospects for an end to internal inter-ethnic conflict and national reconciliation, which appear slim in the short-run; (2) the critical political forces in Burma, which do not currently share a common vision or path towards a democratic civilian government; and (3) the ongoing problem of human rights abuses in Burma.

**Cambodia: Conditions, Issues and U.S. Relations**
*Gabriel Vonck*

In series: *Asian Political, Economic and Security Issues*

Softcover: 978-1-62808-915-8, $52.00.
e-book: 978-1-62808-916-5, $52.00.

The United States and the Kingdom of Cambodia have been expanding their once-limited ties for a number of years, although U.S. concerns about Cambodia’s human rights record still limit the scope of the bilateral relationship. The Obama Administration has taken steps to broaden engagement with Cambodia, partly in response to China’s growing diplomatic and economic influence in Cambodia and the Lower Mekong Delta region. U.S. interests in Cambodia include promoting development, trade and investment, regional security, civil society, democracy, and human rights. U.S. military engagement with Cambodia has increased as well. These include naval port visits, military assistance, and joint exercises related to international peacekeeping, humanitarian activities, and maritime security. A key challenge for U.S. policy toward Cambodia lies in balancing efforts to engage the Kingdom on many fronts while promoting democracy and human rights. This book provides an overview of current issues, conditions and U.S. relations with the Kingdom of Cambodia.

**China’s Political System: Features, Institutions, and Leaders**
*Camelia L. Jacoby*

In series: *China in the 21st Century*
This book is designed to provide Congress with a perspective on the contemporary political system of China, the only Communist Party-led state in the G-20 grouping of major economies. China’s Communist Party dominates state and society in China, is committed to maintaining a permanent monopoly on power, and is intolerant of those who question its right to rule. Nonetheless, analysts consider China’s political system to be neither monolithic nor rigidly hierarchical. Jockeying among leaders and institutions representing different sets of interests is common at every level of the system. This book also provides a concise, chart- and table-based introduction to China’s political institutions and current leaders. The book is intended to assist Members and their staffs seeking to understand where political institutions or individuals fit within the broader Chinese political system and to identify which Chinese officials are responsible for specific portfolios.

Effects of U.S.-Korea Free Trade Agreement on Small and Medium-Sized Enterprises
Brian M. Sullivan
In series: Asian Political, Economic and Security Issues
In series: Trade Issues, Policies and Laws
Softcover: 978-1-62808-843-4. $52.00.
e-book: 978-1-62808-844-1. $52.00.
The U.S.-South Korea Free Trade Agreement (KORUS FTA) is the second-largest U.S. FTA (next to NAFTA). South Korea is the seventh largest trading partner of the United States, and the United States is South Korea’s third-largest trading partner. The KORUS FTA covers a wide range of trade and investment issues and, therefore, could have substantial economic implications for both the United States and South Korea. KORUS FTA encompasses a range of bilateral economic activities: trade in manufactured goods, agricultural products, and services; foreign investment; government procurement; intellectual property rights; and worker rights and environment protection, among other issues. The United States and South Korea entered into the KORUS FTA as a means to further solidify an already strong economic relationship by reducing barriers to trade and investment between them and to resolve long-standing troublesome economic issues. The United States specifically sought increased access to South Korean markets for agricultural products, services, and foreign investment. For South Korean leaders, the KORUS FTA is a mechanism to promote reform in its own economy and also to gain a competitive advantage in the U.S. market for autos and other manufactured goods. This book examines the provisions of the KORUS FTA in the context of the overall U.S.-South Korean economic relationship, U.S. objectives, and South Korean objectives. It also examines some of the issues that have arisen during its implementation.

Politics, Policy and People: Irrigation Governance in a South Indian State
Bala Raju Nikku (Dakshinmurthy Marg, Mitra Park, WN-7, Kathmandu, Nepal)
In series: Agricultural Issues and Policies
Hardcover: 978-1-62948-833-2. $150.00.
Major canal system commands require huge investments and human resource to maintain them. Governments are increasingly failing in allocating the huge budgets required for the system maintenance and hence transferring the management to the user groups is an alternative solution to avoid the system decay and increased user participation results in better results in achieving production, efficiency and equity. The reforms are aimed to bring changes in both control and management of the canal water. The book, based on a PhD research, presents an in-depth understanding about the reform policy process and implementation in the state of Andhra Pradesh, a south Indian State. The main focus is to study the policy process of reforms (evolution and implementation) in irrigation sector in the State of Andhra Pradesh. The aim of the thesis is to contribute to the understanding of policy processes. The books central questions would be: How have the reforms in irrigation sector evolved and implemented? What is role of stakeholders in shaping the policy? What are the implications of the reform policy on system rehabilitation, access to canal water and viability of user organisations? The findings suggest there has been changes in the irrigated acreage that are significant. But the claims of the state are clearly exaggerated. With the improvements in the irrigation infrastructure and maintenance access to water has been increased to the head reach farmers, the middle experiences some improvements, the tail reaches continues to have problems of irrigation assurance, reliability, quantity and time. The user associations have remained as implementing agencies rather than acting as the autonomous bodies. The quality of works in general improved but the sense of ownership was not cultivated among the users. The involvement of politics is evident. Policymaking in this book is argued as a political process. Different actors and their power interactions have played a crucial role in shaping the policy and implementation.

The Rise of China’s Auto Industry and U.S.-Chinese Motor Vehicle Trade
Samantha Hutchins
In series: China in the 21st Century
Softcover: 978-1-62948-931-5. $52.00.
One of the most significant developments in China’s industrialization is the growth of China’s automotive industry, which is a catalyst for many other linked sectors of its economy. China’s focus on its auto industry and the supporting infrastructure and development patterns could have significant implications for global auto manufacturing and trade. This book discusses issues and implications of China’s auto sector’s development and policies; provides an overview and issues of the United States-Chinese motor vehicle trade; provides trends in United States vehicle exports; and discusses the current state of the United States automotive parts market.

BOTANY
Alfalfa: Ecology, Production and Disease Management
Marie L. Hirsh
In series: Botanical Research and Practices
2014. 121 pp.
Softcover: 978-1-62948-752-6. $72.00.
In this book, the authors present current research in the study of the ecology, production and disease management of the Alfalfa plant. Alfalfa appears to be one of the most interesting of the green crops, since it has high protein content and belongs to a group of major forage crops due to this high productive potential and excellent quality of green biomass. It is an important leguminous crop grown in many countries and has several important roles in different aspects of agriculture which include livestock feed and soil conservation. The authors of this book also explore the biological nitrogen fixation, symbiosis, which contributes greatly to the nitrogen nutrition source on earth.
Moss: Classification, Development and Growth and Functional Role in Ecosystems

Jorma Mohamed

In series: Botanical Research and Practices

Hardcover: 978-1-63117-396-7. $150.00.

Terrestrial moss communities are widely distributed among the Earth’s major biomes, including equatorial to polar latitudes. Because of their high productivity, relatively dense vegetative structure, and alteration of the substratum through deposition of organic matter, moss communities often support rich and diversified microbial communities. This book examines microbial communities in terrestrial moss in further detail. It also discusses terrestrial mosses as trace element bioindicators; moss bioreactors; the ecological diversity and application for agricultural microbiology; small scale area investigation for heavy metals air pollution; biomonitoring of atmospheric pollution using mosses; the impact of forest decline on fine-scale vertical distribution of epiphytic bryophytes; and the use of mosses in criminal investigations.

Sunflowers: Growth and Development, Environmental Influences and Pests/Diseases

Juan Ignacio Arribas (Electrical Engineering Department, Univ. Valladolid, Spain)

In series: Botanical Research and Practices

2014.

This book presents a broad number of recent discoveries, advances and important results concerning sunflower (Helianthus annuus) crops and its related fields, with emphasis on the detailed study of several diseases and pests that can affect sunflowers (production, water resources needed, economy impact) in different regions of the globe, including Russia, both North and South America, Africa, India and Europe. We are all well aware of the increasing importance, as well as the economic impact that these plants have reached in recent years, not only in the food industry but also in the western energy market, with the increasing use of sunflower oil as a natural energy resource for biodiesel and biofuel. Apart from the interesting recent advances, results and conclusions presented in every chapter, plenty of visual and graphical content comprised of tables, charts, graphs, pictures and high quality detailed photographs and images showing different issues and problems regarding sunflower crops are also included. The manuscript chapters have been authored by experts in the field and in addition all of them underwent a stringent peer review process by expert reviewers to assure a high final scientific quality.

**BUSINESS**

Advances in Business and Management. Volume 6

William D. Nelson

In series: Advances in Business and Management

Hardcover: 978-1-62948-730-4. $120.00.
e-book: 978-1-62948-731-1. $120.00.

This book presents research in the field of business and management from around the world. This book provides a meta-theoretical framework for understanding the nature of organisational wisdom based on learning traditions. The authors of this book also draw some guidelines that can be useful in approaching the concept of the business model in a well-structured way, providing an in-depth investigation of the various research streams and perspectives. Other chapters review the contemporary corporate governance framework in Chinese listed firms after the substantial financial reform in 2005; statistical tools developed to measure latent traits widely used in education and psychology, called Item Response Theory; the concept of brand promise and what it means to the consumer stakeholder; tourism consumption patterns in terms of economic development; and deterministic and stochastic business cycle models that incorporate consumption in specific ways.

Asia and Europe Facing the Technological Revolution

Bertrand De Montluc (Sciences Po Business School, Paris, France)

In series: Business, Technology and Finance

2013. 84 pp.
Softcover: 978-1-62808-156-5. $52.00.

In the last ten years, three main information and communication advanced technologies (ICT) linked to spectacular scientific progress in the computer sciences, optoelectronics and electronics have intersected: GSM technology (mobile phones), satellite TV, and the world wide web. The effects of these new technological breakthroughs are presented in this book, with a focus on understanding the economic, social, and environmental influence of science and technology as they affect our globalized world. An examination of how science and innovation advances impact the future of developed as well as developing societies, particularly in Asia and Europe, is discussed. Also presented in this book are how Asian nations and European states address these challenges, assess the stakes, organize themselves, create initiatives, invest, and promote regional or international co-operation.

Banking: Performance, Challenges and Prospects for Development

Janice P. Simmons

In series: Banking and Banking Developments

2014. 78 pp.
Softcover: 978-1-62948-897-4. $69.00.

There is ample literature that argues commercial banks within a country and across countries are in economic harmony when it comes to their capital/asset ratio response to changes in such economic determinants as cost, loans, and profitability. This book focuses on answering the question if European banks are in economic harmony. It continues with discussing banking employment in the early twenty-first century and ends with a national cohort study on posttraumatic stress symptoms in individuals following a bank robbery.

Best Human Resource Management Practices and Firm Performance in the Pacific Island Countries

Suwastika Naidu and Anand Chand (School of Management and Public Administration, Faculty of Business and Economics, University of the South Pacific, Suva, Fiji Islands)

In series: Business Economics in a Rapidly-Changing World

Hardcover: 978-1-62808-488-7. $175.00.
e-book: 978-1-62948-212-5. $175.00.

The main objective of this research is to develop the ‘best HRM practices and firm performance model for the PICs’ and test it in three selected PICs (Fiji, Samoa and Tonga). Based on the limitations of the four major theories of HRM and SHRM, this book has extended the four major theories of HRM and SHRM; namely, the Universalistic perspective, Contingency Perspective, Configurational Perspective and Contextual Paradigm. The findings of this book showed that the Contingency Perspective, Configurational Perspective and Contextual
Paradigm all apply to the luxury hotels and upmarket hotels in Fiji, Samoa and Tonga. A new perspective of HRM and SHRM has emerged from the ‘best HRM practices and firm performance model for the PICs’ that have been tested in this book. This new perspective of HRM and SHRM is named as ‘Interactive Interdependent Contextual Perspective’. There are three reasons for naming it that. This new perspective of HRM and SHRM is largely relevant to the PICs rather than rich developed countries (USA, UK and Japan) and large developing countries (China and India). The reason for the limited applicability of the this perspective is that this one recognises that HRM practices in the PICs cannot influence the internal environmental factors and external environmental factors unique to the PICs. For example, the research findings of this book show that internal environmental factors and external environmental factors unique to the PICs moderate rather than mediate the relationship between systems of best HRM practices and HRM outcomes.

Bidding: Types, Strategies and the Impact of Irrationality
Ming K. Lim (University of Derby, UK)
In series: Business Issues, Competition and Entrepreneurship
In series: Business Economics in a Rapidly-Changing World
Hardcover: 978-1-62808-050-6. $150.00.
This is a book about bidding, a hugely important topic situated at the intersection of business, computer science and mathematics. As more and more business-to-business commerce is conducted via the Internet, an expert understanding of how to bid optimally in different settings, how to deal with limited information and how to adapt to the behavior of other bidders has the potential to provide businesses with a significant advantage when participating in online marketplaces. However, bidding is a complex, interdisciplinary area with an expansive literature base which many may find daunting. This book aims to provide those new to the area with an accessible and thorough grounding in the core concepts of the field as well as in-depth knowledge of cutting-edge bidding-based research. For those with experience in the area of bidding, this book will help to solidify their understanding and ensure that their knowledge of recent work in the field is both current and comprehensive. This book covers a wide variety of bidding mechanisms including combinatorial auctions, reverse auctions and multi-bilateral negotiations; it also covers bidding strategies in supply chain management and electricity markets as well as the concepts of e-procurement, bid selection models, bidder irrationality models, multi-agent systems and Minority Games. This book is a valuable companion for anyone wishing to learn more about this exciting area of research, including students, academics and businesses interested in gaining a competitive advantage in the digital economy.

Business Ethics in the 21st Century: Stability and Change
Alan E. Singer (Appalachian State University, NC, USA)
In series: Business Issues, Competition and Entrepreneurship
In series: Ethical Issues in the 21st Century
Hardcover: 978-1-62808-590-7. $150.00.
This is the fifth book by Professor Alan E. Singer on business ethics and strategy. This book emphasizes aspects that are thought to be most likely to rise to prominence in the years to come. These include ecological-understandings at the conceptual level and the participation at the practical level in a distributed system of global governance system that strives to uphold all of the human goods, including the positive and negative freedoms, but in a reasonably balanced way. In a section on justice and politics, several issues related to social and environmental justice are duly viewed from both a theoretical perspective and from a corporate (strategic) perspective. A further section focuses upon the governance and ethical implications of what James Martin (founder of the ‘21st Century School’ at the University of Oxford) has called the ‘technologies of sorcery’: synthetic biology, nanotechnology, robotics and artificial general intelligence. The final section of the book applies a stable organizing framework to the teaching of ethics in business and politics. This book will be of interest to students and practitioners across a wide spectrum of academic subjects and professions.

Business Trends for the 21st Century: Global Supply Chains and Contribution of Business Services
Andriana Hertha
In series: Business Economics in a Rapidly-Changing World
Hardcover: 978-1-63117-406-5. $110.00.
From automobiles, electronics, and plastics, to software development or clothing, many goods and services today are provided via global supply chains. Instead of carrying out everything from research and development (R&D) to delivery and retail within a single country, many industries are dividing this process into stages or tasks (or “fragments”) that are then undertaken in many countries. Global supply chains have spread widely across both industries and countries. The global restructuring of production has led to faster growth in trade, new patterns of trade, and new benefits from trade. This book examines the evolution, and the effect of global supply chains on the U.S. The book also describes how U.S. manufacturers in the 21st century are taking advantage of services in new and innovative ways to manage global supply chains, cut costs, improve efficiency, and strengthen customer relationships.

Capital Access: Select Research on Funding of Businesses Owned by Women and Minorities
Hope Drexler and Gregory Maine
In series: Business Issues, Competition and Entrepreneurship
Hardcover: 978-1-62948-197-5. $110.00.
This book examines access to capital by young and small businesses. The purpose of the investigation is to gain a better understanding of access to capital by young firms and how the recent economic and financial crisis has affected their access to financial capital, especially among firms owned by women and minorities and firms that are high tech in nature. In light of the key role in small business finance played by financial institutions, this book pays disproportionate attention to access of bank loans. Although these issues are important, research has traditionally been limited by a lack of appropriate data. A primary obstacle has been the absence of representative samples of small businesses that contain detailed descriptions of their access to financing. The primary source of data on this question, the Federal Reserve Survey of Small Business Finances, was discontinued in 2003, and is thus unavailable for studying the effects of the financial crisis on small businesses. A second obstacle has been the tendency of researchers to analyze data on cross sections of small businesses of varying ages and sizes at a single point in time. While the findings from these snapshots have been valuable to scholars and policymakers, they have also been limited. Because they are static, these snapshots do
Entrepreneurship in seri
Kristopher L. Peak and Considerations also for the local communities of various regions in order to be able to monograph consists of becoming unable to accommodate their customers' needs. This collapse. The economic crisis also creates huge problems for the business at the global level, have also collapsed. The economic crisis also creates huge problems for the medium entrepreneurship within countries. The stability of development but also the medium and low social layers and small and crisis disproportionally affects countries with small and revolting in a deep recession. Globalization has in turn contributed to eco
The contemporary economic crisis is one of the biggest in the global economy and has been forcefully applied to the real economy, entering a voluminous and unprecedented trail of data regarding who they are, where they live, and what they own. These changes have fueled the growth of a multi-billion dollar industry that largely operates hidden from consumer view. A wide range of companies known as “data brokers” collect and maintain data on hundreds of millions of consumers, which they analyze, package, and sell generally without consumer permission or input. This book discusses the Data Broker industry in further detail, and also addresses privacy laws applicable to consumer information held by resellers, gaps in the law that may exist, and views on approaches for improving consumer data privacy.

Dexterity in Global Business: A Cross-Dimensional Analysis
Rajagopal (EGADE Business School, Monterrey Institute of Technology and Higher Education, ITESM, Mexico City Campus, Mexico)
In series: Business Economics in a Rapidly-Changing World
In series: Global Economic Studies
Hardcover: 978-1-62948-065-7. $150.00.
e-book: 978-1-62948-070-1. $150.00.
Emerging markets today not only provide multiple goods and services to consumers but also expose their behavior to cross-cultural differences and innovations. The specialization of the production process has also brought cultural changes with business penetrations in the low production skills regions across multiple countries. The international partnering in reference to production technology, co-branding, distribution and retailing may bring high success to the companies of the home countries by increasing market share in the region, as well as augmenting customer value for mutual benefit. Globalization has opened many routes to marketing, including marketing opportunities through the internet and virtual shops. However, amidst increasing market competition, the role of the game are subject to change without notice. In this process, a company must understand thoroughly all the moves of the rival firms from various sources. The locales of business rivalry have to be spotted and identified in order to assess their strengths. An intriguing aspect of the marketplace is that the nature of competition can change over time. A technology, company, or product does not need to remain prey to another forever. Competitive roles can be radically altered with technological advances or with the right marketing decisions. The reduction in tariff barriers, duties and liberalization processes worldwide has stimulated international marketing across regional boundaries. The recent trend of global business shows that multinational companies are following integrated strategies to gain a competitive advantage in the marketplace. This book addresses the impact of globalization in the emerging markets towards enhancing business growth and working out effective market reforms to stimulate overall business growth; and it also serves as a knowledge hub to measure the global-local effects on business in the emerging markets.

Entrepreneurship by University Scientists and The Bayh-Dole Act
Elliot Fairburn and Frank Hallman
In series: Business Issues, Competition and Entrepreneurship
2013, 163 pp.
Hardcover: 978-1-62948-250-7, $110.00.
Most of the studies measuring and analyzing technology transfer and knowledge spillovers from universities turn to the databases collected by the universities which report the activities of the Offices of Technology Transfer. This book examines university scientist entrepreneurship not by asking the University Technology Transfer Offices what they do in terms of entrepreneurial activities, but rather university scientists directly what they do in terms of entrepreneurial activities. The results from this study are as startling and novel as they are revealing. While the Offices of Technology Transfer databases suggest that new firm start-ups by university scientists are not particularly a frequent occurrence, this book instead finds exactly the opposite. Most striking is that using a large database of scientists funded by grants from the United States National Science Foundation, this study finds that around 13 percent of scientists have started a new firm. These findings would suggest that university scientist entrepreneurship is considerably more prevalent that would be indicated by the data collected by the Offices of Technology Transfer and compiled by the Association of University Technology Managers (AUTM). In addition, the propensity for a university scientist to be engaged in entrepreneurial activity apparently varies considerably across scientific fields. In certain fields, such as computer and network systems, the prevalence of entrepreneurship is remarkably high, 23.8 percent. Similarly, in civil, mechanical, and manufacturing innovation, over one in five of the university scientists report starting a new business. The results from this study would suggest that the spillover of knowledge from universities for commercialization, innovation and ultimately economic growth, employment creation and global competitiveness is substantially more robust than had been previously thought.

Entrepreneurship: Motivation, Performance and Risk
Richard Fairchild (School of Management, University of Bath, UK)
In series: Business Issues, Competition and Entrepreneurship
2013, 213 pp.
Hardcover: 978-1-61470-148-4, $140.00.
Softcover: 978-1-62948-153-1, $69.00.
e-book: 978-1-61470-281-8, $140.00.
In this book, the authors draw together some leading international research (both theoretical and empirical) that analyzes economic and behavioural issues surrounding entrepreneurial incentives, performance and risk. The book begins with a conceptual theoretical analysis of firm development, taking into account its interaction with the four principal factor markets. Furthermore, conflicts at the managerial level are considered. The remaining chapters analyze empirically some of the behavioural/psychological/demographic factors affecting entrepreneurship. In summary, this book draws on international research to provide insights into the economic and behavioural factors affecting entrepreneurial incentives, risk-taking and performance.

Entrepreneurship: Theory, Role of Economic Development and Practices
Aaron B. Schulte and Bradley T. Sauer
In series: Business Issues, Competition and Entrepreneurship
Softcover: 978-1-62948-649-9, $72.00.
While entrepreneurship has always been the vanguard of innovation and economic growth, in this era of globalization, competitiveness, and rapid technological transformation, entrepreneurial behavior has become imperative for individuals. In this book, the authors present current research in the study of entrepreneurial theory, its role in economic development and entrepreneurial practices. Topics discussed include a study of international entrepreneurship and the international new ventures phenomenon after two decades; reaching scalable entrepreneurship and implications for growth and job creation; an analysis of different aspects that influence the impact immigration has on host country entrepreneurship levels; and making entrepreneurs of National Youth Corps Members in Nigeria.

HRM and Marketing Orientation in the New Era
Panagiotis Kyriazopoulos
In series: Business Issues, Competition and Entrepreneurship
2013, 358 pp.
Hardcover: 978-1-62808-959-2, $195.00.
This book is devoted to the role of human resources in today’s post-industrial era. As we leave the 2nd Industrial Revolution, we are entering the 3rd Industrial Revolution, which is characterized as ‘the information society and network age.’ In this time of transition, in some countries, human resource is often seen as software that can be amended at relative ease in order to achieve the optimum cost, whereas other countries theorize that it resembles more of a piece of hardware that cannot be upgraded but only replaced. These aspects are covered in this book, and addressed through research by the authors in individual subject areas.

Independent Federal Agency Compliance with the Regulatory Flexibility Act
Lane Jarvis and Bill Leighton
In series: Government Procedures and Operations
In series: Business Issues, Competition and Entrepreneurship
2013, 193 pp.
Hardcover: 978-1-62948-195-1, $110.00.
Independent federal agencies are subject to the Regulatory Flexibility Act (RFA). Because they fall outside of presidential authority, however, independent agencies are not subject either to executive orders concerning regulatory impact analysis or to Office of Management and Budget (OMB) review of analysis. The absence of such guidance and oversight, characteristics of populations of entities regulated by independent agencies, and potentially differing adaptations or interpretations of regulatory flexibility raise questions about the degree and nature of their compliance with the RFA. This book characterizes and assesses RFA compliance of independent federal agencies. As a group, independent federal agencies do less rigorous regulatory flexibility analysis than executive-branch agencies. The independent agencies rarely ever perform quantitative analysis of costs and impacts. Differences among the practices of most independent agencies that regulate small businesses, by comparison, were only differences of degree.

Innovation in Small Firms: Select Research on Activity and Capacity
Henry Ivers
In series: Business Issues, Competition and Entrepreneurship
Hardcover: 978-1-62948-246-0, $195.00.
This book examines the extent to which product innovations stem from small, young firms versus large, established firms by analyzing the patenting behavior of public firms derived from the NBER-Compustat
Organizational Performance and Competitiveness: Analysis of Small Firms
Connie Atristain Suarez (Acciona Consultores, Álvaro Obregón, DF, México)
In series: Business Issues, Competition and Entrepreneurship
In series: Management Science - Theory and Applications
 Hardcover: 978-1-62618-003-1. $150.00.

Today’s manufacturing organizations in Mexico are increasingly confronting new markets, new competition, and greater customer expectations. Being immersed in this highly competitive environment is considered relevant for manufacturing SMEs to achieve optimal organizational performance, through efficient work processes, and leading the company to accomplish the competitiveness that the market demands. With this process, small and medium-sized enterprises (SMEs) in Mexico face manifold difficulties in terms of the operational efficiency required to stay in the market. While globalization poses challenges and opportunities for the development of enterprises, SMEs have not found a way to exploit this conjecture, and they may not be sufficiently competitive with new market requirements. This book, with the incorporation of the theoretical review of the concepts involved, and the empirical study, which shows the relationship between organizational performance and competitiveness from the perspective of resource-based theory, provides greater understanding of this theoretical connection through non-experimental research: of trans-sectional type; and with a correlational/causal approach.

Project Management: Practices, Challenges and Developments
Elizabeth C. Hoffmann
In series: Management Science - Theory and Applications
2013. 149 pp.
 Hardcover: 978-1-62948-183-8. $95.00.
e-book: 978-1-62948-184-5. $95.00.

Projects are traditionally seen as temporary organizations designed for unique tasks, often in contrast to the mass-producing core activities of organizations. Projects are used by the engineers as tools for solving almost any type of problem. In this book, the authors present current research in the study of practices, challenges and developments within project management. Topics discussed in this compilation include lessons learned in the role of the coordinator in the development of it projects; the stakeholder challenge, based on a project management of collaborative research; project management applied to lithic analysis; sustainable management team as a key element in success of project management; and the impact of project schedule adherence and rework on the duration forecast accuracy of earned value metrics.
Small Business Considerations, Economics and Research. Volume 5
Peter R. Bennett and Margaret O. Myers
In series: Small Business Considerations, Economics and Research
Hardcover: 978-1-62948-346-7. $110.00.
This series examines issues and economic matters particular to small businesses. The term Small Enterprise (or Small Organization) is sometimes used for this same category of business or organization. A small enterprise/organization may also be a nonprofit organization. This volume covers several topics including: small business size standards and a historical analysis of contemporary issues; client experience and program impact of SBA assistance to small business startups; an overview of the Small Business Investment Company (SBIC) program; and an analysis of the SBA Veterans Assistance Program.

State Regulation of Small Business: Impact of Regulatory Flexibility
Lindsay Lockwood and Paul Garritano
In series: Business Issues, Competition and Entrepreneurship
2013. 221 pp.
The Regulatory Flexibility Act of 1980 established a process of analyzing and mitigating impacts of federal regulations on small businesses and other small entities. In the ensuing years, states began adopting regulatory flexibility legislation (or executive orders) of their own. In 2002 the SBA Office of Advocacy launched a Model Legislation Initiative utilizing a model state regulatory flexibility bill, which incorporated many elements of the federal legislation in simplified form. The model legislation was published for general use in 2005, along with supporting commentary and materials, and a guidance document to assist states in implementing regulatory flexibility legislation was published in 2007. About half the states adopted regulatory flexibility legislation in the period 2002–2007. By the end of this period, the SBA data showed that 45 states and territories had some form of regulatory flexibility legislation or executive order, and about 20 of those included all of the elements in the model legislation. SBA’s Model Legislation Initiative wound down at the end of the Bush administration, although progress continued at the state level. This book examines regulatory flexibility at the state level with two general purposes: to assess the implementation of state regulatory flexibility laws; and to document further developments of state regulatory flexibility programs. The book draws on available public documents and examines the legislation of each state and traces the rule-making process from notice through regulatory flexibility analysis and review.

Technology Innovation Leadership in Development: A ‘Middle East’ (West Asia) Perspective
Giselle Rampersad and Fay Patel (Flinders University, School of Computer Science, Engineering and Mathematics, Adelaide, South Australia)
In series: Business, Technology and Finance
Hardcover: 978-1-63117-388-2. $150.00.
‘Middle East’ (West Asia) perspectives on technology innovation leadership bring new voices to the technology innovation discourse in international development. The approaches of technology innovation leaders in this collection demonstrate commitment to building sustainable futures among the communities in which the authors live. There is a scarcity of technology innovation perspectives from within ‘Middle East’ (West Asia) perspectives and the initiatives and endeavors of the innovation leaders in this book have global appeal. Other developing community innovators are inspired to compete globally as they explore future oriented sustainable innovation solutions that are context specific. Innovation and technology leadership in areas such as e-government and e-commerce are national priorities for countries such as Saudi Arabia. While there is a dense literature available on innovation diffusion in other developing community contexts (for example South Asia, the Asia Pacific region, Africa and Latin America), this book fills the gaps in the literature on ‘Middle East’ (West Asia) perspectives on innovation technology diffusion in developing community contexts. The book emphasizes the unique leadership perspectives and approaches of pioneers who boldly embrace ‘e-solutions’ in government, commerce, education and environment. ‘e-Solutions’ refers to the increasing use of multiple new communication technologies to innovate and produce meaningful change within developing communities. Contributors to this book respond to specific grassroots issues through a critical examination and investigation of key research questions from the perspective of developing communities who are committed to building sustainable futures. In unique and creative ways, they respond to the needs of communities that they know well and who are part of their lived realities. It will also inspire other developing communities to aspire to their highest potential in seeking creative solutions.

U.S. Insurance Industries after the 2007-2009 Financial Crisis
Johnson B. Powell
In series: Business Economics in a Rapidly-Changing World
In series: Global Recession - Causes, Impacts and Remedies
2013. 120 pp.
Hardcover: 978-1-62948-118-0. $110.00.
The U.S. life and property/casualty (P/C) insurance industries wrote over $1 trillion in total premiums in 2011 and play an important role in ensuring the smooth functioning of the economy. Concerns about the oversight of the insurance industry arose during the 2007-2009 financial crisis, when one of the largest U.S. holding companies that had substantial insurance operations, American International Group, Inc. (AIG), suffered large losses. These losses were driven in large part by activities conducted by a non-insurance affiliate, AIG Financial Products, but also included securities lending activity undertaken by some of its life insurance companies which created liquidity issues for some insurers. The losses threatened to bankrupt the company, and AIG was one of the largest recipients of assistance by the Federal Reserve Bank of New York and the federal government under the Troubled Asset Relief Program (TARP) set up during the crisis. This book examines any effects of the financial crisis on the insurance industry and policyholders, and addresses what is known about how the financial crisis affected the insurance industry and policyholders, and the types of actions that have been taken since the crisis to help prevent or mitigate potential negative effects of future economic downturns on insurance companies and their policyholders.

Unemployment Compensation: Contemporary Issues
Marcos N. Wynn
In series: Business Issues, Competition and Entrepreneurship
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-62948-348-1. $110.00.
The most recent recession led to an unprecedented increase in the number of those unemployed for more than 26 weeks (the long-term unemployed). As a result, congressional interest in policy initiatives to expedite the return to work grew. This report examines a variety of initiatives and measures within the Unemployment Compensation (UC) program that might reduce long-term unemployment for beneficiaries with a focus on unemployment compensation insurance and military service; the eligibility for students under state and federal laws; receipt of unemployment insurance by higher-income unemployed workers (millionaires); the Self-Employment Assistance (SEA) program; consequences of changes in state unemployment compensation laws; the impact of the sequestration on unemployment insurance benefits; and the legislative issues in the 113th Congress relating to unemployment insurance.

**Workforce Diversity in the Financial Sector**  
*Emily Cruz and Derek Houghton*

**In series: Business Issues, Competition and Entrepreneurship**

2013. 156 pp.  

As the U.S. workforce has become increasingly diverse, many private- and public-sector entities recognize the importance of recruiting and retaining minorities and women for management-level positions to improve their business. The 2007-2009 financial crisis has renewed questions about commitment within the financial services industry (e.g., banking and securities) to workforce diversity. The Dodd-Frank Act required that eight federal financial agencies and the Federal Reserve Banks implement provisions to support workforce and contractor diversity. This book reviews the trends and practices implemented since the beginning of the financial crisis and examines (1) workforce diversity in the financial services industry, the federal financial agencies, and Reserve Banks from 2007 through 2011 and (2) the efforts of the agencies and Reserve Banks to implement workforce diversity practices under the Dodd-Frank Act, including contracting.

**Cost of Raising a Child: Family Expenditure Reports 2011-2012**  
*Athena M. Byers*

**In series: Family Issues in the 21st Century**

Softcover: 978-1-62948-369-6. $52.00.  

Since 1960, the U.S. Department of Agriculture has provided estimates of expenditures on children from birth through age 17. This book presents the most recent estimates for husband-wife and single-parent families using data from the 2005-06 Consumer Expenditure Survey, updated to 2012 dollars using the Consumer Price Index. Data and methods used in calculating annual child-rearing expenses are described. Estimates are provided for major components of the budget by age of child, family income, and region of residence. For the overall United States, annual child-rearing expense estimates ranged between $12,290 and $14,320 for a child in a two-child, married-couple family in the middle-income group. Adjustment factors for number of children in the household are also provided. Results provided should be of use in developing State child support and foster care guidelines, as well as in family educational programs.

**Head Start and Child Outcomes: Select Analyses of FACES 2009**  
*Jack M. O’Sullivan*

**In series: Children’s Issues, Laws and Programs**

Hardcover: 978-1-62948-078-7. $110.00.  

This book provides an overview of children’s kindergarten readiness with a focus on reports describing data from the 2009 cohort of the Head Start Family and Child Experiences Survey (FACES 2009). This book describes the family backgrounds and developmental outcomes of children as they completed the program and also describes progress in children’s outcomes between Head Start entry and exit. It focuses on the population of children who entered Head Start for the first time in Fall 2009 and completed one or two years of the program in Spring 2010 or Spring 2011 before entering kindergarten in the fall. After providing background information on children’s characteristics and family demographics, a description of children’s outcomes at the end of Head Start and changes in children’s skills and development between Head Start entry and exit is discussed. These changes reflect a range of influences, including maturation, program and family influences, and other factors in children’s lives.
Identifying Mental Health and Substance Use Disorders Among Youth in the Juvenile Justice System: A Resource Guide

Pierre L. Boucher

In series: Substance Abuse Assessment, Interventions and Treatment

In series: Children's Issues, Laws and Programs


Hardcover: 978-1-62808-729-1. $110.00.

Research indicates that many youth who come into contact with the juvenile justice system may have mental health- and substance use-related disorders. Problems related to these conditions play a continuing role in delinquency and pose risks to the welfare of youth, juvenile justice staff, and others. Identifying troubled youth is the first step in providing them with appropriate treatment. To take that first step, juvenile justice professionals need reliable screening and assessment instruments and practical guidance in their effective use. This book offers a comprehensive, user-friendly synthesis of current information on instruments that can be used to screen and assess youth for mental health- and substance use-related disorders at various stages of the juvenile justice process. The book includes profiles of more than 50 instruments, guidelines for selecting instruments, and best practice recommendations for diverse settings and situations.

Mental Health and Substance Use Problems of Children and Adolescents: Identification Guide for Child Services

Elisa Dissarro

In series: Children's Issues, Laws and Programs

In series: Substance Abuse Assessment, Interventions and Treatment

2013. 222 pp.

Hardcover: 978-1-62808-698-0. $195.00.

This book examines the early identification of children and adolescents with mental health and substance use problems in order to provide guidance, tools, and resources for early identification—including a compendium of the most developmentally, culturally, and environmentally appropriate screening instruments. The U.S. Preventive Services Task Force, which evaluates the evidence on the efficacy of various preventive practices, has recommended screening adolescents for depression in primary care; however, it has not yet reviewed the evidence for general, multicondition screening instruments, such as those discussed in this book. However, it is likely that many families—especially those whose children fall into groups at elevated risk for mental health or substance use problems—would prefer to know as soon as possible if their child or adolescent shows indications of these problems. Early identification and intervention would allow caregivers to promptly address any identified problems. Programs and services for youth who are at elevated risk for mental health and substance use problems should, as much as possible, offer caregivers the opportunity to identify any such problems. Because caregivers are the decision makers for their children, the guide emphasizes that informed parental consent must always be obtained before any formal identification or screening process is conducted; it also reinforces that parental involvement from the beginning is appropriate and encouraged.

Playing with Fire: Children, Adolescents and Firesetting

Hatim A. Omar, Carrie Howell Bowling and Joav Merrick (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)

In series: Pediatrics, Child and Adolescent Health

Edited by: Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)


Softcover: 978-1-62948-471-6. $52.00.

Rural and urban residents accustomed to seeing fire engines racing with sirens wailing and lights flashing are unaware of the problem of juvenile-set fires. Firesetting behaviors among children and adolescents are serious and have associated with it, serious individual and societal costs. Every year, several thousand children and adolescents aged 14 years and younger in the United States alone are injured or killed. Firesetting, pyromania and arson are topics that have existed in the literature since Sigmund Freud explained firesetting through his psychoanalytic model. Helen Yarnell’s studies during the 1940s and 1950s were the first, however, to focus on the behavior of youth firesetting. Her study in 1940 found that over 70% of adult incarcerated arsonists and institutionalized pyromaniacs had firesetting histories beginning in their childhood. She also introduced the concept of the ego triad: firesetting, enuresis and cruelty to animals as predictors of violence. The psychoanalytic view of firesetting continued to pervade the juvenile firesetting research through the 1970s. Beginning in the late 1970s and early 1980s, a shift occurred in the study of juvenile firesetting and also in the number of studies being conducted on the topic. Researchers began to analyze juvenile firesetting from multiple perspectives of a child’s life. The social learning and dynamic-behavioral models developed by these researchers gave clinicians a more thorough framework for understanding children who set fires and assessment tools to use in diagnosis and treatment planning. In this book, we discuss recent research on firesetting in childhood and adolescence.

Vulnerable Youth: Background, Policies, and Employment Programs

Perry Roswell

In series: Children's Issues, Laws and Programs


Hardcover: 978-1-63117-482-7. $110.00.

Congress has long been concerned about the well-being of youth. The nation’s future depends on young people today to leave school prepared for college or the workplace and to begin to make positive contributions to society. Some youth, however, face barriers to becoming contributing taxpayers, workers, and participants in civic life. These youth have characteristics or experiences that put them at risk of developing problem behaviors and outcomes that have the potential to harm their community, themselves, or both. Poor outcomes often develop in home and neighborhood environments that do not provide youth with adequate economic and emotional supports. This book first provides an overview of the youth population and the increasing complexity of transitioning to adulthood for all adolescents. It also provides a separate discussion of the concept of “disconnectedness,” as well as the protective factors youth can develop during childhood and adolescence that can mitigate poor outcomes. Further, the book describes the evolution of federal youth policy, focusing on three time periods, and provides a brief overview of current federal programs targeted at vulnerable youth.
Youth Mentoring: Federal Programs and an Evaluation of the Department of Education's Student Mentoring Program

Louis B. Anderson

In series: Children’s Issues, Laws and Programs

Hardcover: 978-1-62808-629-4. $230.00.
e-book: 978-1-62808-630-0. $230.00.

Youth mentoring refers to a relationship between youth—particularly those most at risk of experiencing negative outcomes in adolescence and adulthood—and the adults who support and guide them. The origin of the modern youth mentoring concept is credited to the efforts of charity groups that formed during the Progressive era of the early 1900s to provide practical assistance to poor and juvenile justice-involved youth, including help with finding employment.

Approximately 2.5 million youth today are involved in formal mentoring relationships through Big Brothers Big Sisters (BBBS) of America and similar organizations. Contemporary mentoring programs seek to improve outcomes and reduce risks among vulnerable youth by providing positive role models who regularly meet with the youth in community or school settings. Some programs have broad youth development goals while others focus more narrowly on a particular outcome.

Evaluations of the BBBS program and studies of other mentoring programs demonstrate an association between mentoring and some positive outcomes, but the effects of mentoring on particular outcomes and the ability for mentored youth to sustain gains over time are less certain. This book begins with an overview of the purpose of mentoring, including a brief discussion on research of structured mentoring programs. The book then describes the evolution of federal policies on mentoring since the early 1990s and provides an overview of the components and funding for each of two recent (discontinued) federal mentoring programs, as well as a discussion of other federal mentoring initiatives that are currently funded.

CHINESE STUDIES

China Investment Corporation: China’s Key Sovereign Wealth Fund and Chinese Investment Issues

Ines Hembrecht

In series: China in the 21st Century

Hardcover: 978-1-62808-913-4. $110.00.
e-book: 978-1-62808-914-1. $110.00.

Over the past decade, sovereign wealth funds (SWFs) have proliferated and have increased their role in the international economy. China now has four SWFs and accounts for one-fifth of global SWF assets. China Investment Corp. (CIC), China’s flagship SWF, has increased its assets from $200 billion to an estimated $500 billion in just five years as a result of funding and other support from the Chinese government. This book examines the operations and investment strategy of CIC. It also considers how China’s SWFs are being regulated in the United States and internationally. The book builds on hearings and research conducted by the U.S.-China Economic and Security Review Commission (USCC) in 2008. At the time, CIC had just purchased equity in Wall Street firms Morgan Stanley and Blackstone. Since then, CIC has bought shares in dozens of publicly traded U.S. companies, partnered with U.S. fund managers, and provided capital to U.S. energy companies.

Education in China: Cultural Influences, Global Perspectives and Social Challenges

Xiaoming Li (Prevention Research Center, Carman and Ann Adams Department of Pediatrics, Wayne State University School of Medicine, Detroit, MI, USA)

In series: Education in a Competitive and Globalizing World

e-book: 978-1-62808-276-0. $230.00.

Parallel to the unprecedented growth of the economy in the past 30 years, China has experienced the fastest development of its education system in its history. Despite the remarkable development and achievement in many areas, China still faces challenges in redefining its education priorities, improving the quality of education systems and education practices, and achieving education equality across its diverse population and vast geography. A group of 38 leading and emerging scholars from mainland China, Hong Kong, the United States, and Canada provided comprehensive reviews or empirical data to address a variety of core issues and key challenges in many important areas of formal and informal education in China from historical, social, cultural and global perspectives. The authors come from various academic backgrounds including economics, education, history, law, mass media, policy study, psychology, public affair administration, social work, and sociology. The topics covered by the 22 chapters in this book include early childhood education, special education, rights of children with disabilities, music education, physical education, higher education, high education equity, non-state higher education, academic capitalism, higher vocational education, rural compulsory education, compulsory education for migrant children, instructional technology, distance learning, media literacy education, teacher professional development, Chinese language education, quality education, family education, moral education, and sex education.

COMMUNICATIONS

Federal Communications Commission: An Examination of Regulatory Fees

Veeti Laine

In series: Electronics and Telecommunications Research

2013. 75 pp.
Softcover: 978-1-62808-222-7. $52.00.

The Federal Communications Commission (FCC) must by law assess annual regulatory fees on telecommunications entities to recover its entire appropriation, about $336 million in fiscal year 2011. The entities from which the FCC collects fees fall into one of five main industry sectors (broadcast, cable, wireline, wireless, and international) and are assigned to one of 86 fee categories, such as paging services. Recently, the FCC stated that it was planning to consider reforms to its regulatory fees process. This book examines the FCC’s process for assessing regulatory fees among industry sectors; FCC’s regulatory fee collections over the past ten years; and alternative approaches to assessing regulatory fees.

COUNTRY

Canada and the United States: Shared Approaches to Security and Trade

Wendy Cohn and Michael Graves

In series: Environmental Research Advances

Hardcover: 978-1-62948-297-2. $110.00.
On February 4, 2011, the Prime Minister of Canada and the President of the United States issued "Beyond the Border: A Shared Vision for Perimeter Security and Economic Competitiveness." The Declaration established a new long-term partnership built upon a perimeter approach to security and economic competitiveness. This means working together, not just at the border, but "beyond the border" to enhance our security and accelerate the legitimate flow of people, goods, and services. Leaders called for the development of a joint Action Plan to realize this goal. This Action Plan sets out joint priorities for achieving that vision within the four areas of cooperation identified in the Beyond the Border Declaration: addressing threats early; trade facilitation, economic growth, and jobs; cross-border law enforcement; and critical infrastructure and cyber security. This book examines the shared vision for perimeter security and economic competitiveness between Canada and the United States, with a focus on the border infrastructure investment plan; emergency management assistance mechanisms; and U.S.-Canada border traffic disruption management.

Countries of the World: Developments, Issues, and U.S. Relations. Volume 1
Rabbecca E. Rouse
In series: Countries of the World: Developments, Issues and U.S. Relations
Hardcover: 978-1-62618-378-0. $135.00.
This series addresses new developments, issues and U.S. relations with countries around the world. Topics discussed in this compilation include the crisis in Mali; current issues in Algeria; recent developments and U.S. relations with Malawi; Australia and the U.S. rebalancing to Asia strategy; current conditions and Congressional concerns relating to Haiti under President Martelly; background and U.S. relations with Jamaica; current issues and U.S. policy in Kosovo; and the peace process in Northern Ireland.

Iraq: Final Assessments of the Special Inspector General and Post-U.S. Withdrawal Developments
Gustavo D. Ryder
In series: Politics and Economics of the Middle East
Hardcover: 978-1-62948-478-5. $195.00.
Regarding U.S. relief and reconstruction plans, programs, and operations in Iraq, the Special Inspector General for Iraq Reconstruction (SIGIR) provides independent and objective: oversight and review through comprehensive audits, inspections, and investigations; advice and recommendations on policies to promote economy, efficiency, and effectiveness; prevention, detection, and deterrence of fraud, waste, and abuse; and information and analysis to the Congress, the Secretary of State, the Secretary of Defense, and the American people. This book provides a review of SIGIR’s history, delving into the perennial challenges and various successes in Iraq and examines events in Iraq this last quarter marked by a sharp rise in violence. Final assessments of the Special Inspector General and post-U.S. withdrawal developments are discussed.

Lucio N. Burrows
In series: Energy Science, Engineering and Technology
In series: Energy Policies, Politics and Prices
This book provides an overview of various energy strategies that are available to Guam in the pursuit of diversifying fuel sources and reducing fossil energy consumption 20% by 2020 (20x20). The information in this book is based upon input from the Guam Energy Task Force (GETF), the National Renewable Energy Laboratory’s (NREL’s) Guam Initial Technical Assessment Report, and additional stakeholders. The information presented in this strategic energy plan is intended to be used by the GETF in developing an energy action plan. The next step in reaching the 2020 goal involves selecting the most appropriate strategies from the options outlined in this strategic plan and creating a roadmap for implementation in the Guam Energy Action Plan. The strategies are categorized based on the time required to implement them. Near-term strategies can be accomplished in 1-2 years, mid-term strategies require 3-5 years, long-term strategies require 6-8 years, and some strategies require 8 or more years before they can be fully implemented. The prioritization of the strategies will help facilitate the development of an action plan and the selection of appropriate strategies for meeting Guam’s 2020 goal.

South Africa: Conditions, Issues and U.S. Relations
Serge Bernard
In series: African Political, Economic, and Security Issues
2013. 146 pp.
Softcover: 978-1-62948-496-9. $52.00.
e-book: 978-1-62948-495-2. $52.00.
South Africa is a multi-racial, majority black southern African country of nearly 52 million. It held its first universal suffrage elections in 1994, after a transition from white minority rule under apartheid, a system of state-enforced racial segregation and socioeconomic discrimination. South Africa is influential regionally, due to its political engagement and trade and investment across Africa and its active role within the African Union. It is viewed as a U.S. strategic partner in Africa, despite periodic differences over some foreign policy issues. In late June 2013, President Obama traveled to South Africa after visiting Senegal, prior to a visit to Tanzania. The trip centered on U.S.-African partnership in the areas of trade and investment, development, democracy and youth leadership development, and peace and security. Key issues addressed in South Africa included bilateral political and economic ties, development cooperation, and shared U.S.-South African aims regarding conflict mitigation, increased trade and investment, and development across Africa. This book provides an overview of current conditions, issues and U.S. relations corresponding to South Africa, with a focus on the most recent human rights and international religious freedom reports; trafficking-in statistics and economic investment climate.

The Syria Problem
Trent P. Motz
In series: Politics and Economics of the Middle East
In series: Foreign Policy of the United States
Softcover: 978-1-62948-405-1. $110.00.
The U.S. intelligence community has assessed “with high confidence” that Syrian government forces used sarin nerve gas in limited attacks earlier this year and conducted a mass casualty chemical weapons attack against rebel held areas near Damascus on August 21, 2013. In June 2013, the Obama Administration stated that reported chemical attacks would lead the United States to offer more material support to the opposition. Secretary of Defense Hagel and Secretary of State Kerry have stated that the United States is providing lethal assistance to vetted members of the Syrian opposition. In response to the alleged chemical attack in August, the President is seeking congressional authorization for a punitive military response intended to deter the Asad regime from using chemical weapons in the future. Members of
Congress have offered divergent views concerning the reported use of chemical weapons and proposed responses. The war in Syria and the debate over possible punitive U.S. military action against the Assad regime for its alleged use of chemical weapons pose a uniquely challenging series of questions for policy makers. The overarching questions remain how to define, prioritize, and secure the core interests of the United States with regard to Syria’s complex civil war. The immediate questions are whether and how best to respond to the apparent use of chemical weapons in Syria and how such a response might affect U.S. interests and standing regionally and globally. In weighing these questions, Members of Congress and Administration officials are seeking both to protect concrete U.S. national security interests and to preserve abstract international security principles that may serve those interests. This book examines the background issues and U.S. response options in the armed conflict in Syria; the humanitarian response; and includes remarks made by President Obama in an address to the Nation about Syria on September 10, 2013.

**United Arab Emirates: Conditions, Issues and U.S. Relations**

*Nigel C. Guillory*

In series: *Politics and Economics of the Middle East* 2013. 140 pp.  
Softcover: 978-1-62948-451-8. $52.00.  
e-book: 978-1-62948-452-5. $52.00.

The United Arab Emirates (UAE) is a federation of seven emirates (principalities): Abu Dhabi, the oil-rich capital of the federation; Dubai, its free-trading commercial hub; and the five smaller and less wealthy emirates of Sharjah, Ajman, Fujayrah, Umm al-Qaywayn, and Ras al-Khaymah. The UAE’s relatively open borders and economy have won praise from advocates of expanded freedoms in the Middle East while producing financial excesses, social ills such as human trafficking, and opportunity for UAE-based Iranian businessmen to try to circumvent international sanctions. The social and economic freedoms have not translated into significant political change; the UAE government remains under the control of a small circle of leaders who allow citizen participation primarily through traditional methods of consensus-building. To date, these mechanisms, economic wealth, and reverence for established leaders have enabled the UAE to avoid wide-scale popular unrest. Since 2006, the government has increased formal popular participation in governance through a public selection process for half the membership of its consultative body, the Federal National Council (FNC). But, particularly since the Arab uprisings that began in 2011, there has been an increase in domestic criticism of the unchallenged power and privileges of the UAE ruling elite as well as the spending of large amounts of funds on elaborate projects that cater to tourists. The leadership has resisted any dramatic or rapid further opening of the political process, and it is becoming increasingly aggressive in preventing the rise of Muslim Brotherhood-linked Islamist, as well as secular opposition movements. The crackdown is drawing increased criticism from human rights groups. This book examines the UAE’s 2012 human rights and religious freedom reports; its problem with human trafficking; the economic investment climate; and relations with the U.S.

**CRIME**

*Crime: International Perspectives, Socioeconomic Factors and Psychological Implications*  
*Michael Harry Pearson*  
In series: *Law, Crime and Law Enforcement*  
Hardcover: 978-1-62948-657-4. $150.00.  

In this book, the authors discuss crime issues from an international perspective, with a focus on socioeconomic factors and psychological implications. Topics include a qualitative analysis of contemporary Australian prison exit issues including prisoner re-entry and prisoner reintegration; offender profiling; hate crime in the U.S. and its relevant factors; stories of rape victims struggles and survival; a European examination of youth sexual aggression and victimization; positive psychology, offender rehabilitation and restorative justice; the effects of crime on marriages, divorce and births to single mothers in bordering states of Mexico; a comparison of geospatial data concerning crime in China and in the U.S.; prosecution of white collar criminals; and the question of whether stigmatized minorities are over-represented in delinquency in France.

**Putting Privacy in Perspective: Exploring the Evolution and Implications of Privacy in U.S. Society**

*Michelle G. Hough (Business Administration, The Pennsylvania State University, McKeesport, PA, USA)*

In series: *Privacy and Identity Protection*  
Softcover: 978-1-62808-508-2. $52.00.  

*Putting Privacy in Perspective* (PPP) provides a unique evolutionary perspective on the privacy debate by examining how technological advances enabled, and subsequently are eroding, a societal expectation of privacy in contemporary American society. The book is organized around Westin’s four facets of privacy – solitude, intimacy, anonymity, and reserve. In separate chapters, it examines the evolution of each facet from Colonial times through modern day. This work views privacy not as a sacred societal right guaranteed by the founding fathers, but as an accidental by-product of industrialization, dependent upon particular environmental conditions for its survival. Because privacy is a societal issue, this book will appeal to a wide audience, including the general public. It will be of particular interest to computer professionals, legal scholars, libertarians, policy makers and any others who have an interest in the privacy debate. This book forces readers to examine privacy from a generalist perspective. The current privacy debate is fragmented – computer professionals focus on the implications of particular innovations; libertarians debate the boundaries of privacy; business managers ponder the commercial and employment implications of privacy policy; and legal scholars discuss the viability and enforceability of current or proposed legislation. “Putting Privacy in Perspective” (PPP) uniquely enables a broader perspective on privacy that facilitates a common understanding of the issue.PPP will be a “go to” book to enable debate and research on the evolution of privacy.

**CRIMINAL JUSTICE, LAW ENFORCEMENT**

*Bureau of Prison's Segregated Housing Practices*  
*Nathaniel A. Collins*  
In series: *Criminal Justice, Law Enforcement and Corrections*  
2013. 85 pp.  
Softcover: 978-1-62808-579-2. $52.00.  

The overall number of inmates in the Bureau of Prisons’ (BOP) three main types of segregated housing units, Special Housing Units (SHU), Special Management Units (SMU), and Administrative Maximum (ADX), increased at a faster rate than the general inmate population.
Inmates may be placed in SHUs for administrative reasons, such as pending transfer to another prison, and for disciplinary reasons, such as violating prison rules; SMUs, a four-phased program in which inmates can progress from more to less restrictive conditions; or ADX, for inmates that require the highest level of security. From fiscal year 2008 through February 2013, the total inmate population in segregated housing units increased approximately 17 percent, from 10,659 to 12,460 inmates. By comparison, the total inmate population in BOP facilities increased by about 6 percent during this period. This book examines the trends in the BOP’s segregated housing population; the extent to which the BOP centrally monitors how prisons apply segregated housing policies; and the impact segregated housing has on institutionalized safety and inmates.

Driving While Impaired: Confronting Defense Challenges and Guidance for Law Enforcement and Prosecutors
Keith Bechtel
In series: Criminal Justice, Law Enforcement and Corrections
2013. 166 pp.
Hardcover: 978-1-62948-542-3. $110.00.
e-book: 978-1-62948-543-0. $110.00.
While common in occurrence, the evidence needed to prove guilt in impaired driving cases is complex, often requiring expert testimony to assist the trier-of-fact in determining what happened. As in any profession, those who work in it sometimes take for granted the complex nature of our legal system and presume others understand it as we do, which oftentimes is not the case. To fill that void, this publication provides an overview of the criminal justice system for people who will likely encounter it through their roles as expert witnesses.

Gun Safety Technologies: A Review of Smart Guns and Personalized Firearms (Plus Accompanying CD-ROM)
Ismael D. Harman
In series: Criminal Justice, Law Enforcement and Corrections
2013. 85 pp.
Softcover: 978-1-62948-411-2. $120.00.
e-book: 978-1-62948-412-9. $120.00.
When such an issue with deep and powerful cultural resonance as firearms is given the full attention of the nation, the challenges involved with confronting the complex interconnectedness of law, public safety, constitutional rights, policy, technology, market forces, and other concerns seem only amplified. With careful consideration, however, untangling the various components of the issue is possible, and an investigation of technology can be accomplished with minimal diversion into the other realms. This book examines existing and emerging gun safety technologies and their availability and use to provide a comprehensive perspective on firearms with integrated advanced safety technologies. These firearms are known by various terms such as smart guns, user-authorized handguns, childproof guns, and personalized firearms. A “personalized firearm” can be understood to utilize integrated components that exclusively permit an authorized user or set of users to operate or fire the gun and automatically deactivate it under a set of specific circumstances, reducing the chances of accidental or purposeful use by an unauthorized user.

Accompanying this book is a CD-ROM examining the Smart Gun Technology Project and updates.

Issues in Crime, Criminal Justice and Aging
Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)
In series: Social Perspectives in the 21st Century
Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2013. 77 pp.
Softcover: 978-1-62808-890-8. $52.00.
e-book: 978-1-62808-901-1. $52.00.
This book explores the issues of crime, aging and criminal justice and their relationship to pensions, prisons, offenders, and victimization. The book is original in that it explores such key issues from the social domain of "aging". This book begins by exploring the relationship of crime, criminal justice and trust – an essential context that is situated that can provide key conceptual insights into the key issues in crime and criminal justice. The book then moves to assess the main issues of crime. These are associated with understanding pensions, on the one hand, and imprisonment for older people, on the other hand. The book focuses its gaze upon older people as offenders and victims.

Offender Reentry: Background, Federal Programs, and an Annotated Bibliography
Micah J. Hiram
In series: Criminal Justice, Law Enforcement and Corrections
Softcover: 978-1-63117-496-4. $52.00.
e-book: 978-1-63117-497-1. $52.00.
The prison population in the United States has been growing steadily for more than 30 years. The Bureau of Justice Statistics reports that since 2000 an average of 680,000 inmates have been released annually from state and federal prisons and almost 5 million ex-offenders are under some form of community-based supervision. Offender reentry can include all the activities and programming conducted to prepare ex-convicts to return safely to the community and to live as law-abiding citizens. The federal government’s involvement in offender reentry programs typically occurs through grant funding, which is available through a wide array of federal programs at the Departments of Justice, Labor, Education, and Health and Human Services. However, only a handful of grant programs in the federal government are designed explicitly for offender reentry purposes. This book discusses the correctional statistics, reintegration of released offenders into communities, and recidivism.

Police Deviance and Criminality: Managing Integrity and Accountability
Julia Davidson (Kingston University) and Petter Gottschalk (Norwegian Business School)
In series: Criminal Justice, Law Enforcement and Corrections
Hardcover: 978-1-62100-938-2. $165.00.
Softcover: 978-1-62948-284-2. $79.00.
Leadership and culture are important elements in policing. Police leaders often work within a police culture steeped with traditions. The purpose of this book is to describe and critically evaluate leadership roles and professional culture in the police, focusing upon integrity and accountability in policing. This book is aimed at executive courses for police officers in police university colleges all over the world. In addition, practicing police managers will find it useful. Persons working in police oversight organizations such as independent police complaint commissions will find it very useful. Generally, criminology
students as well as police science students will find it useful in criminology courses and law enforcement courses.

**Private Investigations: Suspicions of Financial Crime by White-Collar Criminals**

Petter Gottschalk (Department of Leadership and Organizational Behavior, BI Norwegian Business School, Norway)

In series: Criminal Justice, Law Enforcement and Corrections


This book is concerned with private investigations into suspicions of financial crime committed by white-collar criminals. Financial crime is illegal possession of others property, it is crime directed towards values of others for personal or organizational advantage, which is carried out by non-physical means and by manipulating and hiding criminal activities within regular business activities. It is with purpose, it is a break of trust, and it causes loss. White-collar criminals are persons who carry out financial crime in the context of their profession. It is individuals who enjoy respect and trust, they have a high social status in society, they occupy important positions in organizations, and they abuse trust and position as offenders. Their financial crime is hidden among legal financial transactions. This book is about financial crime specialists and fraud examiners who conduct private inquiries into suspicion of white-collar crime. A private investigation is conducted by a variety of private sector financial crime specialists who can be detectives, forensic accountants, psychologists, or lawyers, all of whom may be supported by investigative analysts. This book applies a perspective where research, study, investigation, inquiry and analysis are important to find the truth and its causes in a case. Therefore, this book is more influenced by police science and detective work, rather than laws and legal thinking. It is the private detective rather than the firm lawyer who is a potentially successful fraud examiner when it comes to abuse of power and suspicion of financial crime by the elite in society. But most of all is successful investigation characterized by a multifaceted and multidisciplinary work, including accountants, auditors, lawyers, organizational experts, forensic scientists and detectives. Their knowledge exchange and collaboration is needed to solve each financial crime case, which is like a puzzle. If one piece is missing, the puzzle will never be complete. A unique feature of this book is the policing and detective perspective, rather than the legal or auditing perspectives. This means that information sources and investigative methods are at the core of this book. An example of an information source is people, where the accompanying method is how you get information out of individuals, such as by interviews. Thirdly, this book applies a project perspective on private investigations, where an investigation is carried out as a project. A project has a defined start and a defined stop, it has a mandate, and it has limited allocated resources. Last but not least, this book applies a strategic perspective to private investigations, where choice of strategy is the selected path to reach a goal.

**DEFENSE AND SECURITY**

Accounting for Missing Persons from Past Conflicts: Assessing the Department of Defense Mission

Landon Kurtis Welsby

In series: Defense, Security and Strategies


While the Department of Defense (DOD) has made some progress in promoting communication among the several organizations responsible for accounting for missing persons—known collectively as the accounting community—DOD’s capability and capacity to accomplish its missing persons accounting mission is being undermined by longstanding leadership weaknesses and a fragmented organizational structure. This book assesses DOD’s capability and capacity to accomplish its missing persons accounting mission.

**Behavior Detection Activities to Identify Aviation Security Threats: Assessments**

Ronald D. Figueroa

In series: Defense, Security and Strategies


Available evidence does not support whether behavioral indicators, which are used in the Transportation Security Administration’s (TSA) Screening of Passengers by Observation Techniques (SPOT) program, can be used to identify persons who may pose a risk to aviation security. This book addresses the extent to which available evidence supports the use of behavioral indicators to identify aviation security threats, and TSA has the data necessary to assess the SPOT program’s effectiveness.

**Crafting National Security Strategy Documents: Country Case Studies and Comparisons**

Ginnie Waylon

In series: Defense, Security and Strategies


In some manner, shape, or form, every nation state in the international system has a national security strategy or strategies. These strategies are intended to guide the state as it makes its way through the labyrinth of challenges that every nation state faces in the 21st century. The strategy could represent the nation’s overall grand strategy or it could be a national security-related strategy for one particular issue, like force structure development for the armed forces. This book discusses how nation-states create their own national security strategies, and continues to provide mandates, execution to dates, and issues involved for Congress in national security strategies.

**Department of Defense Use of Contractors to Support Military Operations: Analyses and Trends**

Troy Blanchard

In series: Defense, Security and Strategies


Throughout its history, the Department of Defense (DOD) has relied on contractors to support a wide range of military operations. Operations over the last thirty years have highlighted the critical role that contractors play in supporting U.S. troops - both in terms of the number of contractors and the type of work being performed. Over the last decade in Iraq and Afghanistan, and before that, in the Balkans, contractors accounted for 50% or more of the total military force. Regardless of whether future operations are similar to, or significantly different from, those of the past decade most analysts and defense officials believe that contractors will continue to play a central role in overseas military operations. Consequently, these observers believe that the DOD should be prepared to effectively award and manage contracts at a moment’s notice, anywhere in the world, in unknown environments, and on a scale that may exceed the total contract obligations of any other federal agency. This book provides background information and identifies issues for Congress on the use
of contractors to support military operations. The DOD's extensive use of contractors poses several potential policy and oversight issues for Congress and has been the focus of numerous hearings. Congress' decisions on these issues could substantially affect the extent to which the DOD relies on contractors in and is capable of planning for and overseeing contractors in future operations.

Department of Homeland Security Science and Technology Directorate: Mission and Issues
Gilles Cuvelier
In series: Defense, Security and Strategies
Hardcover: 978-1-62808-355-2. $110.00.

Policymakers generally believe that science and technology can and will play significant roles in improving homeland security. When Congress established the Department of Homeland Security (DHS), through the Homeland Security Act of 2002, it included the Directorate of Science and Technology (S&T) to ensure that the new department had access to science and technology advice and capabilities for research and development (R&D). The S&T Directorate is the primary organization for R&D in the DHS. It conducts R&D in several DHS laboratories and funds R&D conducted by other government agencies, the Department of Energy national laboratories, academia, and the private sector. Additionally, the directorate supports the development of operational requirements and oversees the operational testing and evaluation of homeland security systems for the DHS. This book provides a brief overview of the S&T Directorate's mission, organization, and budgetary structure; a discussion of selected critiques of the S&T Directorate; and an analysis of selected issues facing congressional policymakers.

Explosive Ordnance Disposal: Assessment and Role of EOD Forces
Alain Michaux
In series: Defense, Security and Strategies
Softcover: 978-1-62808-357-6. $52.00.

The Department of Defense (DOD) has relied heavily on the critical skills and capabilities of Explosive Ordnance Disposal (EOD) personnel from each of the four military services to counter threats from improvised explosive devices (IED), a significant cause of fatalities among U.S. troops in Iraq and Afghanistan. EOD personnel have extensive training in the detection, identification, on-site evaluation, making safe, recovery, and final disposal of unexploded explosive ordnance. EOD forces' capabilities in countering the IED threat, including collecting and evaluating captured explosive-related enemy material from the devices, have made these forces integral to successful joint military operations. However, the high demand for the EOD capability has resulted in personnel experiencing numerous deployments. In addition to their function in countering IEDs, EOD personnel are responsible for a wide range of other missions, such as clearing unexploded ordnance from training ranges; providing defense support to civil authorities; and assisting the U.S. Secret Service and Department of State with the protection of the President and other high-ranking government officials. This book provides an overview and assessment of the role of EOD forces and operations.

Federal Security Clearances: Elements and Improvement Opportunities
Joshua Hartman
In series: Defense, Security and Strategies
Softcover: 978-1-63117-039-3. $52.00.

Security clearances allow personnel access to classified information that, through unauthorized disclosure, can, in some cases, cause exceptionally grave damage to U.S. national security. To safeguard classified data and manage costs, agencies need an effective process to determine whether civilian positions require a clearance. This book discusses agencies needing clearly defined policies for determining civilian position requirements; answers frequently asked questions on the security clearance process; and provides statements and testimonies from a hearing on the insider threat to homeland.

Foreign Intelligence Surveillance Act Issues: Public Advocacy and Standing to Sue
Devin T. Allman
In series: Intelligence and Counterintelligence Studies
Softcover: 978-1-63117-156-7. $52.00.

Recent revelations about the size and scope of government foreign surveillance efforts have prompted some to criticize the level of scrutiny that the courts – established under the Foreign Intelligence Surveillance Act of 1978 (FISA) – currently provide with respect to the government's applications to engage in such surveillance. This book focuses on introducing a public advocate into the FISA's courts; foreign surveillance and the future of standing to sue post-clapper; and the decision of the supreme court of the United States in the case of Clapper v. Amnesty International et al.

Homeland Security: Key Issues and Considerations
Gavin M. Dyson
In series: Defense, Security and Strategies
Softcover: 978-1-62808-322-4. $52.00.
e-book: 978-1-62808-323-1. $52.00.

With the tenth anniversary of the establishment of the Department of Homeland Security (DHS), many observers are making a fresh assessment of where America's homeland security enterprise stands today. The DHS is currently the third largest department in the federal government, although it does not incorporate all of the homeland security functions at the federal level. The definition of homeland security remains unsettled, and questions about the effectiveness and efficiency of the department have been raised since it was first proposed. Evolution of America's response to terrorist threats has continued under the leadership of different Administrations, Congresses, and in a shifting environment of public opinion. This book outlines an array of homeland security issues that may come before Congress including, counterterrorism and security management; border security and trade; immigration; disaster preparedness, response, and recovery; and departmental management.

National Biosurveillance Strategy and Associated Science and Technology Roadmaps: Considerations and Priorities
Amanda Wendell
In series: Defense, Security and Strategies
Softcover: 978-1-62948-994-0. $52.00.

A well-integrated, national biosurveillance enterprise is a national security imperative. The United States' ability to detect quickly and characterize a potential incident of national significance that affects human, animal, or plant health is of paramount importance. Rapid detection and enhanced situational awareness are critical to saving lives and improving incident outcomes, whether the result of a bioterrorism attack or other weapons of mass destruction (WMD) threat, an emerging infectious disease, pandemic, environmental disaster, or a food-borne illness. Beyond the need to protect domestic interests, and
because health threats transcend national borders, the United States also plays a vital role within an international network of biosurveillance centers across the globe. This book focuses on the national strategy for biosurveillance and the national biosurveillance science and technology roadmap.

National Security and Preparedness: Issues, Developments, and Analyses. Volume 1
Thomas A. Donahue
In series: Defense, Security and Strategies
2013. 185 pp.
Hardcover: 978-1-62808-282-1. $110.00.
This book examines the national security and preparedness issues, developments and analyses facing the U.S. today. Topics discussed include the nation's air, land, and marine transportation systems that are designed for accessibility and efficiency and which in turn make them vulnerable to terrorist attack; the Transportation Security Administration's (TSA) Explosives Detection Canine Program; the Project BioShield Act and its development, procurement, and use of medical countermeasures against chemical, biological, radiological, and nuclear (CBRN) terrorism agents; efforts to address the medical needs of children in a CBRN incident; and additional actions needed to improve security of radiological sources at U.S. medical facilities.

Thomas A. Donahue
In series: National Security and Preparedness: Issues, Developments, and Analyses
Hardcover: 978-1-63117-153-6. $110.00.
This book examines the national security and preparedness issues, developments and analyses facing the U.S. today. Topics discussed include a unified national security budget; U.S.-EU cooperation against terrorism; immediate opportunities for strengthening the nation's cybersecurity; electronic grid vulnerability; and the security clearance process.

Navy Destroyers: Arleigh Burke (DDG-51) and Zumwalt (DDG-1000) Class Programs
Jeremiah N. Haag
In series: Defense, Security and Strategies
In series: Military and Veteran Issues
2013. 156 pp.
This book presents background information and potential oversight issues for Congress on the Navy's Arleigh Burke (DDG-51) and Zumwalt (DDG-1000) class destroyer programs. The Navy's proposed FY2013 budget requests funding for the procurement of two DDG-51s. The Navy for FY2013 is also requesting congressional approval to use a multiyear procurement (MYP) arrangement for the nine DDG-51s scheduled for procurement in FY2013-FY2017. Decisions that Congress makes concerning these programs could substantially affect Navy capabilities and funding requirements, and the U.S. shipbuilding industrial base.

The Defense Intelligence Agency: Historical Role in Perspective
Terry Wade
In series: Defense, Security and Strategies
Sofcover: 978-1-62948-683-3. $52.00.
e-book: 978-1-62948-684-0. $52.00.
The establishment of the Defense Intelligence Agency was the result of a confluence of long-term and short-term trends. Seen over the long duration, the creation of DIA was a part of the extended process of centralization in the Department of Defense that had been taking place since the National Security Act created the department. This book is designed to provide an understanding of the Defense Intelligence Agency’s participation in military and intelligence developments of the last half century. While history does not repeat itself, it does provide context, guideposts, and a framework for understanding the present. In some ways, the challenges discussed in this book and confronting today’s Intelligence Community personnel are similar to those faced by their cohorts from earlier generations.

The Defense Production Act: Elements and Considerations
Matthew R. Lehner
In series: Defense, Security and Strategies
2013. 96 pp.
Sofcover: 978-1-62948-088-6. $52.00.
The Defense Production Act of 1950 (DPA), provides the President a broad set of authorities to ensure that domestic industry can meet national defense requirements. In the DPA, Congress has found that “the security of the United States is dependent on the ability of the domestic industrial base to supply materials and services for the national defense and to prepare for and respond to military conflicts, natural or man-caused disasters, or acts of terrorism within the United States.” Through the DPA, the President can, among other activities, prioritize contracts for goods and services, and offer incentives within the domestic market to enhance the production and supply of critical materials and technologies when necessary for national defense. Since 1950, the DPA has been reauthorized over 50 times by Congress, most recently in 2009. The majority of DPA authorities will expire on September 30, 2014, unless reauthorized.

The National Network of Fusion Centers: Effectiveness, Capabilities, and Performance
Nancy C. Lincoln and Janet B. Seegmiller
In series: Defense, Security and Strategies
2013. 204 pp.
e-book: 978-1-62948-139-5. $135.00.
In the aftermath of the information sharing failures leading to the September 11, 2001 terrorist attacks that killed nearly 3,000 people in New York City, at the Pentagon, and in a Pennsylvania field, states and localities across the United States established what are known today as State and Major Urban Area Fusion Centers. Collectively known as the National Network of Fusion Centers, many of these (now numbering 78) fusion centers are still in their infancy. The Homeland has been attacked five times since 2001: the Little Rock Recruiting Station shooting (2009); the Fort Hood shooting (2009); the attempted bombing of Northwest Airlines Flight 253 on Christmas Day (2009); the attempted car bombing in Times Square (2010), and the Boston Marathon bombings (2013). In the wake of these attacks, we have come to understand that homeland security, including counterterrorism efforts, must be a national responsibility, a true and equal partnership across all levels of government, and inclusive of the American people themselves. A top down, wholly federal approach simply does not and cannot suffice. Fully integrating state and local law enforcement and emergency response providers as national mission partners requires a grassroots intelligence and analytic capability. This book provides a comprehensive study of the National Network of Fusion Centers in an
effort to understand current strengths and gaps and provide recommendations for improvement.

U.S. Air Force Bombers: Sustainment and Modernization Issues
Gustavo Briggs
In series: Defense, Security and Strategies
Softcover: 978-1-62948-772-4, $52.00.
e-book: 978-1-62948-773-1, $52.00.
The United States’ existing long-range bomber fleet of B-52s, B-1s, and B-2s are at a critical point in their operational life span. With the average age of each airplane being 50, 28, and 20 years old, respectively, military analysts are beginning to question just how long these aircraft can physically last and continue to be credible weapon systems. This book focuses on the sustainment and modernization of U.S. Air Force bombers, the sustainment of U.S. global leadership and provides a brief assessment of the January 2012 defense strategic guidance.

DISABILITY STUDIES

AbilityOne and the Employment of the Blind and Severely Disabled: Examination of a Federal Program
Kimberly Elson
In series: Disability and the Disabled-Issues, Laws and Programs
2014. 100 pp.
Softcover: 978-1-62948-789-2, $52.00.
e-book: 978-1-62948-790-8, $52.00.
Federal agencies need to exercise strong oversight to promote effectiveness and efficiency and prevent waste, fraud, and abuse—especially in a federal procurement program such as this, which is exempt from full and open competition requirements. This book focuses on the GAO examining how the AbilityOne Commission directs and oversees the CNAs, adds products and services to the program and assigns affiliates to provide them, and prices program projects. The book also focuses on the FY2010-2014 AbilityOne strategic plan and the procurement guide.

Accessibility and Inclusion of People with Disabilities in U.S. Foreign Assistance Programs
Triston W. Pruett
In series: Disability and the Disabled-Issues, Laws and Programs
Hardcover: 978-1-62808-324-8, $110.00.
This book’s aim is to advance understanding and to promote accessibility and inclusion of people with disabilities in foreign assistance programs funded by the United States. This book reviews U.S. federal disability laws, the United States Agency for International Development’s (USAID) Disability Policy, and the Convention on the Rights of Persons with Disabilities (CRPD) and discusses their application to U.S. foreign assistance programs. More than one billion people, 15 percent of the world’s population, have a disability. The number continues to grow as a result of aging populations, poverty, armed conflict, and AIDS. Postconflict and developing countries have a significant proportion of people with disabilities. Although people with disabilities make up a large segment of the population in many countries, they continue to face horrific forms of discrimination and segregation throughout the world. This book examines the work of USAID, the U.S. Department of State (DOS), and the U.S. Department of Defense (DOD), and provides recommendations that will strengthen the operation of these agencies by ensuring U.S. Government funding is used in a manner that is accessible to and inclusive of people with disabilities.

Leaders, Visionaries and Dreamers: Extraordinary People with Dyslexia and Other Learning Disabilities
Paul J. Gerber (School of Education, Virginia Commonwealth University, Richmond, VA, USA) and Marshall H. Raskind (Bainbridge Island, WA, USA)
In series: Disability and the Disabled-Issues, Laws and Programs
Softcover: 978-1-62808-873-1, $45.00.
This book is an in-depth look at 12 incredible people with LD and dyslexia whose lives are characterized by major accomplishments and contributions that they have made in their respective fields as well as on the contemporary American scene. These men and women are from a variety of fields – arts and literature, science, politics and sports. Included are individuals such as Gavin Newsom, Lieutenant Governor of California; Gaston Caperton, former governor of West Virginia and President of the College Board; MacArthur Fellowship “Genius Award”-winning paleontologist, Jack Horner; one of America’s pre-eminent visual artists, Chuck Close; actor Henry Winkler and financier Charles Schwab. The book is not framed as a “feature piece” but one that develops the trials, tribulations and triumphs in unique ways, befitting those who have become extraordinarily successful despite the odds. The writing is constructed to explore a myriad of underlying dynamics of accomplishment to give the reader a thematic view of LD and dyslexia by hearing the voices of those included in the book. The content for the book was derived from extensive interviews and is presented in a reader-friendly format from what has been gleaned from research and the prevailing wisdom in this area over the last 25 years.

Parents with Disabilities and Their Children: Rights, Barriers, Supports and Treatment
Tomas M. Braun
In series: Disability and the Disabled-Issues, Laws and Programs
2013. 316 pp.
Hardcover: 978-1-62808-359-0, $230.00.
e-book: 978-1-62808-360-6, $230.00.
Despite a dark history marked by the eugenics movement, increasing numbers of people with disabilities are choosing to become parents. Recent research reveals that more than 4 million parents (six percent of American mothers and fathers) are disabled. This number will unquestionably increase as more people with disabilities exercise a broader range of lifestyle options as a result of social integration, civil rights, and new adaptive technologies. Likewise, there has been a dramatic increase in the number of veterans who are returning from war with service-connected disabilities, some of whom may already be parents and others who will enter parenthood after acquiring their disability. The right to parent without interference is protected by the U.S. Constitution and balanced by the judicially recognized power of the state to interfere to protect the well-being of its children. This book provides a comprehensive review of the barriers and facilitators people with diverse disabilities (including intellectual and developmental disabilities, psychiatric disabilities, sensory disabilities, and physical disabilities) experience when they are exercising their fundamental right to create and maintain families, with a focus on the persistent, systemic, and pervasive discrimination against parents with disabilities.
Postsecondary Students With Disabilities: Assessments of Federal Support and Transition Assistance
Lindsey E. Guthrie
In series: Disability and the Disabled-Issues, Laws and Programs
Softcover: 978-1-62948-779-3. $52.00.
Students with disabilities face several longstanding challenges accessing services that may assist them as they transition from high school into postsecondary education or the workforce services, such as tutoring, vocational training, and assistive technology. Eligible students with disabilities are entitled to transition planning services during high school, but after leaving high school, to receive services that facilitate their transition they must apply as adults and establish eligibility for programs administered by multiple federal agencies. This book focuses on ways to better the federal coordination, its ability to lessen challenges students with disabilities face in the transition from high school.

The Developmental Disabilities Act: Recommendations and Strategies
Sarah N. Martakis
In series: Disability and the Disabled-Issues, Laws and Programs
2013. 92 pp.
Hardcover: 978-1-62808-361-3. $110.00.
e-book: 978-1-62808-362-0. $110.00.
The Developmental Disabilities Assistance and Bill of Rights Act (DD Act), signed into law in 1963 and reauthorized most recently in 2000, is the nation’s policy and civil rights framework for more than 4.7 million Americans with intellectual and developmental disabilities (ID/DD). When the law was passed in 1963, Congress established a set of principles and programs focused on improving the lives of people with ID/DD; protecting their civil and human rights; and promoting their maximum potential through increased independence, productivity, and integration into the community. Today, these goals must be revitalized and translated into a coordinated federal strategy focused on supporting citizens with ID/DD in achieving optimal self-sufficiency, economic advancement, and full participation in the community. This book examines specific regulatory and legislative strategies that could be deployed to ensure a solid, unified federal policy aimed at fully realizing the intent of the DD Act to give people with ID/DD the information, skills, opportunities, and support to make informed choices and decisions about their lives.

Voting Access for Disabled and Long-Term Care Voters: Assessments
Henry Wilhelm
In series: Disability and the Disabled-Issues, Laws and Programs
Hardcover: 978-1-62808-326-2. $110.00.
Voting is fundamental to our democracy and federal law generally requires polling places to be accessible to all eligible voters, including those with disabilities and the elderly. However, during the 2000 federal election, the Government Accountability Office (GAO) found that only 16 percent of polling places had no potential impediments to voting access for people with disabilities. To address these and other issues, Congress enacted the Help America Vote Act of 2002 (HAVA), which required each polling place to have an accessible voting system by 2006. Congress asked the GAO to reassess voting access on Election Day 2008, and also to study voter accessibility at long-term care facilities. This book examines the progress made from 2000 to 2008 to improve voter accessibility in polling places, including relevancy to long-term care facilities and the steps the Department of Justice has taken to enforce HAVA voting access provisions.

ECONOMICS

A Compendium of International Real Estate and Construction Issues. Volume 2
Raymond Abdulai (Liverpool John Moores University, Liverpool, UK)
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-62948-916-2. $95.00.
Even though real estate and construction issues are interconnected, they are often treated as if they were not. There is, therefore, the need for research that engages with these issues to be conducted in an integrated manner. This book, which is the second series, is in response to that need. It is a collection of contributions from five experts, which integrates research in these interrelated disciplines from an international perspective.

After the Financial Crisis: Analyses of Key Policy Responses and Economic Recovery
Edgar I. Bair
In series: Global Recession - Causes, Impacts and Remedies
Softcover: 978-1-62948-593-5. $52.00.
Five years ago, a financial crisis unlike any in generations rocked Wall Street, turning a recession that was already hammering Main Street into the worst economic crisis since the Great Depression. In the months before President Obama took office, the economy was shrinking at a rate of over 8%. Businesses were shedding 800,000 jobs a month. Banks had stopped lending to families and small businesses. The iconic American auto industry – the heartbeat of American manufacturing – was on the brink of collapse. It was a crisis that would ultimately cost millions of Americans their jobs, their homes, and their savings – and the decades-long erosion of middle-class security was laid bare for all to see and feel. Thanks to the grit and resilience of the American people, we’ve cleared away the rubble from the financial crisis and begun to lay a new foundation for stronger, more durable economic growth. This book describes 15 key elements of the response to the financial crises – providing an overview of the state of the economy and the financial system, the actions the Administration took in conjunction with the Federal Reserve and other regulators, and where we are now.

Building Blocks in Modeling a Market Economy: The Dobrescu Macromodel of Romania
Bianca Pauna and Corina Saman (Centre for Macroeconomic Modelling, National Institute for Economic Research (NIER), Romanian Academy)
In series: Economic Issues, Problems and Perspectives
2013. 201 pp.
Hardcover: 978-1-62808-551-8. $150.00.
In most countries there is a growing demand for forecasting tools, and Romania is no exception. The main forecasting tool used by the...
Romanian decision makers in order to construct prognosis for the economy or in order to analyze the effect of different policies is the 2005 Dobrescu Model. Although the Dobrescu macro-model has proved its usefulness, factors have pointed toward the need to update it. This book presents an up-dated version of the Dobrescu Model of the Romanian economy, structured as independent blocks. The model consists of 6 blocks. In the main block, the main macroeconomic indicators are forecasted: the GDP and its components (with the exception of the budget expenses which are computed in the budget block), the labor market indicators (participation rate and unemployment rate), labor income, foreign trade and prices and the exchange rate. The General Consolidated Budget block links the budget variables to other macroeconomic indicators from the main block, thus enabling an analysis of the implications that different policies might have on the budget. The budget revenues are connected directly to the legal rates, thus making possible the observation effect of tax changes. The approach permits the separation of the factors related to the macroeconomic environment and the factors related to fiscal policies.

Contemporary Marine and Maritime Policy
Jingjing Xu (Plymouth Graduate School of Management, Plymouth University, Plymouth, UK)
In series: Business Economics in a Rapidly-Changing World
Hardcover: 978-1-62948-807-3, $195.00.
The importance of marine and maritime policy can hardly be overstated in view of the fact that over 90% of world trade is sea-borne and the economic interests of developed, developing and emerging economies alike are all heavily dependent on international trade and commerce.

Economics of Debt
Mark A. Petersen (Faculty of Commerce and Administration, North-West University (Mafikeng) Private Bag, Mmabatho, South Africa)
In series: Economic Issues, Problems and Perspectives
In series: Global Economic Studies
Hardcover: 978-1-62618-642-2. $150.00.
e-book: 978-1-62618-792-4. $150.00.
Recently, debates about the economics of debt have been dominated by issues related to the global financial crisis. In this edited volume, the relationships between this crisis and euro zone sovereign debt, debt mechanics, the Greek economic decline, European budget rules, debt obligations, convertible bonds, household indebtedness, financial guarantees as well as proposed Basel III leverage and liquidity regulation is explored. The sovereign debt crisis and weak European economic growth has damaged the European and Monetary Union and the Euro itself. Among the causes of this crisis is rapid government debt level growth, trade imbalances, monetary policy inflexibility and loss of confidence. Moreover, the consequences involve disrupted bond markets and the banking sector, depreciation of the Euro, reduced economic growth, loss of confidence, reduced remittances, tight fiscal measures and politics. Initial crisis cues included the creation of the European Financial Stability Facility, the European, Financial Stabilization Mechanism and the Brussels Agreement. In particular, the book investigates which economic mechanisms of the currency union have managed to turn the European political and cultural heterogeneity into such severe external imbalances between the Northern and Southern euro zone. Another problem addressed is the extent to which the external debt accumulation of Southern EMU countries can be attributed to euro capital market integration. Also, we employ the most recent data on money, credit, industrial production and productivity to show that the Greek drama is an almost ideal application of the Austrian ideas. A reinforced budget rule, according to which structural budget balances must be virtually zero, has been adopted. In this edited volume, we argue that such a target can make fiscal and monetary policies pro-cyclical.

Review of Tropical Agriculture
Eli Reifman (Executive Director, Alliance for a Green Revolution in Africa (AGRA) Private Bag, Nairobi, Kenya)
In series: Economic Issues, Problems and Perspectives
2013. 345 pp.
Hardcover: 978-1-62948-678-1, $150.00.
e-book: 978-1-62948-713-7, $150.00.
Review of Tropical Agriculture is a peer-reviewed international journal that focuses on the production, processing, marketing and consumption of tropical crops. The journal publishes articles on the economic, social and environmental aspects of tropical agriculture, with a particular emphasis on smallholder farmers and their agricultural production systems. The journal is open to contributions from all disciplines and perspectives, including economics, social sciences, environmental sciences, and policy analysis.

Focus on Civilizations and Cultures
Oscar Alfranca Burriel (Universitat Politècnica de Catalunya, Campus del Baix Llobregat, DEAB ESAB, Barcelona, Spain)
In series: Economic Issues, Problems and Perspectives
In series: Focus on Civilizations and Cultures
Hardcover: 978-1-62808-510-5. $150.00.

Economics of Culture: New Aspects and New Trends
Oscar Alfranca Burriel (Universitat Politècnica de Catalunya, Campus del Baix Llobregat, DEAB ESAB, Barcelona, Spain)
In series: Economic Issues, Problems and Perspectives
In series: Focus on Civilizations and Cultures
Hardcover: 978-1-62808-510-5. $150.00.

The aim of this book is to incorporate the main idea that culture is directly related to economic activity, in economic analysis, from a multidisciplinary perspective. From this very first perception, several difficulties appear. First of them are related to the use of rigorous and testable methodologies that could allow the quantification of the value of an artistic work, and even the consideration of what an artistic work could be. In the book, we also try to present these problems from an extensive perception, in order to take into account, not only aspects strictly related to economics, but also to the interdependence of arts and culture with a wide amount of different perspectives of economic analysis. The book is mainly structured into two parts. The first is to introduce a discussion on the value of culture and the value of artistic works. This discussion opens the door to an essential idea in the economics of culture such as the theoretical foundations to estimate the value of art and culture, and the relevance of the existence an artistic work. The second part of this work is mainly concerned with different economic issues related to arts and culture, under a multidisciplinary methodology. Specifically, in this part of the book, eleven papers are included, in which different issues related to culture economics are proposed and analyzed from economic, social, institutional and environmental perspectives.

Exchange Rates and Currency Debates: Issues in Global Monetary Policy
Darren Byers
In series: Monetary, Fiscal and Trade Policies
2013. 166 pp.
Hardcover: 978-1-62948-616-1. $110.00.
Exchange rates are important in the international economy, because they affect the price of every country’s imports and exports, as well as the value of every overseas investment. Following the global financial crisis of 2008-2009 and ensuing economic recession, disagreements among countries over exchange rates have become more widespread. Some policy leaders and analysts contend that there is a “currency war” now underway among certain countries. At the heart of current disagreements is whether or not countries are using exchange rate policies to undermine free markets and intentionally push down the value of their currency in order to gain a trade advantage at the expense of other countries. A weak currency makes exports cheaper to foreigners, which can lead to higher exports and job creation in the export sector. However, if one country weakens its currency, there can be implications for other countries. In general, exporters and firms producing import-sensitive goods may find it harder to compete against countries with weak currencies. However, consumers and businesses that rely on inputs from abroad may benefit when other countries have weak currencies, because imports may become cheaper. The United States has found itself on both sides of the current debates over exchange rates. This book provides an overview of exchange rate and currency debate issues and global monetary policy.

**Exchange Rates in Developed and Emerging Markets: Practices, Challenges and Economic Implications**

Mohsen Bahmani-Oskooee (Department of Economics, The University of Wisconsin-Milwaukee, Milwaukee, WI, USA)

In series: Economic Issues, Problems and Perspectives

In series: Global Economic Studies


Hardcover: 978-1-62808-164-0. $150.00.

e-book: 978-1-62808-200-5. $150.00.

Exchange rate is perhaps one of the most important macroeconomic variables that link the economy of one country with the rest of the world. When it changes, it affects almost all other sectors and many other macro variables. For example, when a country’s currency depreciates, its exports become cheaper in terms of foreign currency and imports more expensive in terms of domestic currency. By exporting more and importing less, the trade balance is improved. Or when domestic currency depreciates (foreign currency appreciates), domestic currency value of foreign assets held by domestic residents increases. If this increase is perceived as an increase in wealth, domestic residents could increase their consumption at home. This leads to an increase in demand for money. However, if there are expectations of further appreciation of foreign currency, they may hold more foreign currency and less domestic currency. Other channels through which currency depreciation affects domestic consumption is through the redistribution effect. Depreciation is inflationary. Since wages do not adjust to inflation instantaneously, profit will be realized at the cost of workers. This amounts to transferring income from workers to producers. Since workers have a high propensity to consumers than producers, eventually domestic consumption declines. Other variables that are said to be affected by exchange rate changes include domestic investment, income distribution, the stock market, etc. This book deals with economic implications of exchange rate changes in emerging economies pertaining to some of the issues mentioned above.

**Federal Budget Issues, Carryover Balances, and Sequestration Questions**

Melissa L. Desmond

In series: Economic Issues, Problems and Perspectives


Hardcover: 978-1-62948-842-4. $110.00.

e-book: 978-1-62948-843-1. $110.00.

The federal budget is central to Congress’s ability to exercise its “power of the purse.” Recent economic turmoil put strain on the federal budget due to declining revenues and increasing spending levels. Subsequently, policies enacted to restrain spending, along with an improving economy, have put the federal budget on a more sustainable path in the near term. In this book, the authors discuss issues in the federal budget for FY2014 and beyond. Key questions that should be considered when evaluating differences in federal accounts are discussed, and frequently asked questions in the sequestration as a budget enforcement process are answered.

**Federal Excise Taxes: Elements and Select Analyses**

Jerold M. Busch

In series: Economic Issues, Problems and Perspectives

2013. 103 pp.

Softcover: 978-1-62948-483-9. $52.00.

e-book: 978-1-62948-484-6. $52.00.

There are four common types of excise taxes: (1) sumptuary (or “sin”) taxes, (2) regulatory or environmental taxes, (3) benefit-based taxes (or user charges), and (4) luxury taxes. Sumptuary taxes were traditionally imposed for moral reasons, but are currently rationalized, in part, to discourage a specific activity that is thought to have negative spillover effects (or “externalities”) on society. Regulatory or environmental taxes are imposed to offset external costs associated with regulating public safety or to discourage consumption of a specific commodity that is thought to have negative externalities on society. Benefit-based taxes (which include user charges) are imposed to charge users of a particular public good for financing and maintenance of that public good. Lastly, luxury taxes are primarily imposed as one way to raise revenue, particularly from higher-income households. This book provides an introduction and general analysis of excise taxes. First, a brief history of U.S. excise tax policy is provided. Second, the various forms of excise taxes and their respective administrative advantages and disadvantages are described. Third, the effect of federal excise taxes on federal, state, and local tax revenue is discussed. Fourth, the economic effects of various types of excise taxes are analyzed. The effects on consumer behavior and equity among taxpayers could be important issues for assessment of current excise tax policy or for the design of new excise taxes.

**Financial Crises: Identification, Forecasting and Effects on Transition Economies**

Cooper A. Hawthorne

In series: Global Economic Studies

In series: Global Recession - Causes, Impacts and Remedies

2013. 222 pp.

Hardcover: 978-1-62808-293-7. $150.00.


In this book, the authors present topical research in the study of the identification, forecasting and effects on transition economies relating to financial crises events. Topics discussed include the relation between the financial health of local governments and the socioeconomic environment in periods of expansion and economic crisis in Spain; age differentials and the impact of the financial crisis on social relationships; what Asia and Europe did to fight the financial crisis; determinants of firm performance during and after the 2008-09 financial crisis in Europe and Central Asia; a survey of country versus industry effects in international equity returns; the Chinese economy in transition; Iceland’s financial crisis; an empirical exploration of the causes of the 2008 financial crisis; the constitution of financial uncertainties during the Greek sovereign debt crisis; and the correlation and network structure of international financial markets in times of crisis.
Financial Markets: Recent Developments, Emerging Practices and Future Prospects
Mohsen Bahmani-Oskooee and Sahar Bahmani
(Department of Economics, The University of Wisconsin-Milwaukee, Milwaukee, WI, USA)
In series: Financial Institutions and Services
In series: Business Economics in a Rapidly-Changing World
Hardcover: 978-1-62948-420-4. $150.00.
Financial markets are said to be an important source in providing capital to other sectors in every economy. Their establishment, operation, development, and practices have important implications in the development process of every country. There are also challenges that every country must deal with, such as institutional rigidities in some countries that could curtail financial development and introduce severe challenges. Dealing with the challenges and introducing new practices to smooth out the operation of the financial markets is an important goal. This book focuses on some of the issues related to recent developments in financial markets, their rigidities, and implications for the future of these markets, compiled over nine chapters. Topics discussed include the impact of financial development on income distribution; optimizing trading strategies and decision making rules to trade with a special emphasis on reducing investment risk; similarities and differences in retail and institutional use of alternative investments; a new method of analyzing information and forecasting foreign exchange and financial markets; improving communication skills in reducing risks in financial markets and retail clients; and, finally, how to stabilize the government bond market.

Foreign Direct Investment (FDI): Policies, Economic Impacts and Global Perspectives
Enzo Guillen and Lucas Chauvet
In series: Economic Issues, Problems and Perspectives
In series: Global Economic Studies
2013. 312 pp.
Hardcover: 978-1-62808-403-0. $150.00.
In this book, the authors present topical research in the study of the policies, economic impacts and global perspectives of Foreign Direct Investment (FDI). Topics discussed include Chinese and Italian investment in Africa’s extractive industries; a case study in Mexico of productivity spillovers from Foreign Direct Investment; evidence from the EU at the regional level of FDI and economic growth; outward FDI to China and the parent firm’s ability to create value added per worker; Foreign Direct Investment on ASEAN’s income inequality revisited; global trends in R&D-intensive FDI; the impact of corruption on the timing and mode of entry by U.S. firms in China; the proliferation of Free Trade Agreements and their impact on FDI; Union structure and inward FDI; inward FDI performance and determinants of FDI regional disparity in China; trade, FDI, exchange rate, and the effect of corporate tax reduction policy; evidence from plant-level data of FDI and productivity spillovers; and regional FDI spillovers in the Swiss service/construction industry.

Foreign Holding Companies and Hybrid Capital Instruments: Select Analyses Required by the Dodd-Frank Act
Luka Perkuljan
In series: Financial Institutions and Services
In series: Banking and Banking Developments
Hardcover: 978-1-62808-207-4. $110.00.
During the 2007-2009 financial crisis, many U.S. and international financial institutions lacked capital of sufficient quality and quantity to absorb substantial losses. In 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act introduced new minimum capital requirements for banks and savings and loan holding companies, including intermediate holding companies of foreign banks. Hybrid capital instruments are securities that have characteristics of both equity and debt. The Federal Reserve allowed bank holding companies to include limited amounts of hybrid instruments known as trust preferred securities in the highest level of required capital, although other federal banking regulators never approved these or other hybrid instruments for this purpose. Responding to concerns that these instruments did not perform well during the 2007-2009 financial crisis, in 2010 the Dodd-Frank Act required regulators to establish rules that will exclude the instruments from Tier 1 capital. This book examines the potential effects of changes in U.S. capital requirements on foreign-owned intermediate holding companies and the use, benefits, and risks of hybrid instruments as Tier 1 capital.

Governance Risks in Organizations: A Clinical Approach with Tools for Decision-Making
Rodolfo Apreda (Universidad del Cema (Ucema), Buenos Aires, Argentina)
In series: Global Economic Studies
Hardcover: 978-1-62100-412-7. $150.00.
The purpose of this book is to get the reader acquainted with the basic features that run through the fields of corporate, public and global governance; to introduce the new subject of Governance Risks, within the context of organizations in a global economy; to provide a set of tailor-made tools and make them operational, so as to cope with governance risks. It also provides a clinical approach to diagnose and treat governance failures, the incremental cash-flow model that strongly articulates with the clinical approach, the index of governance performance, from which the metrics of governance risks evolves eventually. This book conveys a self-contained treatment based on step-by-step learning, from the basics of the subject through building blocks that deal with tools for decision-making, and ending up with the Governance-Risk Scoreboard.

Improper Payments and Recovery Audits of Federal Agencies: Legislation and Analyses
Jeffrey B. Powers
In series: Economic Issues, Problems and Perspectives
2014. 89 pp.
Softcover: 978-1-62948-844-8. $52.00.
e-book: 978-1-62948-845-5. $52.00.
As Congress searches for ways to generate savings, reduce the deficit, and fund federal programs, it has held hearings and passed legislation to prevent and recover improper payments. Improper payments are payments made in an incorrect amount, payments that should not have been made at all, or payments made to an ineligible recipient or for an ineligible purpose. The total amount of improper payments may be even higher than reported because several agencies have yet to determine improper payment amounts for many programs, including some with billions of dollars in annual expenditures. This book discusses the legislation, implementation and analysis of improper payments and recovery audits. The authors of this book also provide a testimony on the remaining challenges and strategies for government-wide reduction efforts of improper payments, and a testimony on new steps to strengthen the integrity of federal payments.
Insurance Regulation: Background and Issues
Nelson R. Phillips
In series: Economic Issues, Problems and Perspectives
Softcover: 978-1-62948-141-8. $52.00.
e-book: 978-1-62948-142-5. $52.00.

Laffer-Keynesian Synthesis and Macroeconomic Equilibrium
Iuri Ananiashvili and Vladimir Papava (Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia)
In series: Economic Issues, Problems and Perspectives
Softcover: 978-1-62948-668-0. $52.00.
e-book: 978-1-62948-726-7. $52.00.

Manufacturing in Advanced Economies: Comparisons and Government Supports
John Carratore and Duncan T. Vastos
In series: Global Economic Studies
Softcover: 978-1-62948-399-3. $52.00.
e-book: 978-1-62948-400-6. $52.00.

Over the last decade, the United States lost about one-third of its manufacturing jobs, raising concerns about U.S. manufacturing competitiveness. There may be insights to glean from government policies of similarly-situated countries, which are facing some of the same challenges of increased competition in manufacturing from developing countries. The Government Accountability Office (GAO)
was asked to identify innovative foreign programs that support manufacturing that may help inform U.S. policy. Specifically, GAO examined (1) government strategies and programs other advanced economies have implemented to approach issues similar to those facing U.S. manufacturing, and (2) the key distinctions between government approaches to support manufacturing in other advanced economies and those in the United States. Based on input from experts and federal officials, and an analysis of manufacturing programs in other advanced countries, the GAO selected Canada, Germany, Japan, and South Korea for study. In each country, GAO interviewed program officials and reviewed documents describing their programs. This book examines and identifies distinctions between foreign and U.S. approaches to supporting manufacturing. The GAO researched comparable programs in the United States, and interviewed staff administering those programs.

Money, Economics, and Finance: Developments, Analyses and Research. Volume 2
Clifford Dobrowski
In series: Money, Economics, and Finance: Developments, Analyses and Research
Hardcover: 978-1-62948-415-0. $110.00.

In this second book of the series "Money, Economics, and Finance: Developments, Analyses, and Research", topics discussed include the economic significance, current risk, and policy responses to deflation; crowdfunding and the exemption for small firms from Securities and Exchange Commission registration requirements; economic downturns and crime; auction-rate securities; and consumer fee increases in the usage of automated teller machines.

Offshore Profit Shifting and U.S. Tax Code
Weaknesses: Analyses and the Apple Inc. Case Study
Reny Toupin
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-62808-479-5. $110.00.
e-book: 978-1-62808-480-1. $110.00.

On May 21, 2013, the Permanent Subcommittee on Investigations (PSI) of the U.S. Senate Homeland Security and Government Affairs Committee held a hearing that was a continuation of a series of reviews conducted by the Subcommittee on how individual and corporate taxpayers are shifting billions of dollars offshore to avoid U.S. taxes. This book examines those hearings and how Apple Inc., a U.S. multinational corporation, has used a variety of offshore structures, arrangements, and transactions to shift billions of dollars in profits away from the United States and into Ireland, where Apple has negotiated a special corporate tax rate of less than two percent. This book examines how Apple Inc. transferred the economic rights to its intellectual property through a cost sharing agreement with its own offshore affiliates, and was thereby able to shift tens of billions of dollars offshore to a low tax jurisdiction and avoid U.S. tax. Apple Inc then utilized U.S. tax loopholes, including the so-called "check-the-box" rules, to avoid U.S. taxes on $44 billion in taxable offshore income over the past four years, or about $10 billion in tax avoidance per year. The book also examines some of the weaknesses and loopholes in certain U.S. tax code provisions, including transfer pricing, Subpart F, and related regulations, that enable multinational corporations to avoid U.S. taxes.

Pensions: Policies, New Reforms and Current Challenges
Thom Reilly (School of Social Work, San Diego State University, California, USA)
In series: Business Economics in a Rapidly-Changing World

This book is an attempt to give a global explanation to the global crisis that the Western world has been experiencing since 2007. The crisis was explained as a financial crisis, a debt crisis, and a currency crisis. However, the author explains how we should look at the crisis as a general economic phenomenon, in which the financial, debt and currency aspects are related to each other, but are not enough to clearly understand the root of the boom and bust economy. Through a deep methodological analysis, the author clarifies why present economists are not able to understand the real nature of the crisis and limit their look to some aspects of it. Also, referring to great past economists like Schumpeter, Spiethoff, Mises and Hayek, he tries to build a new integrated approach to business cycle theory, able to take into account different contributions. A description is included as to why the free market organization can work in developing an economic system with sustainable growth, while central planning cannot. Finally, there’s an explanation as to why Europe today should not abandon EURO currency, identifying a way out from the present situation, stressing how only a radical change toward a real free market society will allow the system, after a painful readjustment, to walk toward the light.
Poverty in the U.S. and the Supplemental Poverty Measure

Marlin C. Haas

In series: Economic Issues, Problems and Perspectives
In series: Social Issues, Justice and Status

Hardcover: 978-1-62948-360-3. $110.00.
e-book: 978-1-62948-361-0. $110.00.

In 2011, the U.S. poverty rate was 15.0% — 46.2 million persons were estimated as having income below the official poverty line. Neither the poverty rate nor the number of persons counted as poor differed statistically from a year earlier. Since 2006, when the poverty rate stood at 12.3%, marking its most recent low, the number of poor has grown by 9.7 million persons. The 46.2 million persons counted as poor in both 2011 and 2010 are the largest numbers counted in the measure’s recorded history, which goes back as far as 1959. The 2011 poverty rate of 15.0%, statistically tied with the 2010 rate, is the highest seen in the past 18 years (1993). The increase in poverty since 2006 reflects the effects of the economic recession that began in December 2007. The level of poverty tends to follow the economic cycle quite closely, tending to rise when the economy is faltering and fall when the economy is in sustained growth. This most recent recession, which officially ended in June 2009, was the longest recorded (18 months) in the post-World War II period. Even as the economy recovers, poverty is expected to remain high, as poverty rates generally do not begin to fall until economic expansion is well underway. Given the depth and duration of the recession, and the projected slow recovery, it will likely take several years or more before poverty rates recede to their 2006 pre-recession level. This book examines poverty in the U.S. and the Supplemental Poverty Measure (SPM).

Progress in Economics Research. Volume 27

Albert Tavidze

In series: Progress in Economics Research

Hardcover: 978-1-62808-201-2. $150.00.

This series spans the globe presenting leading research in economics. International applications and examples of economic progress are invaluable in a troubled world with economic booms bursting like so many penny balloons. Topics discussed include a comprehensive stage model and numerical solution of the renewal equation is presented. In addition, means of this kind of stochastic process. A method dealing with the simple actuarial model can be simulated well by adequate models. This book also examines the renewal theory in different approaches are provided that use alternative and more broad methods from non equilibrium statistical mechanics. The crisis’s magnitude.

Progress in Economics Research. Volume 28

Albert Tavidze

In series: Progress in Economics Research

Hardcover: 978-1-62948-748-9. $95.00.
e-book: 978-1-62948-749-6. $95.00.

This series spans the globe presenting leading research in economics. International applications and examples of economic progress are invaluable in a troubled world with economic booms bursting like so many penny balloons. Topics discussed include creating and conserving shareholder wealth in emerging markets; ethics and leadership in global environments; changes in central bank reaction functions of central and eastern European countries in the financial crisis; tax morale and perceptions on social mobility, fairness and meritocracy in Latin America; the global financial crisis revisiting industrial policy and institutional infrastructure; cigarette tax systems in Thailand and other countries; and a commentary on charitable donations and estate tax.

Reducing the Federal Deficit: A Compendium of Options

Albert T. Wilburn

In series: Economic Issues, Problems and Perspectives


Congress faces an array of policy choices as it confronts the dramatic increase in the federal government’s debt over the past several years and the prospect of large annual budget deficits and further increases in that debt that are projected to occur in coming decades under current law. To help inform lawmakers about the budgetary implications of various approaches to changing federal policies, the Congressional Budget Office (CBO) periodically issues a compendium of policy options that would affect the federal budget as well as separate reports that include policy options in particular areas. This book presents options that would decrease federal spending or increase federal revenues over the next decade, and addresses the long-run budget deficit.

Retirement Savings and Security: Selected Elements and Considerations

Linda A. Eisterhold

In series: Retirement Issues, Plans and Lifestyles

e-book: 978-1-62948-134-0. $135.00.

This book provides an overview of select elements and considerations of retirement savings and security with a focus on Social Security financing and benefits under current law; eligibility requirements, contribution limits, tax deductibility of contributions, and rules for withdrawing funds from traditional and Roth Individual Retirement accounts (IRAs); 401(k) plans and retirement savings; Federal Employees’ Retirement System benefits and financing and the role of the Thrift Savings Plan; and the benefits, risks and regulations of annuities with guaranteed lifetime withdrawals.

Stock Markets: Emergence, Macroeconomic Factors and Recent Developments

Filippo Petroni (Department of Economics & Business, University of Cagliari, Italy), Flavio Prattico (Department of Industrial Engineering, Information and Economy, Italy) and Guglielmo D’Amico (University “G. d’Annunzio,” Department of Pharmacy, Italy)

In series: Economic Issues, Problems and Perspectives

Hardcover: 978-1-62808-751-2. $150.00.

Much effort has gone into the study of financial markets and how prices vary with time. The usual approach of random walk is known to be inadequate to fully describe price dynamics. In this book, many different approaches are provided that use alternative and more adequate models. This book also examines the renewal theory in actuarial science. A simple actuarial model can be simulated well by means of this kind of stochastic process. A method dealing with the numerical solution of the renewal equation is presented. In addition, based on a theoretical model for opinion spreading on a network, through avalanches, the effect of external field is now considered, by using methods from non-equilibrium statistical mechanics. Furthermore, it is evident that the 2008-US sub-prime mortgage crisis broadly affected international financial markets. The crisis’s magnitude
impacted on Asian financial markets has not had much attention. To fill this gap, the authors examine changes in dependence structures between the US market and Asian financial markets before and after the crisis. The effect of optimal fiscal rules within a stochastic model of Keynesian type in the context of Poole (1970) analysis is derived. The authors extend the original Poole results concerning the output stabilization properties of monetary policy to the case of fiscal policy. Different stochastic models based on a semi-Markov chains approach are used to study the high frequency price dynamics of traded stocks. The authors show that the models are able to reproduce important stylized facts of financial time series as the persistence of volatility. Finally, a new multi-agent model of the stock market is formulated that contains four states in which the agents may be located.

**Strategies of Economic Growth and Catch-Up: Industrial Policies and Management**

*Hans W. Gottinger (STRATEC, Munich, Germany), Matthews F.A. Goosen (Alfaisal University, Riyadh, Saudi Arabia)*

Hardcover: 978-1-61122-422-1. $129.00.
Softcover: 978-1-62808-857-1. $69.00.
e-book: 978-1-61209-022-1. $129.00.

Economic growth is a major source of wealth creation at the national and international level. It elevates a nation’s standard of living as well as being able to lift it out of poverty. With suitable guidance on population growth, fiscal soundness, environmentally sustainable development and resource use, an acceptable distribution of income and a constant rate of technical progress, economic growth will always have a quantitative, as well as a qualitative dimension, both of which improve general living conditions and individual growth. This book argues that a key driver of economic growth among nations or regional economic entities is an intrinsic, ongoing, perpetual and historically observable rivalry to propel a state’s standing, prestige, power and economic performance through getting ahead of or not to fall too much behind its rivals in a pecking order.

**Sustainability of State and Local Government Pension Plans: Trends and Strategies**

*Natt B. Price*

In series: *Economic Issues, Problems and Perspectives* 2013. 87 pp.
Softcover: 978-1-62948-129-6. $52.00.

Over 27 million employees and beneficiaries are covered by state and local government pension plans. However, the recent economic downturn and associated budget challenges confronting state and local governments pose some questions as to the sustainability of these plans, and what changes, if any, state and local governments are making to strengthen the financial condition of their pension plans. The Government Accountability Office (GAO) was asked to examine recent trends in the financial condition of state and local government pension plans; and strategies state and local governments are using to manage pension costs and the impacts of these strategies on plans, sponsors, employees, and retirees. This book analyzes sector-wide financial conditions based on national-level data on pension funding from the U.S. Census Bureau and others, and reviews information on recent state legislative changes affecting government pensions from annual reports prepared by the National Conference of State Legislatures (NCSL).

**Tax Deductions: Analyses and Proposals on Itemized and Individual Bases**

*Pierre Thibault*

Softcover: 978-1-62808-491-7. $52.00.
e-book: 978-1-62808-492-4. $52.00.

The President and leading Members of Congress have indicated that income tax reform is a major policy objective. Some itemized deductions are visible candidates for “broadening the base” of the individual income tax and cutting back on tax expenditures and primarily consist of deductions for mortgage interest, state, and local taxes, and charitable contributions. The benefits of itemized deductions are concentrated among higher-income individuals, and that is particularly the case for state and local income tax deductions and charitable deductions. Proposals for addressing these provisions fall into two general classes. One approach could include repealing or restricting all itemized deductions. A different approach would consider each type of deduction and tailor a reform to the particular objectives and merits of the deductions, such as a lower ceiling on home mortgage interest deduction and a floor for charitable contributions. This book analyzes various proposals to restrict itemized deductions, both across-the-board and individually tailored, using standard economic criteria of economic efficiency, distribution, simplicity, and estimated revenue effects.

**The Fair Labor Standards Act and National Labor Relations Act**

*Julian A. Sotelo*

In series: *Economic Issues, Problems and Perspectives* 2013. 96 pp.
Softcover: 978-1-62808-301-9. $52.00.

The Fair Labor Standards Act (FLSA) provides workers with minimum wage, overtime pay, and child labor protections. The FLSA covers most, but not all, private and public sector employees. In addition, certain employers and employees are exempt from coverage. Provisions of the FLSA that are of current interest to Congress include the basic minimum wage, subminimum wage rates, exemptions from overtime and the minimum wage for persons who provide companionship services, the exemption for employees in computer-related occupations, compensatory time in lieu of overtime pay, and break time for nursing mothers. The National Labor Relations Act (NLRA) recognizes the right of employees to engage in collective bargaining through representatives of their own choosing. By encouraging the practice and procedure of collective bargaining, the Act attempts to mitigate and eliminate labor-related obstructions to the free flow of commerce. Although union membership has declined dramatically since the 1950s, congressional interest in the NLRA remains significant. This book provides an overview of both the Fair Labor Standards Act and the National Labor Relations Act with a focus on coverage, amendments and policy.

**U.S. Circulating Coins: Inventory Management and Demand Analyses**

*Catherine Solorio*

Hardcover: 978-1-63117-184-0. $110.00.

The Mint is the world’s largest coin manufacturer. The men and women working for The Mint, manufacture and distribute circulating
coins, precious metal and collectible coins, and national medals to meet the needs of the United States. This book focuses on coin inventory management, the Federal Reserve Banks, and the United States Mint.

**Understanding Risk: Contributions from the Journal of Risk and Governance**  
*Matuss Beck*  
In series: *Business Economics in a Rapidly-Changing World*  

During recent years, news headlines have been rife with criticisms of the risk management practices of public and private sector entities. These criticisms have often been accompanied by calls for greater transparency in the way government entities manage risks and communicate dangers to the public. Similarly, in the private sector, the internationalization of economic activity has heightened concerns over the potential adverse implications of mismanagement and financial scandals, and has led to calls for greater regulation and supervision. While the responses of public sector agencies and private sector actors to these challenges have differed, they share a common acknowledgement that effective governance relies on the pro-active identification, assessment, and management of risks as well as appropriate regulatory frameworks. This edited book covers a number of divergent topics illustrating the emergence of several novel themes in the area of economic and social risk. As a commonality, these novel themes relate to the growing complexity in which human activity in this late stage of capitalist development is embedded. This risk-generating complexity, in turn, can be observed at several levels, including workplace hazards, governance problems within the private sector or within the intersection of private and public, and in relation to the economic risks faced by larger entities such as individual countries.

**Understanding Risk: Recent Contributions from the Journal of Risk and Governance**  
*Matuss Beck*  
In series: *Economic Issues, Problems and Perspectives*  
Hardcover: 978-1-62808-946-2. $150.00.  

The book is divided into three sections. The first section examines issues in relation to corporate governance in the private sector, with emphasis being placed on issues such as 'Board Decision-Making;' 'Earnings Management and Audit Committee Effectiveness;' and 'Corporate Governance Failures.' These contributions are complemented by the second section, which looks at governance and risk issues affecting the public sector, with a focus being placed on 'Public-Private Sector Partnering' and the impact of regulatory reform on the life sciences. Section three focuses on societal risk management in relation to health safety and the environment. In this context, contributions are presented in relation to major debates surrounding the 'Rising Trends in Cancer Cases' throughout the world; the dilemmas surrounding 'Medical Self Help;' 'Mental Health Policy;' and the use of 'Information Technology in Health Care.' I hope readers will find this edited volume useful and stimulating.

**Virtual Currency and the Bitcoin Revolution:**  
*Valerie Duskin*  
In series: *Economic Issues, Problems and Perspectives*  

This book presents current information on virtual currency and the bitcoin revolution. It provides several statements and testimonies from hearings on "Beyond Silk Road: Potential Risks, Threats, and Promises of Virtual Currencies," and "The Present and Future Impact of Virtual Currency."

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**EDUCATION**

**Assisting Students Struggling with Math and Reading: Response to Intervention Guides**  
*Pheobe Klopas*  
In series: *Education in a Competitive and Globalizing World*  

Students struggling with mathematics and reading may benefit from early interventions aimed at improving their mathematics ability and ultimately preventing subsequent failure. This book provides recommendations intended to help teachers, principals, and school administrators use Response to Intervention (RTI) to identify students who need assistance in mathematics and reading, and to address the needs of these students through focused interventions. The book provides suggestions on how to carry out each recommendation and explains how educators can overcome potential roadblocks to implementing the recommendations.

**College Textbook Costs: Factors, Trends, and Access to Information**  
*Lou S. Cousteau*  
In series: *Education in a Competitive and Globalizing World*  
2013. 76 pp.  
Softcover: 978-1-62808-695-9. $52.00.  

The rising costs of postsecondary education present challenges to maintaining college affordability. Textbooks are an important factor students need to consider when calculating the overall cost of attending college. In an effort to ensure that faculty and students have sufficient information about textbooks, Congress included requirements in the Higher Education Opportunity Act (HEOA) concerning publisher and college disclosures, as well as publisher provisions of individual course materials. The HEOA directed the Government Accountability Office (GAO) to examine the implementation of the new textbook provisions. This book addresses (1) the efforts publishers have made to provide textbook information to faculty and make bundled materials available for sale individually, and how these practices have informed faculty selection of course materials; and (2) the extent to which postsecondary schools have provided students and college bookstores access to textbook information, and what the resulting costs and benefits have been. To conduct this study, the GAO interviewed eight publishers representing over 85 percent of new U.S. higher education textbook sales, administrators at seven schools, four campus bookstores, two national campus retailers, faculty and student groups at three schools, and others with relevant expertise. GAO also reviewed websites of a nationally representative sample of schools, complaint data from Education, and relevant federal laws.
Conceptual, Methodological and Practical Challenges on How and What People and Organizations Learn Across Time and Space

Luis Miguel Villar-Angulo (University of Sevilla, Spain)

In series: Education in a Competitive and Globalizing World

Hardcover: 978-1-62109-626-1. $220.00.
Softcover: 978-1-62948-911-7. $89.00.

This book is written by educators who have practical teaching experience, a scholarly appreciation of technology and a capability for concise research exposition. The result is a volume that provides a highly readable synopsis of current educational innovations. The twenty-two chapters are arranged in six sections: technology, online teaching and learning, special education, higher education, learning and instruction and organization culture. This book is ideal for the practicing teachers or education fellows wishing to grasp the essence of modern research on teaching.

Critical Thinking and Higher Order Thinking: A Current Perspective

Michael F. Shaughnessy (Eastern New Mexico University, Portales, New Mexico)

In series: Psychology Research Progress

Softcover: 978-1-62948-797-7. $89.00.

Are we really serious about critical thinking? Are we really serious about higher order thinking? And are we serious about teaching students to think? And to evaluate, integrate, synthesize, compare and contrast? Some would say yes and some would say no, and others would hedge their bets and provide a long diffuse answer which rambles and circumvents the issue. Critical thinking is much like the weather; people talk about it, but very few people do anything about it. However, the authors of this edited book are out in the field, in classrooms, colleges, universities and libraries across the world trying to enhance critical thinking, promote it and assess and measure its growth and development.

Curriculum Violence: America’s New Civil Rights Issue

Erhabor Ighodaro (Miami Dade County Public Schools, FL) and Greg Wiggan (University of North Carolina, Charlotte, NC)

In series: Education in a Competitive and Globalizing World

Hardcover: 978-1-61728-683-4. $130.00.
Softcover: 978-1-62618-855-6. $69.00.
e-book: 978-1-61761-084-4. $130.00.

This book examines the historical context of African Americans’ educational experiences, and it provides information that helps to assess the dominant discourse on education, which emphasizes White middle-class cultural values and standardization of students’ outcomes. Curriculum violence is defined as the deliberate manipulation of academic programming in a manner that ignores or compromises the intellectual and psychological well being of learners. Related to this are the issues of assessment and the current focus on high-stakes standardized testing in schools, where most teachers are forced to teach for the test.

Curriculum: District Stories of a Path to Improved Achievement

David A. Squires (TE-6, Department of Educational Leadership, New Haven, Connecticut, USA)

In series: Education in a Competitive and Globalizing World

Hardcover: 978-1-62948-673-4. $150.00.

A curriculum is not known to improve academic achievements. This book offers case studies of three Connecticut districts of high, medium and low socio-economic status, three districts from a national sample that won the prestigious Booker prize mainly representing low SES districts, and 10 districts that have implemented a Balanced Curriculum with a sample of various SES districts from high to low. All of them have used their curriculum as the vehicle toward improved achievements. The districts studied have four common themes, represented by the acronym “ASIA”, for Alignment, Structure and Stability, Implementation and Infrastructure, and Assessment. All districts aligned their curriculum to state standards and assessments. They had a structure for the curriculum and had stability at the superintendent’s position. The districts applied a lot of effort and attained results from implementing the curriculum and developing the infrastructure to support implementation, and they finally incorporated frequent district-wide assessments into their design. The book documents the subsets of these four areas that were present in most districts that might help other districts to replicate the findings. Research in the four areas is also documented. This book demonstrates through the case studies that it is possible to use curriculum as a framework for raising test scores. This is not normally thought of as a path to improved achievements. The fact that districts from a wide range of socio-economic statuses have used their curriculum to improve achievements demonstrates that a wider application of this direction could yield positive results for other districts.

Educating Zimbabwe for the 21st Century: What Every Educator Should Know

Morgan Chitty, Ph.D., John Charema, Moses B. Rumano, Jonathan Chitty and George Chitty (Duquesne University, Pennsylvania, USA)

In series: Education in a Competitive and Globalizing World


This book offers an insightful and critical examination of Zimbabwe’s education system. The authors take a broad perspective and explore the most important aspects of the education system. The book starts by looking at the history of Zimbabwe’s education system focusing on its development from an exclusionary past where a few privileged individuals could access education, and proceeds to explore the country’s universal education, which followed the attainment of political independence from Great Britain in 1980. The authors then go on to examine the socio-economic and political factors that have contributed to the collapse of a once-vibrant education system that has been credited with producing, arguably, some of Africa’s finest professionals. As an antidote to this, the authors discuss service delivery models that have emerged as “best and effective” practices in education and how these could transform the country’s education system so that it can meet the educational, societal, professional, and economic demands of the 21st Century—a timely focus for a country trying to reinvent itself as it emerges from a decade-long severe socio-economic and political crises. The authors did an excellent job of discussing how to maximize positive educational outcomes for every Zimbabwean child via early childhood education, special education, inclusive education, counselor education and educational research. To
their credit, the authors focus on fundamental educational issues pertaining to teacher preparation, emphasizing structural, functional and sociological needs in response to the demands of a 21st Century economy. The book is an excellent resource for scholars, researchers, teacher preparation programs, professional development programs for in-service teachers, development studies programs, history scholars, and policy-makers, among others.

Education in America: Issues, Analyses, Policies, and Programs. Volume 2
Veronica M. Thompson
In series: Education in America: Issues, Analyses, Policies and Programs
Hardcover: 978-1-62808-196-1. $135.00.
This series provides an overview on education in America today, with a focus on the current issues, analyses, policies and programs being implemented and challenged. This volume discusses teacher quality issues in the Elementary and Secondary Education Act; an analysis of STEM education funding at the NSF; federal student loan debt burden of noncompleters; a profile of immigrant and second-generation American undergraduates; education-related regulatory flexibilities, waivers, and federal assistance in response to disasters and national emergencies; and educational accountability and secretarial waiver authority under Section 9401 of the Elementary and Secondary Education Act.

Education in America: Issues, Analyses, Policies, and Programs. Volume 3
Veronica M. Thompson
In series: Education in America: Issues, Analyses, Policies and Programs
2014. 177 pp.
Hardcover: 978-1-63117-362-2. $110.00.
This series provides an overview on education in America today, with a focus on the current issues, analyses, policies and programs being implemented and challenged. This volume discusses issues and recommendations for the best practice in testing integrity symposium; implementing teacher and principal evaluation systems; the Adult Education and Family Literacy Act; community colleges; education programs that prepare students for gainful employment in a recognized occupation; and the Individuals with Disabilities Education Act.

Educational Policy in the Twenty-First Century
Rosemary M. Caron (University of New Hampshire, Durham, NH, USA)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-62100-032-7. $165.00.
Softcover: 978-1-62081-109-6. $89.00.
Education is a critical determinant for the continued success of industrialized countries and for the potential of developing countries to be realized and achieved. There are many determinants that are instrumental to the progression of societies and access to education is essential to this success. This book provides a global perspective on selected areas of educational policies that address myriad aspects of how we, as a population, can achieve what is a basic human right in the twenty-first century. Educational policy is a dynamic field that many countries place as a top priority for action since an educated population is one that can be healthy and productive. This book highlights selected areas of research, action and recommendations for policy development that are applicable at all levels of education in many corners of the world.

Emergency Operations Plans: Development Guides for Public Schools and Institutes of Higher Learning
Jarrett D. Rouse
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-62948-358-0. $110.00.
Each school day, our nation’s schools are entrusted to provide a safe and healthy learning environment for approximately 55 million elementary and secondary school students. Lessons learned from school emergencies highlight the importance of preparing school officials and first responders to implement emergency operations plans. By having plans in place to keep students and staff safe, schools play a key role in taking preventative and protective measures to stop an emergency from occurring or reduce the impact of an incident. Although schools are not traditional response organizations, when a school-based emergency occurs, school personnel respond immediately. They provide first aid, notify response partners, and provide instructions before first responders arrive. They also work with their community partners, i.e., governmental organizations that have a responsibility in the school emergency operations plan to provide a cohesive, coordinated response. Community partners include first responders (law enforcement officers, fire officials, and emergency medical services personnel) as well as public and mental health entities. Families and communities expect schools to keep their children and youths safe from threats (human-caused emergencies such as crime and violence) and hazards (natural disasters, disease outbreaks, and accidents). In collaboration with their local government and community partners, schools can take steps to plan for these potential emergencies through the creation of a school Emergency Operations Plan (school EOP). This book examines development guides for public schools and institutes of higher learning in emergency operations planning which address a range of threats and hazards.

Evaluation in e-Learning
Y. Psaromiligkos, A. Spyridakos (Technological Educational Institute of Piraeus, Athens, Greece) and S. Retalis (University of Piraeus, Athens, Greece)
In series: Advances in Operations Research
Edited by: Prof. Constantin Zopounidis (Technical University of Crete)
Hardcover: 978-1-61942-942-0. $150.00.
Softcover: 978-1-63117-341-7. $89.00.
One approach which is becoming very popular nowadays is to measure the effectiveness of e-Learning solutions via analysis of data gathered from authentic educational environments. This constitutes the ultimate goal of the underlying book. More specifically, this book discusses and presents several evaluation approaches as they have been applied in real practice. Criticism, best practices, and lessons learned from the application of these approaches are discussed. The book includes innovative contributions and real world evaluation studies in authentic learning environments by experienced researchers in e-Learning.

Improving Indian Education: The Role of Management and Oversight
Maxime Pisseleu
In series: Education in a Competitive and Globalizing World
In 2012, the federal government provided over $850 million to 185 Bureau of Indian Education (BIE) schools that serve about 41,000 Indian students living on or near reservations. BIE is a part of the Indian Affairs within the Department of the Interior, and BIE’s director is responsible for managing education functions at all BIE schools. BIE’s mission is to provide quality education opportunities to Indian students. This book studies the extent to which BIE is achieving its mission. The Government Accountability Office (GAO) examined (1) how student performance at BIE schools compares to that of public school students; (2) what challenges, if any, BIE schools face assessing student performance; and (3) what management challenges, if any, affect BIE and its mission.

Improving School Climate and Discipline: Guidance and Resources

Allana Jaydon
In series: Education in a Competitive and Globalizing World

Developing positive school climates and improving school discipline policies and practices are critical steps to raising academic achievement and supporting student success. However, there is no single formula for doing so. Rather, the growing body of research and best practices in the field should inform locally developed approaches to improving school climate and discipline policies and practices. Positive school climates enhance safety in the school and community by increasing communication among students, families, and faculty, and reducing violence and bullying. This book provides a guide of principles for improving school climate and discipline, as well as resources that can be used, and laws and regulations that apply to this topic.

Network-based Continuing Medical Education: Social Media and Professional Development

Guglielmo Trentin (Institute of Educational Technology, Italian National Research Council, Genoa, Italy)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63117-346-2. $150.00.

Medical Education needs to be understood as a continuous process, where professional knowhow is an ever-changing synthesis of different types of knowledge, integrating experience, practice and rigorous scientific studies. And it is because of this need that specific national programs of continuing medical education (CME) have been institutionalized already for several decades now. In these programs too, the progressive diffusion of the new information and communication technologies (ICTs), particularly the mobile ones, has had and is still having its effects; indeed training schemes based on e-learning and more generally on Technology-Enhanced Learning are more and more widespread. However, there is another fundamental kind of dynamics governing continuing training processes, and that is peer professional knowledge sharing. This often uses various, decidedly more informal, channels which are nowadays hugely potentiated by the networks and mobile technologies (NMTs). But just because they are informal and often based on social networks managed in a restricted group, the experience and methods of these networked communities of professionals often remain unknown within the general CME context. By gathering together important contributions from leading international experts in the field, this book will try to show: (1) how NMTs foster and potentiate formal, non-formal and informal learning processes in the CME context; b) what the possible role of professional social networks in the CME context is; c) how informal learning processes characterized by horizontal (peer-to-peer) knowledge flows can be integrated with more formal ones centered on vertical knowledge flows (i.e., flows from authoritative sources to potential users); d) how the learning achieved by informal processes can be assessed in order that credits can be awarded to it within the national CME framework.

Online Learning: Common Misconceptions, Benefits and Challenges

Patrick R. Lowenthal, Cindy S. York, Jennifer C. Richardson (Boise State University)
In series: Education in a Competitive and Globalizing World

The number of students taking online courses continues to grow each year. Despite the growth, a large percentage of faculties still don’t accept the value of online learning. Online educators find themselves in exciting times where they continue advancing the dialogue about online learning, beyond the discussions of “is it as good as face-to-face instruction?” to more nuanced issues such as some of the various benefits, challenges, and misconceptions that go along with learning online. The purpose of this book is to address the various benefits, challenges, and misconceptions that coincide with online teaching and learning. The audience includes anyone with an interest in online learning, whether they are researchers, designers, instructors, or trainers. This book is organized into several themes that are current and emerging in the field of online learning, including student and instructor supports, instructional approaches, current trends and emerging technologies, reaching new audiences, and planning for the online learning environment.

Pedagogy: New Developments in the Learning Sciences

Robyn M. Gillies (The University of Queensland, Brisbane, Australia)
In series: Education in a Competitive and Globalizing World
2013. 531 pp.
Hardcover: 978-1-62100-846-0. $325.00.
Softcover: 978-1-62808-770-3. $89.00.

This book brings together a diverse range of researchers to profile new pedagogical developments in teaching and learning. This includes pedagogies in the fields of mathematics and science education, literacy, computer supported learning, and specialist fields such as special education, indigenous education, music education and the learning processes and relationships that are evident in many of these fields. The emphasis in this book is on chapters that have a strong evidence-base for the work that is presented. While some will argue that the different fields have their own specific pedagogies, often referred to as pedagogical content knowledge (PCK) (Schulman, 1986), research also indicates that there are many pedagogies that are applicable across different disciplines. Teachers and educators need to be cognisant of how different pedagogies can be applied or used creatively in their own disciplines to promote understanding and learning.

Progress in Education. Volume 29

Roberta V. Nata
In series: Progress in Education
This series presents substantial results from around the globe in selected areas of educational research. The field of education is consistently on the top of priority lists of every country in the world, yet few educators are aware of the progress elsewhere. Topics discussed include the extent to which family social and economic background interact with other factors such as gender, ethnicity and attitudes toward schooling in influencing student educational outcomes in two lower secondary schools in rural Vietnam; the introduction of formal mentoring programs in an Irish school setting; the effects of teaching strategies on cognition and performance; outcomes-focused teaching strategies; learning in a city versus learning on a campus and the spatial criteria for university progress; eating patterns of American mainstream children and Asian immigrant children in an American elementary school; and looking at educational technologies through constructivist school laboratories.

Progress in Education. Volume 30
Roberta V. Nata
In series: Progress in Education
Hardcover: 978-1-62948-278-1. $150.00.
This series presents substantial results from around the globe in selected areas of educational research. The field of education is consistently on the top of priority lists of every country in the world, yet few educators are aware of the progress elsewhere. Topics discussed include innovation in foundation courses and undergraduate research experiences; a conceptual analysis of dual credit programs; Texas community colleges and short-term occupational certificates; middle school size and student performance; gaps in college readiness; career and technical education research; behavioral consultation and developing support conditions for teachers; and the American theory of campuses as places for human learning.

Regulatory and Reporting Burdens of Federal Education Acts
Aurora Trudi
In series: Education in a Competitive and Globalizing World
2014. 147 pp.
Congress has been actively engaged in efforts to reauthorize the Elementary and Secondary Education Act (ESEA), most recently amended by the No Child Left Behind Act. This book examines the hour and cost burden associated with complying with the ESEA statutory and regulatory reporting requirements associated with 16 information collection packages. The book also discusses which requirements, if any, experts say create burden, the types of burdens and benefits schools say requirements create, and how education solicits feedback from stakeholders on regulatory burden.

Science, Technology, Engineering and Math (STEM) Education: Elements, Considerations and Federal Strategy
Noa Lemoine
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-62808-690-4. $135.00.
The term “STEM education” refers to teaching and learning in the fields of science, technology, engineering, and mathematics. It typically includes educational activities across all grade levels—from pre-school to post-doctorate—in both formal (e.g., classrooms) and informal (e.g., after-school programs) settings. Federal policymakers have an active and enduring interest in STEM education and the topic is frequently raised in federal science, education, workforce, national security, and immigration policy debates. For example, more than 225 bills containing the term “science education” were introduced between the 102nd and 112th congresses. The United States is widely believed to perform poorly in STEM education. However, the data paint a complicated picture. By some measures, U.S. students appear to be doing quite well. For example, overall graduate enrollments in science and engineering (S&E) grew 35% over the last decade. Further, S&E enrollments for Hispanic/Latino, American Indian/Alaska Native, and African American students (all of whom are generally underrepresented in S&E) grew by 65%, 55%, and 50%, respectively. On the other hand, concerns remain about persistent academic achievement gaps between various demographic groups, STEM teacher quality, the rankings of U.S. students on international STEM assessments, foreign student enrollments and increased education attainment in other countries, and the ability of the U.S. STEM education system to meet domestic demand for STEM labor. This book is intended to serve as a primer for outlining existing STEM education policy issues and programs. It includes assessments of the federal STEM education effort and the condition of STEM education in the United States, as well as an analysis of several of the policy issues central to the contemporary federal conversation about STEM education.

Self-Efficacy in School and Community Settings
Shari L. Britner (Department of Teacher Education, Bradley University Peoria, IL)
In series: Perspectives on Cognitive Psychology
Hardcover: 978-1-61470-828-5. $140.00.
Softcover: 978-1-63117-096-6. $89.00.
Albert Bandura’s introduction of social cognitive theory moved the field of social psychology from viewing people as primarily reacting to events to viewing people as being active agents who interpret events and plan their future behaviors. Educators and psychologists have become so familiar with this view that we often lose sight of the groundbreaking nature of his contributions. Since his introduction of social cognitive theory, self-efficacy has become a central construct in research on human learning, motivation, and accomplishment in many domains. In this book, the authors present self-efficacy research in a wide range of domains, including high school mathematics and science, an undergraduate neuroscience research program, cultural intelligence education, computer self-efficacy, courtroom self-efficacy, and smoking cessation self-efficacy.

Teaching Children to Read: Guidance and Research
Jonas D. Worthington
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-62948-459-4. $110.00.
e-book: 978-1-62948-460-0. $110.00.
When does a child learn to read? Many people might say, “in kindergarten or first grade.” But researchers have told us something very important. Learning to read and write can start at home, long before children go to school. Children can start down the road to becoming readers from the day they are born. Very early, children begin to learn about spoken language when they hear their family members talking, laughing, and singing, and when they respond to all of the sounds that fill their world. They begin to understand written language when they hear adults read stories to them and see adults reading newspapers, magazines, and books for themselves. These early
experiences with spoken and written language set the stage for children to become successful readers and writers. This book examines what scientific research says about how children learn to read and write: things you can do with your children from birth through third grade to help them become readers; what to look for in quality day care centers and preschools to help your children become readers; and ideas for books to read and organizations to contact if you would like more help or information. Remember, keep it simple and have fun. Make these activities part of the warm, loving relationship you are already creating with your child.

The Educational Superintendent: Between Trust and Regulation An International Perspective
Adam E. Nir (The Department of Education, The School of Education, The Hebrew University of Jerusalem, Jerusalem, Israel)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-62948-972-8, $150.00.
Public education is one of the main forces that make a healthy and democratic society. It strives to educate and to provide the younger generation knowledge and skills that allow children to become contributing citizens in their society. Public education is considered highly significant in consolidating the society and establishing its cultural and economic strength. For those reasons, governments choose to invest a significant portion of the state’s national resources in public schooling. Taking into account the costs and political significance attributed to public education, it is not surprising that governments establish some formal mechanism responsible for the monitoring of schools, intended to ensure that schools operate professionally and in accordance with national goals and policies. However, when considering voices arguing for schools’ autonomy and, at the same time, policy makers’ inclination to control schools, a dilemma arises: how can control and trust be pursued simultaneously? This dilemma is obviously applicable in all public education systems and it is therefore not surprising that governments based practices considered “superintendent.” Nevertheless, substantial dissimilarities among different educational contexts may be found in role expectations and degrees of regulation superintendents are expected to enforce. The superintendency system may therefore be viewed as a vivid expression of the way trust and control later conceivably and translated in different national settings. It reflects a unique and fragile equilibrium between the inclination to enforce national policies on schools as a means for ensuring their implementation and the tendency to enable sufficient degrees of freedom to school level educators. While research on educational leadership at the school level is abundant, studies on the educational superintendent are relatively sparse. Although some studies have been conducted on the superintendency in recent years, the literature lacks evidence coming from comparative research endeavors testifying to the control and regulation mechanisms exerted in public education systems in light of their different contextual features. The book’s main goal is to provide an international audience of policymakers, planners, district as well as school-level educators and, obviously, researchers substantial multicultural evidence regarding mechanisms of control and trust characterizing different educational systems, using the superintendent’s role as a lens. Specifically, the book describes how superintendency is exercised in thirteen national public systems with each chapter focusing on a single state providing an “insider’s” perspective of the superintendency system in light of the structural, institutional and cultural features of each society and educational system.

The FPeLearning™ System for Education: Systematic Research on Creative Technology Integration into Classroom Practice
Dale Herold Eberwein (University of Phoenix, School of Advanced Studies SAS Alumni, Coeur d’Alene, Idaho, USA)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-62808-830-4, $175.00.
The FPeLearning™ System for Education is a student-based creative technology-enhanced educational strategy that addresses all the aforementioned requisites and also encourages forums for critique, aids in the creation of potential digital repositories of knowledge, and may inspire portfolios of presentations designed by the students themselves. “The FPeLearning™ System for Education: Systematic Research on Creative Technology Integration into Classroom Practice” provides a conceptual overview and developmental “how-to” architecture on this dynamic approach to integrating educational technology into classroom practices. By harnessing the creativity of students, the FPeLearning™ Systems’ design makes use of student-based practices considered beneficial to performance outcomes while promoting skill-sets deemed necessary to potential careers and continuing education. Empowering students with his or her own learning as well as developing necessary skill-sets technologically may represent the paradigm shift that education seeks to fully integrate technology at a student-centric level. The FPeLearning™ System for education binds education to a “Technological Constructivist” (making mean from technology) method that may provide the proverbial missing link for education when technology is the lens for development.

What Are Finnish Teachers Made Of? A Glance at Teacher Education in Finland Yesterday and Today
Merja Paksuniemi, Satu Uusiautti and Kaarina Määttä (University of Lapland, Rovaniemi, Finland)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-62808-306-4, $85.00.
The purpose of this book is to provide a special viewpoint on the development of the Finnish school system and teacher education. Understanding the success of today requires information about the past. The book covers the history, ideological background, and development of Finnish teacher education from the 19th century to today. The historical review uses a northern Finnish teacher training college of Tornio as the example. This book provides interesting information about the ideological foundation of the first teacher training colleges, description of how the ideology was applied in the practice of teacher training, and how students were selected for teacher training. The development of teacher training faced certain hardships too. What happened in Finnish society since the establishment of teacher training colleges in the second half of the 19th century affected Finnish teacher training significantly. The book brings out the special circumstances in Finland at the beginning of the 20th century focusing on the war years of 1939-1945.

Wiki Supporting Formal and Informal Learning
Stefania Bocconi and Guglielmo Trentin (Institute of Educational Technology, Italian National Council, Italy)
In series: Education in a Competitive and Globalizing World
energy improvements; and provides insight on the limits of financing for energy efficiency.

**Federal Green Jobs Efforts: Renewable Energy Origins and Assessment of Outcomes**

**Alecia Grettler**

In series: *Renewable Energy: Research, Development and Policies*


Hardcover: 978-1-63117-269-4. $52.00.

e-book: 978-1-63117-270-0. $52.00.

In the United States, growing awareness of greenhouse gas (GHG) emissions and the possible implications for global climate change have combined with recent high energy prices and economic uncertainty to rekindle interest in renewable energy. Renewable energy technologies generate electricity from resources such as the sun, wind, or biomass, with essentially no net GHG emissions. President Obama has declared a goal for the United States to become the world’s leading exporter of renewable energy technologies, setting out policy objectives for the development of related “green jobs”. This book discusses what “green job” are, and provides highlights on challenges of targeted training programs for emerging industries.

**Grid Energy Storage: Benefits and Challenges to Modernizing the Electric Grid**

**Jonatan Janko**

In series: *Energy Science, Engineering and Technology*


Hardcover: 978-1-63117-368-4. $110.00.


Energy storage technologies (such as pumped hydro, compressed air energy storage, various types of batteries, flywheels, electrochemical capacitors, etc.) provide for multiple applications that include energy management, backup power, load leveling, frequency regulation, voltage support, and grid stabilization. Importantly, not every type of storage is suitable for every type of application, motivating the need for a portfolio strategy for energy storage technology. There are four challenges related to the widespread deployment of energy storage. The challenges are cost competitive energy storage technologies (including manufacturing and grid integration), validated reliability and safety, equitable regulatory environment, and industry acceptance. This book sets out potential options to improve energy storage. It also presents a number of specific actions that could help maintain both scientific advancements and a pipeline of project deployments.

**Incorporating Solar Technologies in the Utility Resource Planning Process**

**Sandra M. Grosso**

In series: *Energy Science, Engineering and Technology*


Hardcover: 978-1-63117-009-6. $135.00.


Today’s utility planners have a different market and economic context than their predecessors, including planning for the growth of renewable energy. State and federal support policies, solar photovoltaic (PV) price declines, and the introduction of new business models for solar PV “ownership” are leading to increasing interest in solar technologies (especially PV); however, solar introduces myriad new variables into the utility resource planning decision. This book focuses on the treatment of solar generation in electric utility resource planning and provides and evaluation of solar valuation methods used in utility planning and procurement processes.
In series: Renewable Energy: Research, Development and Policies
Softcover: 978-1-63117-012-6. $52.00.
Master Limited Partnerships (MLPs) and Real Estate Investment Trusts (REITs) are two proposed investment vehicles that have the potential to lower the high cost of capital for renewable energy assets—a critical factor in the U.S. Department of Energy’s goal for renewable energy to achieve grid-parity with traditional sources of electric generation. Due to current U.S. federal income tax laws, regulations, and administrative interpretations, REITs and MLPs cannot finance a significant portion of the cost of renewable energy assets. Topics discussed in this compilation include the opportunities and potential complications for renewable energy with the master limited partnerships and real estate investment trusts; the technical qualifications for treating photovoltaic assets as real property by real estate investment trusts; master limited partnerships parity act; and master limited partnerships as an option for the renewable energy industry.

Resilience of Sustainable Power Plant Systems in Catastrophic Events
Naim Hamdia Afgan (Instituto Superior Tecnico, Lisbon, Portugal)
In series: Energy Science, Engineering and Technology
Hardcover: 978-1-62948-899-8. $150.00.
This book is aimed to the reader interested to learn about the progress and development of the new toll for the evaluation and assessment of power plant accidents and catastrophes. It is aimed to give an overview of the present state of art this field. As the readers will notice, the book is devoted to the professionals in the power engineering. Also, the book is written for the postgraduate student willing to learn more about present knowledge in the field of the power plant accidents. The book is written as an overview of the state of art power plants accident engineering. The special attention was devoted to the evaluation and assessment of the recent accidents of the different power plants including: nuclear power plants, coal fired power plant, wind power plant, solar power plant, and power transport systems.

Solar Incentives: Best Practices for Design and Implementation
Peggy K. Alvin
In series: Energy Policies, Politics and Prices
2014. 159 pp.
Hardcover: 978-1-63117-492-6. $110.00.
In recent years, the number of utilities across the country offering incentives to encourage customers to adopt solar power has grown substantially. Often this is because utilities are required to meet solar energy mandates or generation targets. Utilities have voluntarily encouraged the adoption of solar energy or established incentive programs to meet internal clean energy goals. While solar photovoltaic (PV) system costs are rapidly falling, costs for distributed systems are still above retail rates in most jurisdictions, and require incentives to support customer adoption. This book explores best practices for designing and implementing incentives for small and mid-sized residential and commercial distributed solar energy projects.

The Long Island Solar Farm: A Trailblazing Resource for Development and Partnerships
Clara Mckenzie
In series: Energy Science, Engineering and Technology
Hardcover: 978-1-63117-419-3. $110.00.
The Long Island Solar Farm project came together as a joint effort of five very different interest groups: a federal agency, a research institution, an electric utility, a private business, and the general public. The project is remarkable for three major reasons: first, it is the largest utility-scale solar power plant in the Eastern United States; second, it is a commercial project built on federally administered public lands; and third, the project was very unlikely to have started in the first place. The process by which the Long Island Solar Farm was developed is intricate and unusual. This reflects many of the nuanced conditions that made siting the solar farm on federal property a unique opportunity for very different groups. This book discusses project concepts; the process involved in executing the projects; and also provides an environmental assessment for the BP solar array project from the Brookhaven National Laboratory.

The Risk Management Role of Insurance in Energy Infrastructure Security and Resilience
David Favaloro
In series: Energy Policies, Politics and Prices
Hardcover: 978-1-62808-936-3. $110.00.
e-book: 978-1-62808-937-0. $110.00.
This book examines key risks that the Nation’s critical energy infrastructure is confronting and the ways in which the insurance industry can help manage these risks, including how it identifies, assesses, and manages them and their potential impacts. Today, weather-related incidents account for the majority of economic losses in the insurance industry as well as in the critical infrastructure sectors. In addition to the traditionally-recognized natural hazards, critical energy infrastructure faces significant emerging threats, including cybersecurity and space weather risks. While the United States has a large, mature insurance market, developing insurance mechanisms for protecting critical infrastructure from these emerging risks remains a significant challenge. The lack of historical data on the frequency and severity of these events, the changing nature of technologies impacted by them, as well as the inherent uncertainties posed by these risks make it difficult to accurately assess these emerging risks and develop proper insurance products. Insurance instruments can be a useful risk mitigation tool for critical infrastructure by encouraging resilience-enhancing investments and accelerating recovery after a disaster. However, due to the increased interdependencies across various critical infrastructure systems and sectors as well as the growing dependence of today’s society on the critical infrastructure functions and advanced technologies, the question of insurability of critical infrastructure against emerging risks faces new challenges.

Dennis H. Pip
In series: Energy Policies, Politics and Prices
2014. 146 pp.
Hardcover: 978-1-63117-380-6. $110.00.
The U.S. energy service company (ESCO) industry is an example of a private sector business model where energy savings are delivered to customers primarily through the use of performance-based contracts. ESCO has largely been a successful model for the cost-effective delivery of energy-efficient technologies and services to public/institutional sector customers. This book analyzes the market
size, growth projections and industry trends in ESCO, drawing on information from interviews with ESCO executives conducted in late 2012. It also provides a preliminary estimate of remaining ESCO market potential in terms of the onetime project investment potential and annual blended energy savings remaining in U.S. buildings typically addressed by ESCOs, based on market penetration estimates provided by ESCOs and industry experts. The book reports the range of impacts of the U.S. economic recession on ESCOs’ state and local institutional projects and their use of incentives, tax credits, and financing mechanisms.

Wind Power in a Natural Gas Environment: Hedge Value and Risk Analyses
Belinda Ernestine
In series: Energy Science, Engineering and Technology
Softcover: 978-1-63117-512-1. $72.00.
Expanding production of the United States’ vast shale gas reserves in recent years has put the country on a path towards greater energy independence, enhanced economic prosperity, and (potentially) reduced emissions of greenhouse gases and other pollutants. The corresponding expansion of gas-fired generation in the power sector – driven primarily by lower natural gas prices – has also made it easier and cheaper to integrate large amounts of variable renewable generation, such as wind power, into the grid. This book discusses the long-term hedge value of wind power and provides an analysis of wind and natural gas under different market structures.

ENVIRONMENT

Aerosols: Synthesis, Optical Properties and Environmental Implications
Adam Yanick Pearson
In series: Environmental Health - Physical, Chemical and Biological Factors
2014.
Softcover: 978-1-63117-512-1. $72.00.
Nanostructured materials and coatings have gained great importance due to their microstructural properties. Their applications have increased in different technological areas such as, in environmental pollution control, photo catalysis, optics, solid oxide fuel cells, electronic and optoelectronic devices, mechanical protection, catalysis, and in biomedical. Furthermore, advances in aerosol processing in recent years have increased the variety of produced nanostructured materials, including metals, oxides, ceramics, and composites, in different appearances such as nanoparticles, rods, belts, fibers, tubes, needles, and films. This book discusses the synthesis, properties and implications that aerosols have on the environment.

Air Quality Observation in the U.S.: Systems, Needs, and Standards
Malcolm Parisi
In series: Air, Water and Soil Pollution Science and Technology
Hardcover: 978-1-63117-154-3. $110.00.
Accurate information about air pollutants in the troposphere, such as ozone, particulates, and their respective precursors, is essential to decision-making in domains as diverse as human health, environmental protection, climate change, and agriculture, as well as for assessments of air quality management strategies and policies. Atmospheric observations have only grown in importance as the risks posed by global climate change have come more clearly into focus, and observations will be critical in the years ahead both for tracking the impacts of mitigation strategies and predicting national needs in the realm of adaptation and preparedness. In this book the authors discuss air quality observation systems in the United States; ozone air quality standards; and the EPA’s 2013 changes to the particulate matter standard.

Basins: Methods of Formation, Ongoing Developments and Emerging Challenges
Jianwen Yang (College of Earth Sciences, Guilin University of Technology, Guangxi, China)
In series: Earth Sciences in the 21st Century
2014.
Softcover: 978-1-63117-510-7. $52.00.
Sedimentary basins represent the vast repositories for the Earth’s natural resources, containing not only a large variety of metallic mineral deposits, but also natural gas, oil, oil sands and coal deposits; and therefore are a continuous focus of research. The formation of these economic resources in sedimentary basins results from complex interactions among geological, geochemical, thermal, structural and hydrological processes. This book is composed of seven chapters written by 24 authors from seven countries (Argentina, Brazil, Canada, China, Ghana, India and Nigeria), reflecting the diversity of topical case studies in various regions. The collection of topics aims to present recent advances in research on basins and the related issues, including Tectonic evolution of Youjiang basin and the resultant Carlin-type gold deposits; Numerical simulation of turbidity current and reservoir prediction in Qiongdongnan basin of the northern South China Sea; Investigation into annual soil loss and the watershed management using remote sensing and GIS methods; Subsidence, hydrocarbon generation and thermal history modelling of the Chad basin; Hydrological case study of flatlands in Argentina; Hydrochemical study of surface waters in the Barreiro hydrographic basin of Brazil; and Climate downscaling over the Densu basin and nexus on hydrology in Ghana.

Beaches: Erosion, Management Practices and Environmental Implications
Margaret Cessa
In series: Environmental Health - Physical, Chemical and Biological Factors
Softcover: 978-1-63117-239-7. $72.00.
Sandy beaches are the most abundant coastal systems worldwide, representing approximately ¾ of the worlds’ coastlines. In the last decades, these sensitive and dynamic ecosystems have been a target of an increasing human pressure, associated with an unbridled urbanization of coastal areas, caused by high human population growth, but also associated with recreational activities and tourism. Together with global climatic changes and coastal erosion, these processes lead to detrimental impacts and an environmental quality decline of sandy beach ecosystems, imposing an increasing need for adequate assessment and management practices. This book discusses the El Niño-Southern oscillation and coastal response; macrofaunal key species as useful tools in management and assessment practices on sandy beaches; improving coastal knowledge transfer between researchers and managers; the influence of environmental aspects in the variation of natural radioactivity levels in selected Brazilian beach sand samples; nuisance algal blooms; and downcoast erosion triggered by exhaustion of sand supply from sea cliffs.
Climate Change and Aeroallergens: Potential Impacts
Daniel Machado and Lauren Zuber
In series: Climate Change and its Causes, Effects and Prediction
Hardcover: 978-1-62948-303-0. $110.00.
This book presents a survey of the current state of knowledge of the potential impacts of climate change and variability on aeroallergens like pollen, mold, and indoor allergens in the United States and the allergic diseases associated with them. Allergies are prevalent in the United States and impose substantial economic and quality-of-life burdens. A recent nationwide survey reported that 54.6% of people in the United States test positive for one or more allergens. Among specific allergens, dust mites, rye, ragweed, and cockroaches caused sensitization in approximately 25% of the population. Allergies are the sixth most costly chronic disease category in the United States, collectively costing the health care system approximately $21 billion annually. The three main allergenic diseases that have been associated with exposure to aeroallergens are allergic rhinitis (hay fever), asthma, and atopic dermatitis (eczema), which individually and collectively impose both substantial health effects and large economic burdens. The direct medical costs of asthma and allergic rhinitis (hay fever) are estimated to be $12.5 billion and $6.2 billion per year, respectively, and the direct medical costs of atopic dermatitis (eczema) are estimated to be $1.2–$5.9 billion per year. While data suggest that aeroallergen levels have remained relatively stable, the prevalence of allergic diseases in the United States has increased over the last 30 years, a trend that appears to be mirrored in other countries as well. The causes of this upward trend are as yet unclear. Because the economic impacts of allergic diseases associated with aeroallergens and the quality-of-life impacts on those individuals who suffer from them are already substantial, any climate change-induced enhancement or continuation of this trend in the United States would be of particular concern.

Ecosystem Restoration: Selected Programs and Federal Activities
Simon Acheson
In series: Environmental Remediation Technologies, Regulations and Safety
Softcover: 978-1-63117-540-4. $52.00.
e-book: 978-1-63117-541-1. $52.00.
Lake Tahoe lies in the center of the Basin, and receives flows of melting water from snow caps of the surrounding mountain peaks. The Tahoe Basin contains wetlands, swamps, deep-water habitats, aspen stands, conifer forests, and meadows which harbor over 1,300 species of plants and animals. Environmental problems in the Tahoe Basin have led to federal, state, local, and private investments in ecosystem restoration. This book elaborates on the management and restoration activities in the Lake Tahoe Basin. It also discusses restoration of several other ecosystems that include the Salton Sea in California, the Great Lakes, and the Everglades in Florida.
Environmental and Agricultural Research
Summaries. Volume 1
Lucille T. Cacioppo
In series: Environmental Research Advances
This book compiles research summaries from a number of different focuses in the important field of environment and agriculture.

Environmental and Agricultural Research
Summaries. Volume 2
Lucille T. Cacioppo
In series: Environmental Research Advances
Hardcover: 978-1-63117-061-4. $230.00.
This book compiles research summaries from a number of different focuses in the important field of environment and agriculture.

Environmental and Agricultural Research
Summaries. Volume 3
Lucille T. Cacioppo
In series: Environmental Research Advances
Hardcover: 978-1-63117-090-4. $230.00.
This book compiles research summaries from a number of different focuses in the important field of environment and agriculture.

Environmental and Agricultural Research
Summaries. Volume 4
Lucille T. Cacioppo
In series: Environmental Research Advances
This book compiles research summaries from a number of different focuses in the important field of environment and agriculture.

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Summaries. Volume 5
Lucille T. Cacioppo
In series: Environmental Research Advances
This book compiles research summaries from a number of different focuses in the important field of environment and agriculture.

Environmental and Agricultural Research
Summaries. Volume 6
Lucille T. Cacioppo
In series: Environmental Research Advances
This book compiles research summaries from a number of different focuses in the important field of environment and agriculture.

Environmental and Agricultural Research
Summaries. Volume 7
Lucille T. Cacioppo
In series: Environmental Research Advances
This book compiles research summaries from a number of different focuses in the important field of environment and agriculture.

Environmental and Agricultural Research
Summaries. Volume 8
Lucille T. Cacioppo
In series: Environmental Research Advances
This book compiles research summaries from a number of different focuses in the important field of environment and agriculture.

Environmental and Agricultural Researcher
Biographical Sketches and Research Summaries.
Volume 1
Lucille T. Cacioppo
In series: Environmental Research Advances
Hardcover: 978-1-63117-029-4. $250.00.
This new book compiles biographical sketches of top professionals in the field of environmental and agricultural research, as well as research summaries from a number of different focuses in this important field.

Environmental Policy: Management, Legal Issues and Health Aspects
Erika Creighton and Paul Danovich
In series: Environmental Research Advances
Hardcover: 978-1-62808-496-2. $150.00.
In this book, the authors discuss the management, legal issues and health aspects of environmental policy. Topics include health-care solid waste management in Vietnam; regulating the waste management industry in the EU; environmental policy tools to improve the management of marine and coastal zones in Italy; managing ecosystem services for human benefit; issues of importance in waterbird ecology, conservation and environmental policy; biogeographical change and environmental policy in the western greenbelt of Ottawa, Canada; upstream pollution, downstream competition and environmental policy; China's quest for environmental sustainability; assessment of the geochemical status of landscapes in the Ukraine; aeration zone protective properties estimation using GIS technologies.

Habitat Loss: Causes, Impacts on Biodiversity and Reduction Strategies
Bronson Devore
In series: Environmental Health - Physical, Chemical and Biological Factors
Hardcover: 978-1-63117-231-1. $95.00.
Habitat loss and degradation are perceived to be one of the main factors threatening biodiversity through detrimental effects on species and populations. These processes reduce habitat availability, increase
isolation and generate patchy environments, which reduces species richness, population genetic diversity, and modifies community structure. The loss of biodiversity associated with habitat alteration is particularly problematic in forest habitats, because forests are one of the most species-rich habitat types. The conservation implications have become greater with evidence that climate change may exacerbate and speed up ongoing processes. This book focuses on topics that include niche restriction and conservatism in a neotropical psittacine; consequences for distribution patterns of specialist fauna; and paths to habitat loss in European Atlantic heathlands.

Invasive Species: National Research Opportunities and Priorities and Strategic Management Framework
Reuben Sotelo
In series: Environmental Health - Physical, Chemical and Biological Factors
2014. 293 pp.
Invasive species are one of the greatest threats to forest, range, aquatic, and urban forest ecosystem health. They contribute to the endangerment of native species and may lead to other severe ecological and financial consequences in our Nation’s wild lands and urban forests. To ensure the continued production of needed goods, services, and values from our Nation’s terrestrial and aquatic ecosystems, the Forest Service, an agency of the U.S. Department of Agriculture (USDA), must implement a strategic systems approach for managing invasive species. This book prioritizes and guides the prevention, detection, and control of invasive insects, pathogens, plants, wildlife, and fish that threaten our Nation’s terrestrial and aquatic ecosystems.

National Parks: Sustainable Development, Conservation Strategies and Environmental Impacts
Johnson B. Smith
In series: Environmental Science, Engineering and Technology
Hardcover: 978-1-62618-934-8. $150.00.
In this book, the authors present current research in the study of sustainable development, conservation strategies and the environmental impacts of National Parks. Topics discussed include the case of National Parks in Cameroon; linking protected area conservation with poverty alleviation at Bwindi Impenetrable National Park, Uganda; biodiversity conservation efforts at Bardia National Park in Nepal; Priority Areas Integration (PAI) methods as a tool to facilitate biodiversity conservation; communal game farming; settlement history and resource use in Utah's Grand Staircase-Escalante National Monument; the competitive positioning of the Peneda-Geres National Park in Portugal; and the Donana National Park in Spain.

National Strategies for the Arctic and a Review of Arctic Changes and Congressional Issues
Leonard Deluca
In series: Environmental Remediation Technologies, Regulations and Safety
Hardcover: 978-1-63117-201-4. $110.00.
The National Strategy for the Arctic Region sets forth the United States Government’s strategic priorities for the Arctic region. This strategy is intended to position the United States to respond effectively to challenges and emerging opportunities arising from significant increases in Arctic activity due to the diminishment of sea ice and the emergence of a new Arctic environment. It defines U.S. national security interests in the Arctic region and identifies prioritized lines of effort, building upon existing initiatives by Federal, state, local, and tribal authorities, the private sector, and international partners, and aims to focus efforts where opportunities exist and action is needed. This book discusses the National Strategy for the Arctic Region in further detail; the Department of Defense Arctic strategy; and provides background and issues in the changes in the Arctic.

Outdoor Recreation in the Northern United States and Projected Outlook to 2060
Alexander N. Borden
In series: Environmental Health - Physical, Chemical and Biological Factors
Outdoor recreation can take many forms depending on the types of activities, settings, social engagements, equipment, and times chosen by the recreation participant. Recreation can be physically active (for example, hiking) or more sedentary (for example, viewing natural scenery). Many of the activities of interest to the Renewable Resources Planning Act (RPA) Assessment and to assessments of current or future northern forest conditions are classified as “nature-based” in that they are in some way associated with wildlife, birds, streams, lakes, snow and ice areas, trails, rugged terrain, mountains, caves, and other natural outdoor resources or settings. This book discusses outdoor recreation in the northern United States and provides a technical document supporting the northern forest futures project that includes projections through 2060.

Soil Carbon: Types, Management Practices and Environmental Benefits
Aquila Margit
In series: Environmental Health - Physical, Chemical and Biological Factors
Softcover: 978-1-63117-438-4. $72.00.
Carbon, a major constituent of structural and energy-releasing organic molecules, is essential to life. A substantial amount of C found in soils is available as soluble organic molecules (SOM) or particulate organic matter (POM) derived from plant primary production. Available atmospheric C as CO2, used by plants during photosynthesis, is part of a larger biogeochemical cycle, including the cyclic release of CO2 by respiration in living organisms and its fixation through photosynthesis. Carbon also is fixed through biological calcification and is eventually bound in carbonate-containing rocks, especially in aquatic and marine environments. This book focuses mainly on soil carbon and its environmental benefits.

Soils of Georgia
Tengiz F. Urushadze and Winfried E.H. Blum
(Agricultural University of Georgia (AUG), Tbilisi, Georgia)
In series: Air, Water and Soil Pollution Science and Technology
2014.
e-book: 978-1-63117-478-0. $85.00.
This book describes a wide range of soils, from the humid subtropical coast of the Black Sea to the frozen peaks of the High Caucasus with more than 5,000 meters above sea level and from extremely humid areas in the West to dry, semi-desert regions in the East, with an enormous variety of rock parent materials, a very accentuated hydrology and a topography, ranging from large plains, hilly regions to...
steep and strongly dissected slopes and gorges in the High and Lower Caucasus. There is no other country in the world the size of Georgia with such a variety of soil forming conditions and soils. Therefore, V. V. Dokuchaev, one of the founders of the genetic soil classification, called Georgia an “Open-Air Museum of Soils”. The book is subdivided into 6 chapters. In Chapter 1, the physiography of Georgia and the factors of soil formation such as topography, geology, climate and vegetation are described, followed by Chapter 2, with the detailed description of 21 soil groups, their morphological, physical and chemical characteristics, their many different subtypes and variations, and their ecology, based on 72 tables, 25 figures and 20 photos. Moreover, the location of each soil and its surface in % of the total surface of Georgia are explained, including the history of their discovery and investigation together with the relevant literature. In Chapter 3, the overall ecological conditions, especially problems of soil erosion by water and wind and the soil contamination by heavy metals and radionuclides are described, followed by Chapter 4 with an explanation of the soil use, based on physical and chemical soil characteristics. Two further chapters with references and soil photos conclude the book, which is written by Prof. Tengiz F. Urushadze from the Agricultural University of Georgia in Tbilisi and Prof. Winfried E.H. Blum from the University of Natural Resources and Life Sciences (BOKU) in Vienna, Austria.

The Great Lakes Restoration Initiative
Öskar Strobel
In series: Environmental Remediation Technologies, Regulations and Safety
Hardcover: 978-1-63117-525-1. $110.00.
The Great Lakes ecosystem is recognized by many as an international natural resource that has been altered by human activities and climate variability. These alterations have led to degraded water quality, diminished habitat, lower native fish and wildlife populations, and an altered ecosystem. In response, the federal governments of the United States and Canada and the state and provincial governments in the Great Lakes basin are implementing several restoration activities. These activities range from mitigating the harmful effects of toxic substances in lake waters to restoring fish habitat. This book provides the reader with a background on and issues of the Great Lakes restoration initiative, as well as the action plan for the years 2010-2014.

The Regional Greenhouse Gas Initiative: Lessons and Related Cap-and-Trade Considerations
Serge Chauvin
In series: Environmental Research Advances
2013. 113 pp.
Softcover: 978-1-62808-483-2. $52.00.
The Regional Greenhouse Gas Initiative (RGGI) is the nation's first mandatory cap-and-trade program for greenhouse gas (GHG) emissions. As of January 1, 2012, RGGI involves nine states - Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. The RGGI cap-and-trade system applies only to carbon dioxide (CO2) emissions from electric power plants with capacities to generate 23 megawatts or more-approximately 168 facilities. The RGGI emissions cap took effect January 1, 2009. This book provides an overview of the RGGI cap-and-trade program and the participating RGGI states, with a discussion on select issues raised by RGGI that may be of interest to policymakers who are considering developing a federal program.

Trends in Environmental Science
Henry C. Schroder
In series: Environmental Research Advances
The environment is considered the surroundings in which an organism operates, including air, water, land, natural resources, flora, fauna, humans and their interrelation. It is this environment that is both so valuable on the one hand, and so endangered on the other. And it is people that are by and large ruining the environment, both for themselves and for all other organisms. This book presents some of the latest research in the field.

United States Fossil Fuel Exports: Developments, Considerations, and Regulations
Mitchell P. Henning
In series: Renewable Energy: Research, Development and Policies
2014. 120 pp.
Softcover: 978-1-63117-198-7. $52.00.
Recent technological developments have led to an increase in the domestic supply of natural gas. As a result, there is interest among some parties in exporting liquefied natural gas (LNG) to take advantage of international markets. This has placed new attention on the laws and regulations governing the export of natural gas as well as other fossil fuels. In most cases, export of fossil fuels requires federal authorization of both the act of exporting the fuel and the facility that will be employed to export the fuel. This book discusses federal permitting and oversight of export of fossil fuels; new opportunities and uncertain outcomes of United States natural gas exports; United States coal exports; and coal as a key player in expanded United States energy exports.

Urbanization: Global Trends, Role of Climate Change and Effects on Biodiversity
Harold J. Kaufman
In series: Environmental Research Advances
Hardcover: 978-1-63117-063-8. $95.00.
e-book: 978-1-63117-064-5. $95.00.
Urbanization is caused by migration. However, an essential difference exists between migration in the past and that in the present. This book focuses on several topics that include a comparison between an informational city and a smart city; urbanization and human impact on biodiversity in Water’s Edge Public Spaces (WEPS); a mathematical-modeling approach to urbanization caused by migration; sustaining urbanization in a developing economy; and urbanization and cardiomyopathy vulnerability in an African male cohort.

ETHICS

Bioethics: Select Laws and Issues From Around the World
Marshall Breslau and Paige Feldman
In series: Ethical Issues in the 21st Century
2013. 133 pp.
Softcover: 978-1-62948-280-4. $52.00.
e-book: 978-1-62948-281-1. $52.00.
This book examines the field of bioethics from an international and regional legal perspective. It focuses on major international law documents such as the United Nations Universal Declaration on Bioethics and Human Rights and UNESCO declarations on human cloning and the human genome. Coverage of regional legal instruments includes the Council of Europe Convention on Human Rights and
Biomedicine (the Oviedo Convention) and its Protocols on cloning, transplantation, and research with human beings. Work on surrogacy issues by the Hague Conference on Private International Law is also discussed, as are some African regional legal instruments on biosafety, and stem cell research.

Organizational Ethical Behavior
George W. Watson, Ph.D., (Managing Editor and Associate Professor, Management and Marketing Department, School of Business, Southern Illinois University, Edwardsville, Illinois, USA)
In series: Ethical Issues in the 21st Century
Hardcover: 978-1-62618-936-2. $150.00.
The “mother” discipline of organizational behavior has deep roots in psychology, particularly industrial and organizational psychology. It comes as no surprise, therefore, that new and theoretically incommensurate findings involving human moral behavior have been met with calls for a more psychologically informed investigation of ethical behavior in organizational contexts (DeCremer and Tenbrunsel, 2012; Reynolds and Ceranic, 2009). This project, aimed at a fuller understanding of the psychology of ethical behavior, typically falls under the label of Organizational Ethical Behavior (OEB).

EUROPE

A History of Voting Rights for Parliamentary Elections in the United Kingdom
Nicole P. Springer
In series: European Political, Economic, and Security Issues
Hardcover: 978-1-62948-870-7. $110.00.
This book gives a history of the Parliamentary franchise and shows the incremental stages which led to universal suffrage across the UK by drawing on several of the recognised sources which have dealt with the subject and by referring to the key legislation. It also provides background to the provisions relating to overseas voters in the Representation of the People Act 1985 which was subsequently amended by the Representation of the People Act 1989 and the Political Parties, Elections and Referendums Act 2000. There has been considerable concern about the under-registration of the Armed Forces, especially those serving overseas, and the difficulties they face in participating in the electoral process generally. This book continues with giving details of recent changes to legislation, including the provisions of the Electoral Administration Act 2006, and information about measures taken to increase the electoral registration of service personnel. The final chapter of the book briefly draws together library material on the issue of prisoners’ voting rights.

Flexible and Political Philosophy: Towards a Majority-Friendly Europe
Andranik Tangian (Hans-Böckler-Foundation, Düsseldorf and Karlsruhe Institute of Technology, Germany)
In series: European Political, Economic, and Security Issues
2013. 222 pp.
Hardcover: 978-1-62808-612-2. $85.00.
Softcover: 978-1-62808-639-3. $59.00.
Flexicurity is a European labour market policy adopted in 2007 within the European Employment Strategy. This policy aims at combining the ongoing flexibilization of employment relations with the traditions of the European welfare state. This book examines and summarizes thirty empirical studies in flexicurity written by the author in 2004 and 2010. The book provides empirical evidence of increasing labour flexibility accompanied by a decline of social security. The author also shows that the countries with higher flexibility are more affected by the crisis. This is a serious warning against improper implementation of flexicurity and its one-sided use in favour of employers.

Prison Effectiveness and Reoffense Reduction: Research from the United Kingdom
Albert M. Sinclair
In series: European Political, Economic, and Security Issues
2014. 201 pp.
Hardcover: 978-1-62948-869-1. $195.00.
This book examines the evidence for the effectiveness of prison and programmes in the community aimed at reducing reoffending and some of the claims and counter-claims for whether “prison works”. The main focus of this book is the high prison population and austere financial climate in England and Wales, the challenges these present for the National Offender Management Service (NOMS) and particularly HM Prison Service, and the emerging evidence of “what works” in reducing reoffending.

Understanding Ethnic Segregation in Contemporary Britain
Jamie P. Halsall (School of Human and Health Sciences, University of Huddersfield, West Yorkshire, UK)
In series: European Economic and Political Issues
In series: Social Issues, Justice and Status
2013. 177 pp.
Hardcover: 978-1-62808-487-0. $150.00.
The population of ethnic minorities in Britain has rapidly increased over the last 60 years. The census count indicates that the ethnic population has grown from 3 million in 1991 to 4.6 million in 2001. Issues surrounding ethnic minorities have duly been concerned with education, employment and housing. In 2001, civil unrest erupted in England’s northern mill towns. The inquiries concluded that white and British Asian communities were living parallel lives. This was seen to be a failure within the communities and of social policy. Segregation was cited as a contributory factor. Moreover, in 2005, Trevor Phillips, the chairman of the Commission for Racial Equality, warned that Britain was sleepwalking into racial segregation, with white, black and British Asian ghettos dividing cities. To tackle the segregation problem, central government introduced the community cohesion policy with the aim of developing a better understanding of shared values between all origins of race, thereby celebrating ethnic diversity in Britain. The aims of this research were to consider whether British Asian communities are segregated and to examine the viability of current central government policy in promoting and securing greater community cohesion. Oldham in Greater Manchester was selected as the focus of the investigation. This research shows that the causes of segregation, in the case study of Oldham, are clearly identified in four key areas. Firstly, historical events over the last 60 years have influenced and shaped the development of segregation between different groups, namely British Asian. Secondly, the economic and social transitions brought about by central government have been instrumental in bringing about segregation. Thirdly, local political control has further contributed to Oldham’s segregation. Finally,
participants involved in this research were highly skeptical towards the community cohesion policy introduced in Oldham.

Withdrawal of the United Kingdom from the European Union: Issues and Impacts
Janel R. Weller
In series: European Political, Economic, and Security Issues

In series: Global Political Studies

The Treaty on the European Union provides for a Member State to leave the EU, either on the basis of a negotiated withdrawal agreement or without one. If the UK were to leave the EU following a referendum, it is likely that the Government would negotiate an agreement with the EU, which would probably contain transitional arrangements as well as provide for the UK’s long-term future relations with the EU. There is no precedent for such an agreement, but it would in all likelihood come at the end of complex and lengthy negotiations. The full impact of a UK withdrawal is impossible to predict, but from an assessment of the current EU role in a range of policy areas, it is possible to identify issues and estimate some of the impacts of removing the EU role in these areas. The implications would be greater in areas such as agriculture, trade and employment than they would in, say, education or culture. As to whether UK citizens would benefit from leaving the EU, this would depend on how the UK Government of the day filled the policy gaps left by withdrawal from the EU. In some areas, the environment, for example, where the UK is bound by other international agreements, much of the content of EU law would probably remain. In others, it might be expedient for the UK to retain the substance of EU law, or for the Government to remove EU obligations from UK statutes. Much would depend on whether the UK sought to remain in the European Economic Area (EEA) and therefore continue to have access to the single market, or preferred to go it alone and negotiate bilateral agreements with the EU.

FINANCE

Accredited Investors: Qualifying Criteria and Alternatives for Consideration
Martha-Jean Jennings
In series: Business Economics in a Rapidly-Changing World
2014. 76 pp.
Softcover: 978-1-63117-323-3. $52.00.
e-book: 978-1-63117-324-0. $52.00.

Under the federal securities laws, a company or private fund may not offer or sell securities unless the transaction has been registered with the SEC or an exemption from registration is available. Certain securities offerings that are exempt from registration may only be offered to, or purchased by, persons who are accredited investors. One principal purpose of the accredited investor concept is to identify persons who can bear the economic risk of investing in these unregistered securities. Of the existing criteria in the Securities and Exchange Commission’s (SEC) accredited investor standard, many market participants identified net worth as the most important criterion for balancing investor protection and capital formation. This book examines market participants’ views on the existing criteria for accredited investor status and alternative criteria.

Contemporary Issues in Islamic Finance: Principles, Progress and Prospects
Andrew C. Worthington (Department of Accounting, Finance and Economics, Griffith Business School, Griffith University, Australia)
In series: Business Economics in a Rapidly-Changing World
Hardcover: 978-1-62948-905-6. $150.00.

In this book, the authors present topical research in the study of labor market policies, challenges and its role in globalization. Topics discussed include work values and educational sociodemographics from a sample of young people in vocational education in Barcelona, Spain; the economic restructuring of rural communities through rural tourism; challenging globalization and a theory of marginality using the case of public school teachers in the Dominican Republic; and a review of the development of comprehensive lifelong learning strategies in enhancing employment, combating unemployment and increasing competitiveness in the European Union.

Failed Financial Companies: Analyses and Proposals for More Orderly and Effective Bankruptcies
Oliver Craig
In series: Business, Technology and Finance
Hardcover: 978-1-63117-266-3. $195.00.

The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd- Frank Act) mandates that GAO report on an ongoing basis on ways to make the Code more effective in resolving certain failed financial companies. This book examines advantages and disadvantages of certain proposals, such as proposals to change the role of financial regulators in the bankruptcy process, affecting funding of financial company bankruptcies, and to change the safe-harbor treatment of QFCs. Furthermore, this book provides information on the complex financial institutions and international coordination challenges of bankruptcy.

Federal Financial Reporting: Elements and Considerations
Denise Mahoney
In series: Financial Institutions and Services
Hardcover: 978-1-62948-871-4. $52.00.
e-book: 978-1-62808-032-2. $52.00.

Companies and individuals use political intelligence to understand the potential effects of legislative and executive branch actions on business, finance, and other decisions. The STOCK Act of 2012 directed the Government Accountability Office (GAO) to report to Congress on the role of political intelligence in the financial markets. This book examines the legal and ethical issues, if any, that may apply to the sale of political intelligence; what is known about the sale of public and nonpublic political intelligence information, the extent to which investors rely on such information, and the effect the sale of political intelligence may have on the financial markets; and any potential benefits and any practical or legal issues that may be raised from imposing disclosure requirements on those who engage in these activities.
Federal Recommendations for Improving Financial Capability
Crystal M. Kirby
In series: America in the 21st Century: Political and Economic Issues
Hardcover: 978-1-63117-038-6. $110.00.
The President’s Advisory Council on Financial Capability was created January 29, 2010, by Executive Order to advise the President and the Secretary of the Treasury on ways to empower Americans to better understand and address financial matters in order to improve their financial well-being. This book includes a final report discussing the President’s Advisory Council on financial capability; provides a strategic framework for employers; a resource guide on creating financially capable communities; and a guide to increasing financial capability among students, workers and residents in communities.

Financial Crises: Causes, Management and Economic Impact
Karl Farmer (University of Graz, Department of Economics, Germany)
In series: Business Economics in a Rapidly-Changing World
Hardcover: 978-1-62257-296-0. $150.00.
Softcover: 978-1-63117-218-2. $89.00.
Financial crises aggravated by high-leveraged financial institutions and/or heavily indebted private agents occur rarely but their economic impacts are severe: firms go bankrupt, credit crunch emerges, unemployment rises dramatically and sovereign debts sour. Like severe natural disasters their forecast is difficult if not impossible. Nonetheless, the literature on financial crises, in particular on the global financial crisis 2007-2009, is already voluminous. The overall picture this literature is painting regarding the emergence and propagation of the latest crisis is rather well researched and main insights are broadly accepted. However, there are some specific aspects of crisis causation, crisis management and the economic impacts of severe financial crises which are not well addressed so far. This book discusses the topics of contagion in emerging stock markets during the Asian and Latin American crisis and the relationship between the executive compensation structure and the banks’ riskiness of asset portfolios.

Financial Information Sources: Scope of Education and Marketing Activities
Dana Vogel
In series: American Political, Economic, and Security Issues
Softcover: 978-1-63117-040-9. $52.00.
e-book: 978-1-63117-051-5. $52.00.
The Consumer Financial Protection Bureau (the CFPB) looked at the information sources consumers are exposed to when they make financial decisions. Empowering consumers to make the financial decisions that will help them meet their own life goals is a critical part of the mission of the CFPB. This book discusses a comparison of spending on financial education and financial marketing, and an overlap of programs that suggest there may be opportunities for consolidation.

Financial Regulatory Reform: Benefits, Costs, and Challenges of the Dodd-Frank Act
Breen C. Sanders
In series: Financial Institutions and Services
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-62948-127-2. $110.00.
The 2007-2009 financial crisis threatened the stability of the U.S. financial system and the health of the U.S. economy. To address regulatory gaps and other problems revealed by the crisis, Congress enacted the Dodd-Frank Act. Federal regulators will need to issue hundreds of rules to implement the act. Industry representatives, academics, and others generally have supported the act’s goal of enhancing U.S. financial stability, but implementation of certain of the act’s provisions has led to much debate. These experts have expressed a wide range of views on the potential positive and negative effects that the act could have on the U.S. financial system and broader economy. This book examines the losses associated with the recent financial crisis; the benefits of the act for the U.S. financial system and the broader economy; and the costs of the act’s reforms. The Government Accountability Office (GAO) reviewed empirical and other studies on the impacts of financial crises and the Dodd-Frank reforms, as well as congressional testimonies, comment letters, and other public statements by federal regulators, industry representatives, and others.

Money Management for Financial Caregivers: Guidance and Responsibilities
Olivia Crowder
In series: Aging Issues, Health and Financial Alternatives
Softcover: 978-1-63117-042-3. $52.00.
In this book the authors present information, guidance and responsibilities of money management for financial caregivers. Topics discussed in the book includes helpful information on help for agents under a power of attorney; help for court-appointed guardians of property and conservators; help for trustees under revocable living trust; help for representative payees and VA fiduciaries; top tips for selecting a financial professional; and what you need to know before choosing an investment adviser.

Older Adults and Financial Advisers: Senior Designation Risks and Verification Guidance
Joanna Grove
In series: Aging Issues, Health and Financial Alternatives
Softcover: 978-1-63117-044-7. $52.00.
The mission of the Consumer Financial Protection Bureau is to help financial markets work for consumers by making rules more effective, by consistently and fairly enforcing those rules, and by empowering consumers to take more control over their economic lives. In this book, the Bureau provides information on senior designations for financial advisers as well as recommendations for knowing your financial adviser. The recommendations in this book seek to reduce consumer confusion and protect consumers by improving the dissemination of information and consumer education around senior designations, standards for the acquisition of senior designations, standards for senior designee conduct, and enforcement related to the misuse of senior designations.
Public Finance: Lessons from the Past and Effects on the Future
Miguel-Angel Galindo Martin (Universidad de Castilla-La Mancha, Spain), Cristina Nardi Spiller (University of Verona, Italy)
In series: Financial Institutions and Services
Hardcover: 978-1-61324-982-6. $165.00.
Softcover: 978-1-62948-149-4. $79.00.
e-book: 978-1-61470-014-2. $165.00.
There are important lessons to be learned and analytical frameworks to be adapted and reused from the body of reference provided by the past history of public finance. This makes it possible to approach themes in terms of the actions of policy makers in various operating sectors of the economy: money, foreign exchange, finance, industry, labour relations, international trade, taxation and so on. One other key function carried out by the central authorites is the enactment and enforcement of rules governing competition between economic agents. Furthermore, in many countries, goods and services are produced by public sector enterprises, which emphasize that public intervention comes in many shapes and forms. In this book, attention centers on the fiscal sector where government intervention has a crucial impact on private saving and investment, public spending decisions, taxation and government revenues, including the funding of budget deficits.

Vivian Kelemen
In series: Business, Technology and Finance
Softcover: 978-1-63117-527-5. $52.00.
e-book: 978-1-63117-528-2. $52.00.
Shadow banking refers to financial firms and activities that perform similar functions to those of depository banks. Although the term is used to describe dissimilar firms and activities, a general policy concern is that a component of shadow banking could be a source of financial instability, even though that component might not be subject to regulations designed to prevent a crisis, or be eligible for emergency facilities designed to mitigate financial turmoil once it has begun. This book develops a general framework for analyzing financial intermediation, and applies these concepts to several specific shadow banking sectors. The book focuses on comparing and contrasting the fundamental economic problems of simple banking and associated policy responses to analogous problems and policy proposals in shadow banking.

FINE ARTS

Public Libraries in the United States: Data, Trends, and State Profiles (With Accompanying CD-ROM)
Torrell Danielsen
In series: Fine Arts, Music and Literature
2013. 159 pp.
Public libraries provide critical learning and information resources for individuals, families, local businesses, and non-profits. They broaden opportunities for people of all ages through access to collections and technology and by providing expert assistance from information professionals. Many public libraries anchor community improvement efforts by providing programming that addresses the health, educational, and workforce development needs of local residents. In communities across the country, local libraries compliment commercial development activity and provide attractive neighborhood amenities in residential settings. In FY 2010, there were 8,951 public libraries in the 50 states and the District of Columbia with 17,078 public library branches and bookmobiles. This total translates to approximately 3.0 public libraries and 5.8 outlets for every 100,000 people. This book focuses on the character of public library services, funding and resource changes, and current trends in the public library workforce, and also highlights statistics at the national level. Data from all states has been aggregated to provide current national estimates and to examine trends from prior years.

FOREIGN POLICY

Brazil, Cuba, and Mexico: Human Rights and Religious Freedom Reports
Goran S. Nielsen
In series: Human Rights: Background and Issues
In series: Latin American Political, Economic, and Security Issues
Hardcover: 978-1-62808-784-0. $110.00.
This book examines human rights issues and religious freedom reports in the countries of Brazil, Cuba and Mexico, with a focus on religious demography and government practices.

Foreign Aid: Analyses of Efficiency, Effectiveness and Donor Coordination
Elizabeth S. Taylor
In series: Foreign Policy of the United States
Softcover: 978-1-62618-902-7. $52.00.
e-book: 978-1-62618-903-4. $52.00.
Foreign assistance is a fundamental component of the international affairs budget and is viewed by many as an essential instrument of U.S. foreign policy. Since the terrorist attacks of September 11, 2001, foreign aid has increasingly been associated with national security policy. U.S. foreign aid policy has developed around three primary rationales: national security, commercial interests, and humanitarian concerns. These broad rationales are the basis for the myriad objectives of U.S. assistance, including promoting economic growth, reducing poverty, improving governance, expanding access to health care and education, promoting stability in conflictive regions, promoting human rights, strengthening allies, and curbing illicit drug production and trafficking. This book provides analyses of the efficiency, effectiveness and donor coordination outcomes relating to foreign aid.

Palestine Investment Fund and U.S. Foreign Aid
Leon D. Velasco
In series: Foreign Policy of the United States
Softcover: 978-1-62948-401-3. $52.00.
e-book: 978-1-62948-402-0. $52.00.
The West Bank and Gaza are comprised of about 2,400 square miles and have a combined population of 4.3 million people. The Palestinian Authority and Israel administer areas within the West Bank, and the Hamas-controlled de facto authorities operate in Gaza. A negotiated two-state solution to the Israeli-Palestinian conflict is a core U.S. national security objective. The U.S. government’s foreign assistance program in the West Bank and Gaza is designed to advance progress toward the two-state solution by helping the Palestinian Authority build the institutions of a future Palestinian state, creating an atmosphere that
supports negotiations, and improving the everyday lives of Palestinians, thereby contributing to the overall stability and security of the region. The U.S. government has provided assistance to the West Bank and Gaza both bilaterally and multilaterally for several decades. According to the State Department, the U.S. government is one of the largest donors to the Palestinian Authority, providing about $3 billion in bilateral assistance for fiscal years 2008 through 2012 to support education and social services, economic development, and humanitarian assistance, among other sectors. This book describes (1) the nature and scope of U.S. government involvement with the Palestine Investment Fund (PIF), and (2) the processes for vetting PIF and other non-U.S. entities. To address these objectives, the Government Accountability Office (GAO) reviewed and analyzed annual reports, U.S. antiterrorism policies, agency-specific vetting policies and procedures, and applicable program agreements obtained from PIF and relevant U.S. agencies and their implementing partners.

Global Affairs

Rabeca E. Rouse
In series: Countries of the World: Developments, Issues and U.S. Relations
Hardcover: 978-1-62808-657-7. $135.00.
This series addresses new developments, issues and U.S. relations with countries around the world. Topics discussed in this compilation include The United Kingdom and U.S.-UK Relations; U.S. security cooperation with New Zealand and U.S. rebalancing to Asia strategy; an overview and policy issues of the U.S.-Taiwan relationship; the political overview and economic conditions in Chile; the political, security, and socio-economic conditions and U.S. relations with Guatemala; background and U.S. policy issues with Moldova; and political developments and bilateral relations between the U.S. and Nepal.

Rabeca E. Rouse
In series: Countries of the World: Developments, Issues and U.S. Relations
Hardcover: 978-1-63117-547-3. $110.00.
e-book: 978-1-63117-548-0. $110.00.
This series addresses new developments, issues and U.S. relations with countries around the world. Topics discussed in this compilation include U.S. relations with North Korea; U.S. and Cambodia relations; U.S. relations with Sri Lanka; and political developments and implications for U.S. interests with Armenia, Azerbaijan, and Georgia.

Health, Violence, Environment and Human Development in Developing Countries
Alexander Cotte Poveda and Clara Inés Pardo Martínez (Department of Economics, University of Göttingen, Germany)
In series: Countries, Regional Studies, Trading Blocks, Unions, World Organizations
Hardcover: 978-1-62948-038-1. $150.00.
Currently, developing countries seeking to maintain a sustained long-term growth is a key factor in increasing the welfare of their populations. Topics such as health, violence and the environment are decisive factors for strengthening human development and achieving sustainable development in these countries that have a variety of resources, accompanied by problems with corruption and governance. It is for this reason that this book, which focuses on health, violence, the environment and human development from the different perspectives of these countries, is integral for furthering a well-rounded discussion of this topic. Hence, the book combines different scientific approaches for enhancing our understanding of human development by analyzing health, violence and the environment in several developing countries. This text will be essential for anyone that is interested in strengthening human development in developing countries and formulating new strategies for improving health and sustainability development, while decreasing violence and urbanization problems.

Human Rights in the States of the Gulf Cooperation Council
Elias Runeberg
In series: Politics and Economics of the Middle East
Hardcover: 978-1-62808-780-2. $195.00.
This book examines human rights issues in the states of the Gulf Cooperation Council, with a focus on Bahrain; Kuwait; Oman; Qatar; Saudi Arabia; and the United Arab Emirates.

Innovation and Global Competition: The Case of Korea
Frederick Betz, Youngrak Choi, Whasik Min, Won Koo Park and Dong Woo Shin (School of Management of Technology, Korea University, Seoul, Korea)
In series: Business Issues, Competition and Entrepreneurship
Hardcover: 978-1-62808-713-0. $150.00.
Innovation continues to drive economic development and business competitiveness. In the past centuries, innovation has been focused around national and international business development. But in the twenty-first century, innovation is occurring in a global context, with the factors of innovation changing for success in global competitiveness. While many innovation theories abound, the real test of validity is an empirical success in using innovation to enter and succeed in global markets. While Japan was the principle success story for innovation and competitiveness in the second half of the twentieth century, Korea now has become the exemplar of global success. What strategies and factors have successful Korean firms implemented to achieve global stature? In 2012, Samsung became the largest electronics company in the world, dominating markets in memory semiconductors and displays and smart phones. Hyundai became the fifth largest automobile manufacturer in global markets. Posco had emerged from a national steel company into a global company. We review modern innovation theory and examine its practices in cases of successful Korean companies which have attained global stature. We will learn from the Korean experience in global competition, six important principles about the interaction between the economy and innovation: (1) a dynamic firm capability in both innovation and capital commitment, (2) an industrial economy-of-scale of innovative production capabilities (3) an industrial economy-of-scale in innovating new products, (4) a strong national research & development capability for advancing technology, (5) a strong national university system for developing educated human resources, and (6) a strong
national infrastructure capability for fostering commercialization of new business. Also, we learn that in the global marketplace for any competitive nation, there is no such thing as a ‘post-industrial economy’.

Kazakhstan: Conditions, Issues and U.S. Relations
Randall M. Hoyt and Morris B. Weston
In series: Global Political Studies
In series: Asian Political, Economic and Security Issues
2013. 142 pp.
Softcover: 978-1-62948-356-6. $52.00.
e-book: 978-1-62948-357-3. $52.00.
Kazakhstan is an important power in Central Asia by virtue of its geographic location, large territory, ample natural resources, and economic growth, but it faces ethnic, political, and other challenges to stability. Kazakhstan gained independence at the end of 1991 after the break-up of the former Soviet Union. Kazakhstan’s president at the time, Nursultan Nazarbayev, was one of the top leaders of the former Soviet Union and was instrumental in forming the successor Commonwealth of Independent States. He has been reelected president of Kazakhstan several times and in June 2010 was proclaimed the “Leader of the Nation” with lifelong ruling responsibilities and privileges. Kazakhstan’s economy is the strongest in Central Asia, buoyed by oil exports. Its progress in democratization and respect for human rights has been halting, according to most observers. Nonetheless, Kazakhstan’s pledges to reform convinced the Organization for Security and Cooperation in Europe (OSCE) to select the country’s leadership for its 2010 presidency. This book examines recent developments and U.S. interests in Kazakhstan with a focus on human rights, international religious freedom and investment climate.

Sten M. Burstrom
In series: Politics and Economics of the Middle East
2013. 197 pp.
Hardcover: 978-1-62808-796-3. $195.00.
e-book: 978-1-62808-797-0. $195.00.
Seismic cultural and political shifts are under way in the Arab Gulf monarchies. The political upheavals and transitions that have swept through the Arab world over the last 2 years have not toppled the Arab Gulf rulers, but did not leave them untouched either. Rulers of Gulf Cooperation Council (GCC) states face heightened internal and external challenges and uncertainties. Pro-democracy protests and calls are extending from Bahrain to other oil-rich countries of the Arabian Peninsula. The expectations of GCC citizens, particularly the educated youth, are increasingly moving from socio-economic demands to political ones. They are now not only asking for jobs or wage increases, but also for more political participation and accountability. Chief among internal challenges is the resurgence in several GCC countries, particularly Bahrain and Saudi Arabia, of a decades-long sectarian rift between the Sunni regimes and their Shia subjects. The Gulf regimes’ already tense relations with Iran have worsened on the basis of alleged Iranian interference inflaming sectarian tensions in Bahrain and across the broader region. In this book, the authors assess the challenges facing the region’s rulers, and propose meaningful political reform as a means of mitigating them.

Micronesia and the Marshall Islands: A Review of their Use of Compact Funds
Brendan E. Montague
In series: Global Political Studies
Hardcover: 978-1-62948-589-8. $110.00.
The Republic of the Marshall Islands (RMI) and the Federated States of Micronesia (FSM) are located in the Pacific Ocean just north of the equator, about 3,000 miles southwest of Hawaii and about 2,500 miles southeast of Japan. The FSM is a federation of four semi-autonomous states and has a population of approximately 103,000 (as of 2010) scattered over many small islands and atolls. The FSM states maintain considerable power, relative to the FSM National Government, to allocate U.S. assistance and implement budgetary policies. This book examines (1) the FSM’s and RMI’s use of compact funds in the education and health sectors; (2) the extent to which the FSM and RMI have made progress toward stated goals in education and health; and (3) the extent to which oversight activities by the FSM, RMI, and U.S. governments ensure accountability for compact funding and information on infrastructure spending.

Police Reform in the Former Soviet States of Georgia and Kyrgyzstan: Analysis and Country Backgrounds
Natalie Barros
In series: Global Political Studies
In most Soviet successor states, the police (militia) are among the least trusted government agencies. The police are frequently seen as representatives of the state who are allowed to persecute ordinary citizens, extort bribes, and protect the real criminals. This leads to cycles of mutual antagonism in which society does not expect the police to perform their function properly, and the police are unable to enforce state regulation on society. In the examples of Georgia and Kyrgyzstan in this book, one of the authors examine which domestic processes will likely fail and which have a chance to succeed in changing the post-Soviet police from a punitive institution into a more democratic entity. The book then continues to provide the reader with information on recent developments and the interests of the United States in Georgia and Kyrgyzstan.

GLOBALIZATION

Corporate Governance and MNES in Globalization & Cyberspace
Georgios I. Zekos (Advocate & Economist, Serres-Macedonia-Hellas, Greece)
In series: Global Economic Studies
Hardcover: 978-1-62618-991-1. $230.00.
Globalization is the phenomenon of improved integration of the world economy as evidenced by the growth of international trade and factor mobility. Globalization involves primarily liberalization of trade in goods and services, and a free movement of direct and portfolio capital. Nowadays, globalization is distinguished in part because of the major role of information technology and cyberspace. Cyberspace includes a range of places connected to real space in many different ways. A communications network changes the character of existing space. Thus, changes in the ways that information is experienced and the ways that economic, political, and personal dealings are structured, change the nature of real space. There is a shift from international law to law and globalization providing a new incentive for erasing the artificial boundary between public and private international law. Despite the fact that international financial institutions and MNEs are the engines of economic globalization, powerful states remain the vital drivers. Global governance is defined as the amount of laws, norms, policies, and institutions that identify, constitute, and mediate trans-border relations between states, cultures, citizens, intergovernmental and nongovernmental organizations, and the market. Corporate governance
focuses wholly on protecting the interests of equity claimants in a company, expanding its focus to deal with the problems of “stakeholders” or non-shareholder constituencies. New communication and circulation technologies together with the elimination of trade and investment barriers have shaped global markets with global competition for corporate control, commodities, services and capital. MNEs taking up a transnational strategy seek to achieve concurrently global effectiveness and local responsiveness with the assets and activities dispersed but specialized.

Economics and Law on Competition in 21st Century Globalization

Georgios I. Zekos (Asylum Office of Thessaloniki, Police Building, Thessaloniki, Greece)

In series: Global Economic Studies


21st century globalization is distinguished by institutional and political reforms in many countries such as gradual trade liberalization and international coordination of policies. This author considers globalization as a nonstop process leading to the convergence of the civilizations, lower cost of production, controlled freedom of communications, guarded advancements of technology, shrinking of distances via advanced transportation means and the economic funds utilize their powers demolishing any local lawful revolutionary efforts exploiting the globe with a fairly democratic way at present. The global economic funds should avoid a gradually undemocratic exploitation of the globe in order to bypass/avoid a global conflict looming in the end of the road of an autocratic globalization lacking any ethical values. Moreover, globalization has created centers of power that are alongside, even in competition, with the power of states. Innovation demands extensive upfront R&D costs and strong intellectual property protection is not disconnected from competition principles, but rather, is a vital part of antitrust policy as a whole. Sound intellectual property rights protection creates the competitive environment required to allow companies to profit from their inventions, which encourages innovation efforts.

Suburbanization Versus Peripheral Sustainability of Rural-Urban Areas Fringes

Miroslawa Czerny and Guadalupe Hoyos Castillo (Department of Geography and Regional Studies, University of Warsaw, Poland)

In series: Urban Development and Infrastructure

2014.
Hardcover: 978-1-63117-429-2. $110.00.

The suburbanization process is an inherent, integral feature of urbanization and the growth of cities around the world. Since an increasing amount of people are seeking to live in cities, the latter must grow spatially, encroaching more and more markedly upon surrounding areas. The research on the degree to which development in rural areas is sustainable, as well as on the directions that development is taking1 is making the multi-aspect nature of the process clear, as was noted in the course of discussions on the obtained results taking place at different stages in the international fora. Many questions arising were concerned with specific conditioning and requirements inherent in bringing sustainable development into effect in areas as diversified as the rural and agricultural areas present around the world. The monograph presented here has suburbanization processes as its lead topic. In fact, a great number of studies have already been devoted to this, as well as to the closely related issue of urban sprawl. Indeed, in every country in which urban agglomerations are taking shape and metropolitanisation is occurring, there are also manifestations of suburbanization, and inevitably also research into that phenomenon.

GOVERNMENT

Congressional Gold Medals: 1776-2013

Amanda Perry-Jenkins

In series: Congressional Policies, Practices and Procedures

Softcover: 978-1-62948-848-6. $52.00.

Senators and Representatives are frequently asked to support or sponsor proposals recognizing historic events and outstanding achievements by individuals or institutions. Among the various forms of recognition that Congress bestows, the Congressional Gold Medal is often considered the most distinguished. This book responds to congressional inquiries concerning the nature, history, and contemporary application of the process for awarding Gold Medals, and includes a historical examination and chronological list of these awards.

Federal Acquisition Regulation and Acquisition Workforce Training: Elements and Analyses

Ben C. Everett and Warren Lester

In series: Government Procedures and Operations

2013. 143 pp.
Hardcover: 978-1-62808-432-0. $110.00.

The federal government is the largest buyer of goods and services in the world, and executive branch agencies, particularly the Department of Defense, make most of these purchases. Many (although not all) acquisitions by executive branch agencies are subject to the Federal Acquisition Regulation (FAR), which can make FAR a topic of interest to members and committees of Congress and their staff. In particular, members, committees, and staff may find themselves (1) considering or drafting legislation that would amend FAR to save money, promote transparency, or further other public policies; (2) conducting oversight of executive agencies’ performance in procuring goods and services; and (3) responding to questions from constituents regarding executive branch procurement activities. This book provides background and analyses of FAR and the standards and policies for federal acquisition workforce training.

Federal Acquisitions: Savings Strategies

Daniel Rose and Harper Armstrong

In series: Government Procedures and Operations

Hardcover: 978-1-62808-418-4. $110.00.
e-book: 978-1-62808-419-1. $110.00.

In fiscal year 2012, the federal government obligated $307 billion to acquire services ranging from the management and operation of government facilities to information technology services, to research and development. Spending on services has increased significantly since fiscal year 2000. The private sector is also increasingly reliant on services, many of which are similar to those that the federal government buys, such as information technology services. Leading companies have been examining ways of managing their services in order to stay competitive, respond to market and stockholder pressures, and deal with economic downturns. The Government Accountability Office (GAO) has reported that leading companies have implemented a strategic approach to improve service acquisition outcomes and identify opportunities for federal agencies, specifically the Department

1Within the framework of NCN-funded project No. 176846. “Strategies for promoting sustainable rural development in regions with high levels of poverty.”
of Defense, to implement improvements across the range of services they purchase. Under the strategic sourcing approach, companies take a hard look at how much they are spending on services and from whom they are buying these services. This book examines and identifies leading company practices for acquiring services and potential opportunities for federal agencies to incorporate these strategic sourcing practices.

**Federal Agencies and the Transfer and Reprogramming of Appropriations**

_Norman L. Marcus_

In series: _Congressional Policies, Practices and Procedures_

2014. 130 pp.

Softcover: 978-1-63117-006-5. $52.00.
e-book: 978-1-62257-150-5. $52.00.

Enacted appropriations and other budgetary legislation may vary in the level of detail they provide regarding how agencies should spend the funds that have been provided. Even when the purpose of appropriations is specified in great detail, agencies may be provided with some flexibility to make budgetary adjustments throughout the fiscal year. This book focuses authorities, limitations, and procedures in the transfer and reprogramming of appropriations; the congressional appropriations process; and the federal budget process.

**Federal Contractors: Past Performance Evaluations, Debarment and Suspension**

_Kent Hayes and Cole J. Gibson_

In series: _Government Procedures and Operations_


Hardcover: 978-1-62808-422-1. $110.00.

Poor performance under a federal contract can have immediate consequences for contractors, who could be denied award or incentive fees, required to pay liquidated damages, or terminated for default. In addition, it could affect their ability to obtain future contracts because various provisions of federal law require agencies to evaluate contractors’ “past performance” and consider past performance information when making source selection decisions in negotiated procurements and when determining whether prospective contractors are “responsible.” “Past performance” refers to contractors’ performance on “active and physically completed contracts.” This book provides an overview of existing legal requirements pertaining to past performance, including the issues raised by contractors’ attempts to challenge (1) agency evaluations of their past performance, (2) source selection decisions based, in part, on consideration of past performance information, and (3) responsibility determinations.

**Federal Judicial Vacancies: Analyses, Implications, and Trends**

_Melanie C. Brown_

In series: _Government Procedures and Operations_

In series: _American Political, Economic, and Security Issues_


Hardcover: 978-1-62808-568-6. $110.00.

During the 111th Congress, lower court nominations and vacancies in the federal courts frequently were a subject of partisan debate. The Senate appeared divided along party lines over the degree of urgency to assign to rising judicial vacancy rates. Democrats stressed the need to fill vacant judgeships as promptly as possible, while Republicans emphasized the importance of deliberately reviewing the qualifications of judicial nominees before voting on whether to confirm. An assertion of some Senate Democrats, one which Senate Republicans declined to make, was that the number or level of judicial vacancies was "historically high." In order to provide Congress with a fuller context for further discussion of judicial vacancies, this book examines the vacancy rates that existed in the U.S. district and circuit courts during the 111th Congress relative to earlier time periods. This book provides an overview and analysis of fluctuations that have occurred in daily judicial vacancy rates from January 1, 1977 through January 2011. For this 34-year period, the book identifies when judicial vacancy rates reached relatively high levels, the apparent causes of these rate increases, and how quickly the rates were reduced.

**Federal Printing: Overview and Selected Issues**

_Neil Cornett_

In series: _Congressional Policies, Practices and Procedures_


Softcover: 978-1-63117-319-6. $52.00.

Periodically, concerns have been raised about the number and variety of products created to document congressional activity. Other concerns focus on the process for authorizing and distributing printed government documents to Members of Congress, committees, and other officials in the House and Senate. These concerns reflect broader issues related to the manner in which government and private information is created, assembled, distributed, and preserved in light of the emergence of electronic publishing and distribution. This book provides an overview and analysis of issues related to the processing and distribution of congressional information by the Government Printing Office. Subsequent sections address several issues, including funding congressional printing, printing authorizations, current printing practices, and options for Congress. Finally, the report provides congressional printing appropriations, production, and distribution data in a number of tables.

**Financial Regulation of U.S. Banking and Securities Markets: An Overview**

_Edwin P. Rouse_

In series: _Banking and Banking Developments_


Softcover: 978-1-62948-998-8. $52.00.

Most people in the United States (and other developed nations) have rejected the Shakespearean maxim, “neither a borrower nor a lender be.” Many people use loans to finance at least part of their education and job training during their youth, use mortgages to finance at least part of their home while starting a family, invest in stocks and bonds during middle age, and rely on the returns to the value of their stocks, bonds, and homes to at least partially pay for retirement during old age. Business firms, municipalities, and sovereign governments also rely on the financial system to help build the productive capital necessary for a well-functioning society and to foster economic growth. This book focuses on the U.S. financial regulatory policy for banking and securities markets and the U.S. implementation of the Basel Capital regulatory framework.

**Foreclosure Rescue Schemes and Federal Efforts to Address Them**

_Donald M. Joslin_

In series: _Government Procedures and Operations_


Softcover: 978-1-62948-934-6. $52.00.

In July 2010, GAO reported on federal efforts to combat foreclosure rescue schemes—schemes that promise but do not deliver foreclosure prevention assistance. Subsequently, the Dodd-Frank Wall Street Reform and Consumer Protection Act required GAO to study
interagency efforts to crack down on these schemes. This book updates GAO’s 2010 report and examines the available information about the prevalence and nature of foreclosure rescue schemes, and the status and scope of the federal government’s multiagency effort and other major initiatives to combat them. It also examines the nature and prevalence of these schemes, federal efforts coordinated to combat these schemes and other major efforts, and factors that may affect federal efforts’ success in combating these schemes.

International Regulatory Cooperation: Activities and Analyses

Lenore Lynch
In series: Government Procedures and Operations
Softcover: 978-1-63117-276-2. $52.00.
Trade has increased as a share of the economy for several years, but U.S. companies can face difficulties competing in foreign markets when countries apply different regulatory requirements to address similar health, safety, or other issues. GAO was asked to examine what U.S. agencies are doing to engage in international regulatory cooperation. This book provides an overview of U.S. regulatory agencies’ international cooperation activities; examines ways that U.S. agencies incorporate outcomes from international regulatory cooperation activities and consider competitiveness during rulemaking; and examines factors identified by U.S. agencies and stakeholders that act as facilitators or barriers to international regulatory cooperation.

Large Corporations and the IRS: Analyses of the Compliance Assurance Process

Richard D. Blackwell
In series: Government Procedures and Operations
2014. 78 pp.
Softcover: 978-1-62948-768-7. $52.00.
e-book: 978-1-62948-769-4. $52.00.
Officials that the Government Accountability Office (GAO) interviewed inside and outside of the Internal Revenue Service (IRS) generally agreed on the potential major benefits of the Compliance Assurance Process (CAP) to taxpayers and IRS as reflected in its goals. These goals include saving IRS time and resources to use for other audits while ensuring compliance, and reducing taxpayer burden while increasing certainty on tax amounts owed. This book focuses on the corporate tax compliance and the IRS determining whether its streamlined corporate audit process is meeting its goals as well as discussing the compliance assurance process receiving favorable feedback.

Managing Federal Employees: Engagement and Stewardship

Jamal Chaisty
In series: Government Procedures and Operations
Hardcover: 978-1-63117-413-1. $135.00.
Employee engagement has an enormous impact on organizational outcomes. Extensive research consistently demonstrates a strong positive relationship between high levels of employee engagement and desired organizational outcomes such as customer satisfaction, safety, low turnover, productivity, and profitability. Engagement refers to a high level of motivation to perform well at work combined with passion for the work. Engaged employees are absorbed intellectually and emotionally in their work and vigorously invest their best efforts in producing the outcomes needed for the organization to achieve its goals. This book discusses managing employee engagement as well as managing public employees in public interest.

Offshore Tax Evasion: A Review of Voluntary Disclosure Programs

Caleb D. McFarlane
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-62808-290-6. $110.00.
Tax evasion by individuals with unreported offshore financial accounts was estimated by one IRS commissioner to be several tens of billions of dollars, but no precise figure exists. By law, U.S. citizens are required to report worldwide income from all sources, including income from offshore accounts. While taxpayers can hold offshore accounts for a number of legitimate reasons, some use them to illegally reduce their tax liabilities, often by not reporting the income earned on these accounts. The IRS has operated four offshore programs since 2003 that offered incentives for taxpayers to disclose their offshore accounts and pay delinquent taxes, interest and penalties. This book examines the nature of the noncompliance of the 2009 Offshore Voluntary Disclosure Program (OVDP) participants; the extent the IRS used the 2009 ODVP to prevent noncompliance; and assesses the IRS’s efforts to detect taxpayers trying to circumvent taxes, interests, and penalties that would otherwise be owed.

Potential Equity Impacts of Road Pricing: Guidance for State, Regional, and Local Governments

Raquel Boles
In series: Government Procedures and Operations
Softcover: 978-1-63117-111-6. $52.00.
e-book: 978-1-63117-121-5. $52.00.
Addressing potential equity issues is often vital to obtaining the support needed to implement road pricing projects. In order for road pricing projects to succeed, the implementing State, regional, and local agencies must understand equity issues, develop mitigating measures, and articulate the issues and mitigation strategy to both decisionmakers and the public. This book provides a guidebook for state, regional, and local governments on addressing potential equity impacts of road pricing; and discusses income-based equity impacts of congestion pricing.

Smart Disclosure: Approaches and Benefits of Federal Government Use

Enzo Mauriac
In series: Government Procedures and Operations
In series: Economic Issues, Problems and Perspectives
Softcover: 978-1-62808-692-8. $52.00.
e-book: 978-1-62808-693-5. $52.00.
Smart disclosure involves providing consumers access to data in user friendly electronic formats, in order to fuel the creation of products and tools that benefit consumers, including tools that will help them make important marketplace decisions. While the Federal Government has promoted access to data for consumers for some time, the growth of the Internet as both a center of commerce and a source of information has made more effective and interactive data access possible. Smart disclosure has received increasing attention in recent years as a distinct policy approach that draws on digital technology, and the approach has begun to gain significant momentum. Agencies across the Federal Government have begun to use smart disclosure in a variety of areas, including health, education, energy, finance, public safety, and more. Smart disclosure empowers consumers to make better-informed decisions when facing complex marketplace choices. Whether consumers are searching for colleges, health insurance, credit cards, airline flights, or energy providers, it can be difficult for consumers to identify the product or service that best suits a particular need. In some cases, the effort required to sift through all of the available information
is so large that consumers default to decision making based on inadequate information. As a result, they may overpay, miss out on a product better suited to their needs, or be surprised by fees. This book summarizes the Federal Government’s efforts in the smart disclosure domain. It also provides recommendations for expanding the use of smart disclosure and promoting effective smart disclosure policies across the Federal Government.

The Adoption Incentives Program: Background and Funding

Patrick L. Cales
In series: Social Issues, Justice and Status
Softcover: 978-1-62948-758-8. $52.00.
e-book: 978-1-62948-759-5. $52.00.

Under the Adoption Incentives program, (Section 473A of the Social Security Act) states earn federal bonuses when they increase adoptions of children who are in need of new permanent families. Funding authorized for this program has been extended twice since it was established, most recently in 2008. This book discusses background related to the Adoption Incentives program, including the longstanding Congressional interest in domestic adoption and the significant increases in adoptions from foster care that have occurred since the middle 1990s. It also discusses the current program, including the incentive structure.

The Federal Contracting Process: Shortcomings, Violators, and Solutions

Manuel P. Jonas
In series: Government Procedures and Operations
2014. 113 pp.
Softcover: 978-1-63117-376-9. $52.00.

In recent years, the federal government has increasingly used the contracting process to procure employee-based service work such as cleaning, security, and construction. However, a new analysis shows that taxpayer dollars are routinely being paid to companies that are putting the livelihoods and the lives of workers at risk. Many of the most flagrant violators of federal workplace safety and wage laws are also recipients of large federal contracts. Some of the nation’s largest federal contractors fail to pay their workers the wages they have earned or provide their employees with safe and healthy working conditions. This book examines this shortcoming in further detail. It also discusses debarment and suspension, which are among the techniques that agencies use to ensure they deal with vendors who are “responsible” in fulfilling their legal and contractual obligations.

The Government Shutdown of 2013: Perspective and Analyses

Rosanne C. Lundy
In series: Government Procedures and Operations
Hardcover: 978-1-63117-112-3. $110.00.

When federal agencies and programs lack appropriated funding, they experience a funding gap. Under the Antideficiency Act, they must cease operations, except in certain emergency situations or when law authorizes continued activity. Failure of the President and Congress to reach agreement on interim or full-year funding measures occasionally has caused government shutdowns. Government shutdowns have necessitated furloughs of several hundred thousand federal employees, required cessation or reduction of many government activities, and affected numerous sectors of the economy. This book discusses the causes, processes, and effects of federal government shutdowns; economic activity during the government shutdown and debt limit brinkmanship; impacts and costs of the October 2013 federal government shutdown; a brief overview of federal funding gaps; and operations of the Department of Defense during a lapse in appropriations.

The U.S. Science and Engineering Workforce: Employment and Wage Trends

Russell B. Hartley
In series: Government Procedures and Operations
2014. 120 pp.
Softcover: 978-1-62948-932-2. $52.00.

Many congressional policymakers have maintained an ongoing interest in the adequacy of the number of U.S. scientists and engineers required to address the needs of U.S. employers, to spur economic growth and job creation through innovation, to maintain U.S. global technological leadership and industrial competitiveness, and to help address important national and societal needs. This book provides employment, wage, and unemployment information for the computer occupations, mathematical occupations, engineers, life scientists, physical scientists, and S&E management occupations. It also discusses immigration of foreign nationals with science, technology, engineering, and mathematics (STEM) degrees; and STEM education.

U.S. House of Representatives: Ethics Enforcement and Discipline

Bruno Montagne
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-62808-364-4. $110.00.
e-book: 978-1-62808-365-1. $110.00.

The United States Constitution provides each House of Congress with the sole authority to establish rules, judge membership requirements, and punish and expel Members. From 1789 to 1967, the House of Representatives dealt with disciplinary action against Members on a case-by-case basis, often forming ad-hoc committees to investigate and make recommendations when acts of wrongdoing were brought to the chamber's attention. Events of the 1960s, including the investigation of Representative Adam Clayton Powell for alleged misuse of Education and Labor Committee funds, prompted the creation of a permanent ethics committee and the writing of the Code of Conduct for Members, officers, and staff of the House. This book outlines the background of ethics enforcement in the House of Representatives, including the creation of both the Select Committee on Ethics and the Committee on Ethics. The book also focuses on various jurisdictional and procedural changes that the committee has experienced since 1967 and discusses the committee's current jurisdiction and procedures.

Unauthorized Aliens and Noncitizens: Access and Eligibility to Federal Benefits

Marzell Kiki
In series: Congressional Policies, Practices and Procedures
Softcover: 978-1-63117-425-4. $52.00.
e-book: 978-1-63117-426-1. $52.00.

Federal law bars aliens residing without authorization in the United States from most federal benefits; however, there is a widely held perception that many unauthorized aliens obtain such benefits. The degree to which unauthorized resident aliens should be accorded certain rights and privileges as a result of their residence in the United States, along with the duties owed by such aliens given their presence, remains the subject of debate in Congress. This book focuses on the
policy and legislative debate surrounding unauthorized aliens’ access to federal benefits.

**Whistleblowing by Federal Employees: Barriers and Protections**  
*Bernard L. Gallagher*  
In series: *Government Procedures and Operations*  
2014. 121 pp.  
Hardcover: 978-1-63117-480-3. $110.00.  
e-book: 978-1-63117-481-0. $110.00.

For more than three decades, the law has recognized the importance of encouraging Federal employees to come forward with reports of any violation of any law, rule, or regulation, or gross mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety. This book explores the extent to which Federal employees perceive wrongdoing, the extent to which they report the wrongdoing they see, and what factors influence their decisions to remain silent or to blow the whistle.

**HEALTH**

**Health Effects of Menthol Cigarettes: An Evaluation of Existing Data and Research**  
*Mark C. Eldridge and Edward Forester*  
In series: *Public Health in the 21st Century*  
Hardcover: 978-1-62948-291-0. $195.00.  

Menthol is widely used in consumer and medicinal products and has long been used in cigarettes, often as a flavor-characterizing additive. In medical products, menthol is regulated as a drug with restrictions on allowable doses and use. There are no product standards for menthol when used in cigarettes. In this report, the FDA has undertaken a thorough review of the available science concerning menthol cigarettes. To accomplish this task, FDA weighed the collective body of evidence for the impact of the use of menthol in cigarettes on public health. In reviewing the science of menthol smoking, FDA divided the scientific evidence into the following broad categories: smoke chemistry and nonclinical toxicology; physiology; biomarkers; patterns of use; marketing and consumer perception of risk; initiation and progression to regular use; dependence; cessation; and disease risk.

**Meeting Mental Health Needs: Service Delivery in Israel**  
*Alexander M. Ponizovsky and Alexander Grinshpoon (Dept. of Mental Health Services, Ministry of Health, Jerusalem, Israel)*  
In series: *Mental Illnesses and Treatments*  
2014.  
Hardcover: 978-1-63117-306-6. $85.00.  

This book summarizes findings of studies that are united by a common theme of needs of psychiatric patients in Israel. The studies were performed from 2001-2010, in the Research Unit of Mental Health Services at the Ministry of Health and were motivated by the authors’ deep need to learn more about the met and mainly unmet needs of mentally ill people, and an urgent demand to develop innovative health services or adjust the existing ones to both meet the needs and improve the quality of care and quality of life of their patients. Although the conception of need is a composite one and can be defined in multiple ways to include different aspects of common wishes motivating human activities and ways of their fulfillment, the authors’ used the Bradshaw definition of need (1972) as ‘perceived’ need or what individuals believe they require. Within the context of health care, a need was considered a lack of health or welfare, or a lack of access to care. All the investigations were conducted in parallel with the Mental Health Reform in Israel and therefore reflect the specific needs and demands of deinstitutionalization. The selection of topics, the emphasis on briefly summarizing research findings rather than exhaustively reviewing the scientific literature and providing practical recommendations are intended to make the book an interesting and useful resource for policymakers, clinicians, and other health professionals, such as clinical psychologists, social workers, occupational therapists, general and family medical practitioners, nursing personnel, family members and other support persons, and perhaps mentally ill persons themselves.

**Public Health Concern: Smoking, Alcohol and Substance Use**  
*Joav Merrick and Ariel Tenenbaum (Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)*  
In series: *Health and Human Development*  
Edited by: *Joav Merrick (National Institute of Child Health and Human Development, Ministry of Social Affairs, Jerusalem)*  
2013. 244 pp.  
Hardcover: 978-1-62948-424-2. $150.00.  

Smoking has well-known health hazards. It is associated with lung cancer, oral cancer, stroke, heart disease, emphysema, and other short- and long-term breathing problems. These troubling facts are very well-known to the public, both adults and adolescents. There is also a concerning association between the use of tobacco and other dangerous behaviors; e.g., the use of other substances such as alcohol and marijuana and high risk sexual behavior. Cognitive and mental problems including anxiety, depression and attention deficit/hyperactivity disorder are also associated with smoking. It is of great concern and frustration that all the above-mentioned facts do not prevent millions from starting to smoke every year around the world. In fact, smoking is practiced by every nation on the planet and appears to take place in every society, regardless of race, color or social status. In this book, we have gathered research from international collaborators to touch on these issues.

**Therapeutic Treatments for Vulnerable Populations: A Training Workbook**  
*Graham Danzer (Alliant International University, California School for Professional Psychology, California)*  
In series: *Mental Illnesses and Treatments*  
2014.  
Hardcover: 978-1-63117-385-1. $150.00.  

This clinical training manual presents a critical analysis of several, very challenging individual therapy cases of severely mentally ill clients of color. Key interchanges and cultural dynamics in the therapies are explored through discussion questions. Key hypotheses’ about those interchanges are supported with citations from research on the subject and are linked to relevant theories. This helps to establish an evidence-based framework for the larger discussion matter. The integration of contemporary theory, research and practice makes this a must have addition to your library of clinical training materials.
United States' Global Health Assistance: Elements and Considerations
Kurk B. Weller
In series: Public Health in the 21st Century
Hardcover: 978-1-62948-387-0. $110.00.
U.S. support for global health has been motivated in large part by concern about emerging and reemerging infectious diseases. Following outbreaks of diseases like severe acute respiratory syndrome (SARS), HIV/AIDS, and pandemic influenza, several presidents have highlighted the threats they pose to economic development, stability, and security and launched a series of health initiatives to address them. In 1996, for example, President Bill Clinton issued a presidential decision directive that called infectious diseases a threat to domestic and international security and called for U.S. global health efforts to be coordinated with those aimed at counterterrorism. President Clinton later requested $100 million for the Leadership and Investment in Fighting an Epidemic (LIFE) Initiative in 1999 to expand U.S. global HIV/AIDS efforts. President George W. Bush recognized the impact of infectious diseases on domestic and global security in his 2002 and 2006 national security strategy papers and created a number of initiatives aimed at them, including the President’s Emergency Plan for AIDS Relief (PEPFAR) in 2004, the President’s Malaria Initiative (PMI) in 2005 and the Neglected Tropical Diseases (NTD) Program in 2006. President Barack Obama also recognized the risk of infectious diseases and made several statements about how their spread across developing countries might impact U.S. security. Through the 2010 Quadrennial Diplomacy and Development Review (QDDR) and the 2010 National Security Strategy, the Obama Administration advocated for the coordination of health programs in other areas, such as security, diplomacy and development. Rather than create an initiative aimed at infectious diseases, President Obama sought to address them by affirming U.S. commitment to global health and refining how U.S. global health programs function. In 2009, President Obama announced the Global Health Initiative (GHI), a $65 billion, six-year strategy aimed at improving the coordination and impact of U.S. global health initiatives. This book provides an overview of global health programs and their effectiveness.

**HEALTH CARE**

Dual-Eligible Beneficiaries of Medicare and Medicaid: Characteristics, Costs, and Policies
Jules Mauthner
In series: Health Care Issues, Costs and Access
2013. 251 pp.
Hardcover: 978-1-62808-731-4. $135.00.
In 2009, the federal and state eboogovernments spent a total of more than $250 billion on health care benefits for the 9 million low-income elderly or disabled people who are jointly enrolled in Medicare and Medicaid. Medicare is a federal program that provides health insurance coverage to people who have disabilities, are diagnosed with certain medical conditions, or are age 65 or older (50 million people in 2009). Medicaid, which is funded jointly by the federal government and the states, provides health care coverage to low-income people who meet specific requirements for income and assets and other eligibility criteria (65 million in 2009). People who are eligible to receive benefits from both programs at the same time are known as “dual-eligible beneficiaries.” All of those beneficiaries qualify for full Medicare benefits, but they differ in the amount of Medicaid benefits for which they are eligible. Seven million are “full duals,” who qualify for full benefits from both programs. The other 2 million are “partial duals,” who do not meet the eligibility requirements for full Medicaid benefits but qualify to have Medicaid pay some of the costs they incur under Medicare. This book examines the characteristics and costs of dual-eligible beneficiaries, focusing on 2009, the most recent year for which comprehensive data were available when the Congressional Budget Office (CBO) began this analysis. The book also examines the different payment systems that Medicare and Medicaid use to fund care for dual-eligible beneficiaries and recent efforts at the federal and state levels to integrate those payment systems and to coordinate the care that such beneficiaries receive from the two programs.

Health Care in the United States: Developments and Considerations, Volume 3
Leone Giangalio
In series: Health Care in the United States: Developments and Considerations
Hardcover: 978-1-62808-737-6. $135.00.
The health care reform debate in the United States raises many complex issues including those of coverage, accessibility, cost, accountability, and quality of health care. Underlying these policy considerations are issues regarding the status of health care as a constitutional or legal right. This book series analyzes the constitutional and legal issues pertaining to the right of health care and the power of Congress to enact and fund health care programs. Other topics discussed in this volume include the U.S. mental health delivery system infrastructure; a review of fluoridation and regulation issues in drinking water; the number, role, and ownership of pharmacy services administrative organizations; strategies used by adults to reduce their prescription drug costs; supply and access to generalist and specialty physicians; trends in potentially preventable hospital admissions among adults and children; medicaid disproportionate share hospital payments; and medicare, medicaid and other health provisions in the American Taxpayer Relief Act of 2012.

Long-Term Care: Considerations and Federal Recommendations for Long-Term Services and Supports
Kevin Pickens
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-63117-108-6. $110.00.
Over 12 million Americans of all ages with functional impairments today rely on personal assistance and other long-term services and supports (LTSS) in their home and community or in an institution to perform daily activities to maintain their quality of living and, when possible, their independence. Most of them receive services and supports from dedicated caregivers that enable them to cope with their cognitive or physical limitations with dignity. This book provides a report to the Congress of the Commission on long term care and discusses issues for congress on the factors affecting the demand for long term care insurance.

Medicaid Financing, Expenditures and Reduction Proposals
Sacha M. Gallopin
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-62808-735-2. $110.00.
Medicaid is a means-tested entitlement program that finances the delivery of primary and acute medical services as well as long-term services and supports. Medicaid is a federal and state partnership that is jointly financed by both the federal government and the states. The
federal government's share for most Medicaid expenditures is called the federal medical assistance percentage (FMAP) rate. Generally determined annually, the FMAP formula is designed so that the federal government pays a larger portion of Medicaid costs in states with lower per capita incomes relative to the national average (and vice versa for states with higher per capita income). Federal Medicaid funding to states is open-ended. The federal government provides states a good deal of flexibility in determining the composition of the state share (also referred to as the non-federal share) of Medicaid expenditures. As a result, there is significant variation from state to state in the funding sources used to finance the state share of Medicaid expenditures. This book provides an overview of Medicaid’s financing structure, including both federal and state financing issues. The Medicaid expenditures section of the book discusses economic factors affecting Medicaid, state variability in spending, and projected program spending. Other issues that are examined include congressional proposals to turn Medicaid into a block grant program, federal deficit reduction proposals affecting Medicaid, and state fiscal conditions affecting Medicaid financing and services.

Medicare Outpatient Therapy Services: Selected Analyses and Recommendations
Harald Gavril
In series: Health Care Issues, Costs and Access
Softcover: 978-1-63117-372-1. $52.00.
Medicare’s outpatient therapy benefit covers services for physical therapy, occupational therapy, and speech–language pathology. These services can be beneficial when medically necessary but may be subject to inappropriate use. Outpatient therapy services are designed to restore function that patients have lost due to illness or injury and to help patients maintain improved function. This book examines methods of improving Medicare's payment system for outpatient therapy services; discusses the implementation of the 2012 manual medical review process; analyzes the billing procedures involved in Medicare outpatient therapy services; and finalizes the discussion with payment systems available for outpatient therapy services.

Mental Health Services for Federal Inmates: Costs and Policies
Wayne P. Anders
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-63117-315-8. $110.00.
The Bureau of Prisons (BOP) is responsible for the care and custody—including mental health care—of more than 219,600 federal inmates. BOP identifies and treats inmates’ mental health disorders, and has procedures in place to assess the provision of mental health services. This book addresses BOP’s costs to provide these services, the extent to which BOP assesses whether its institutions comply with BOP policies for providing services, and the extent to which BOP tracks the costs of providing mental health services to inmates in contract facilities, and assesses compliance with contract requirements.

States’ Establishment of Health Insurance Exchanges
Fredrik C. Lewis and Erin O. Walker
In series: Health Care Issues, Costs and Access
Softcover: 978-1-62808-575-4. $52.00.
e-book: 978-1-62808-576-1. $52.00.
A central provision of The Patient Protection and Affordable Care Act (PPACA) requires the establishment of exchanges in each state, online marketplaces through which eligible individuals and small business employers can compare and select health insurance coverage from participating health plans. Exchanges are to begin enrollment by October 1, 2013, with coverage to commence January 1, 2014. States have some flexibility with respect to exchanges by choosing to establish and operate an exchange themselves (i.e., state-based), or by ceding this authority to HHS (i.e., federally facilitated). States may also choose to enter into a partnership with HHS whereby HHS establishes the exchange and the state assists with operating various functions. According to HHS, 18 states will establish a state-based exchange, while 25 will have a federally facilitated exchange. Seven states will partner with HHS. This book examines the states’ responsibilities for establishing exchanges, the actions selected states have taken, and the challenges they have encountered.

The Affordable Care Act: Developments and Considerations
Sean R. Abernathy
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-63117-197-0. $195.00.
Congress is deeply divided over implementation of the Patient Protection and Affordable Care Act (ACA). Since the ACA’s enactment, lawmakers opposed to specific provisions in the ACA, or to the entire law, have debated implementation of the law on numerous occasions and considered multiple bills to repeal, defund, delay, or otherwise amend the law. Topics discussed in this compilation include the legislative actions to repeal, defund, or delay the Affordable Care Act; health insurance exchanges under the patient protection and ACA; health insurance premium credits in the patient protection and ACA; physician supply; annual fees on health insurers; and Medicaid enrollment requirements under the patient protection and ACA.

The Children’s Health Insurance Program Reauthorization Act
Nikolina Rosseau
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-62808-525-9. $110.00.
The Balanced Budget Act of 1997 established the State Children’s Health Insurance Program (CHIP) under a new Title XXI of the Social Security Act. CHIP builds on Medicaid by providing health care coverage to low-income, uninsured children in families with incomes above applicable Medicaid income standards. The latest official numbers show that CHIP enrollment reached a total of nearly 7.4 million children and nearly 355,000 adults in FY2008. In FY2008, federal CHIP spending totaled $7.0 billion, with states’ projected spending expected to equal $7.9 billion in FY2009. The Children’s Health Insurance Program Reauthorization Act of 2009 (CHIPRA) was first passed in the House on January 14, 2009, and an amended version was passed in the Senate on January 29, 2009. This book examines the history and background the CHIPRA with a focus on the provisions included in the law.

The Future of Post-Human Health Care: Towards a New Theory of Mind and Body
Peter Baofu
In series: Health Care Issues, Costs and Access
Hardcover: 978-1-62948-236-1. $175.00.
Is positive thinking really so healthy that, as Martin Seligman (2000) and Mihaly Csikszentmihalyi passionately thus argued, "we believe
that a psychology of positive human functioning will arise, which achieves a scientific understanding and effective interventions to build thriving individuals, families, and communities’? This optimistic view on positive thinking for health can be contrasted with an opposing view by Barbara Ehrenreich (2009), who “extensively critiqued ‘positive psychology’” and showed “how obsessive positive thinking impedes productive action, causes delusional assessments of situations, and…people are then blamed for not visualizing hard enough and thus ‘attracting’ failure even in situations when ‘masses of lives were lost.’” (WK 2013; R. Byrne 2006) Contrary to these opposing views (and other ones as will be discussed in the book), health care (in relation to mental health and physical health in the context of mind and body) are neither possible (or impossible) nor desirable (or undesirable) to the extent that the respective ideologues (on different sides) would like us to believe. Surely, this questioning of the opposing views on health care does not suggest that the study of health care is worthless, or that those fields (related to health care) like medicine, chiropractic, health system, dentistry, health info tech, nursing, psychiatrics, clinical psychology, occupational therapy, pharmacy, allied health, and so on are unimportant. Needless to say, neither of these extreme views is reasonable. Instead, this book offers an alternative (better) way to understand the future of health care, especially in the dialectic relationships between mental health and physical health in the context of mind and body—while learning from different approaches in the literature but without favoring any one of them (nor integrating them, since they are not necessarily compatible with each other). More specifically, this book offers a new theory (that is, the interconnected theory of health care) to go beyond the existing approaches in a novel way and is organized in four chapters.

U.S. National Health Security Strategy and Implementation Plan

_Dillon H. Kane_

In series: _Health Care Issues, Costs and Access_

In series: _Public Health in the 21st Century_


The United States, like all countries, faces many threats with the potential for large-scale health consequences, including disease outbreaks, natural disasters, and terrorist attacks. Preparing for and responding to these and other threats requires the commitment of, and cooperation among, all segments of society: government, the private sector, local communities, and international partners. This book presents the Nation’s first National Health Security Strategy (NHSS), and Implementation Plan, which is intended to help galvanize efforts to minimize the health consequences associated with significant health incidents. The NHSS was developed in consultation with a broad range of stakeholders, including representatives from local, state, territorial, tribal, and federal government; community-based organizations; private-sector firms; and academia. The vision for health security described in the NHSS is built on a foundation of community resilience—healthy individuals, families, and communities with access to health care and with the knowledge and resources to know what to do to care for themselves and others in both routine and emergency situations. Communities help build resilience by implementing policies and practices to ensure the conditions under which people can be healthy, by assuring access to medical care, building social cohesion, supporting healthy behaviors, and creating a culture of preparedness in which bystander response to emergencies is not the exception but the norm. Securing our Nation’s health is a formidable task and must be a responsibility that is broadly shared among virtually all segments of society.

**HUMAN RIGHTS**

Right to Freedom of Religion or Belief in Muslim Majority Countries: A Comparative Analysis

_Patrick N. Walsh_

In series: _Human Rights: Background and Issues_


Current developments in constitutional drafting are spurring renewed analysis of the existing constitutional landscape in the majority of Muslim countries. New constitutions are being drafted in Egypt, Somalia, Libya, Sudan, Tunisia, and Turkey, among others. Although the drafting and approval processes will no doubt be markedly different in each of these countries, international legal norms are clear about religious freedom standards. In each country, questions will be raised, as they have been in the past, about the relationship between international legal/human rights norms and existing political arrangements in Muslim countries—especially with respect to the internationally recognized right of freedom of thought, conscience, and religion or belief. This study compiles and analyzes constitutional provisions currently in place concerning the relationship between religion and the state, freedom of religion or belief, and related human rights in the 46 majority Muslim countries and in 10 other countries that, while not majority Muslim, are members of the Organization of Islamic Cooperation (OIC).

**IMMIGRATION**

Family-Based and Violence Against Women

Provisions of U.S. Immigration Policy

_Deon Brady_

In series: _Immigration in the 21st Century: Political, Social and Economic Issues_


e-book: 978-1-63117-537-4. $52.00.

Family reunification is a key principle underlying U.S. immigration policy. It is embodied in the Immigration and Nationality Act (INA), which specifies numerical limits for five family-based admission categories, as well as a per-country limit on total family-based admissions. This book provides an examination of family-based immigration policy. In doing so, it outlines a brief history of U.S. family-based immigration policies, discusses current law governing admissions, and summarizes recommendations made by previous congressionally mandated committees charged with evaluating immigration policy. The Immigration and Nationality Act (INA) also includes provisions to assist foreign nationals who have been victims of domestic abuse. These provisions, initially enacted by Congress with the Immigration Act of 1990 and the Violence Against Women Act (VAWA) of 1994, afford benefits to abused foreign nationals and allow them to self-petition for lawful permanent resident (LPR) status independently of the U.S. citizen or LPR relatives who originally sponsored them. This book provides further detail on both family-based and violence against women provisions of the United States immigration policy.
Immigrants: Acculturation, Socioeconomic Challenges and Cultural Psychology
Judy Ho (Pepperdine University Graduate School of Education and Psychology, Los Angeles, CA, USA)
In series: Immigration in the 21st Century: Political, Social and Economic Issues
2013. 308 pp.
Hardcover: 978-1-62808-617-1. $150.00.
Immigrants significantly contribute to the ever-expanding diversity of the populations of the countries they reside in, and they bring a wide array of cultural values, norms, and practices that help to make each country unique. The immigrant experience is multidimensional, consisting of at least one and sometimes multiple geographical relocations, and the various socioeconomic, cultural, and psychological challenges that are encountered en route. In this volume, the authors provide insights regarding the multidimensional immigrant experience in different countries around the world. The heterogeneity of immigrant populations in various countries is highlighted in several chapters, and the importance of perceptions on our treatment of immigrants and how it affects the immigrants’ experience is underscored. Several contributions examine the psychological stressors immigrants face, how these stressors affect their mental health status, and how to ameliorate these problems. A number of chapters discuss educational and socioeconomic policies that affect immigrants and how to improve upon them. The common theme amongst the contributions in this volume center on how to improve upon the immigrants’ social, cultural, and psychological experience and to provide them with the tools they need to become healthy, integrated, and involved members of their new host country. This volume is an important step to help inform professionals and laymen alike on how we can support our immigrant populations and help them to break down the barriers they encounter in their migration.

Immigration Inspections and Enforcement At and Between Ports of Entry
Marcella Magdalena
In series: Immigration in the 21st Century: Political, Social and Economic Issues
Softcover: 978-1-63117-409-4. $52.00.
e-book: 978-1-63117-410-0. $52.00.
Controlling admissions is a core element of state sovereignty, but such control entails the opposing goals of preventing unlawful entries, while facilitating legal flows. These policy goals are inherently in tension, as efforts to identify and interdict illegal entrants inevitably challenges, and may delay, the smooth flow of legitimate travelers. The Supreme Court has long held that Congress has absolute authority to control immigration by establishing rules for the admission, exclusion, and deportation of non-citizens. Thus, while the specific issues in U.S. immigration law have evolved over time, a core policy goal has always been to prevent the entry of aliens who threaten U.S. interests. This book focuses on discussing the inspections conducted at each port of entry and then continues to examine the enforcement of immigration between ports of entry.

Immigration Reform: Proposals and Projections
Molloy C. Ross
In series: Immigration in the 21st Century: Political, Social and Economic Issues
Hardcover: 978-1-62948-116-6. $110.00.
For several years, some Members of Congress have favored “comprehensive immigration reform” (CIR), a label that commonly refers to omnibus legislation that includes increased border security and immigration enforcement, expanded employment eligibility verification, revision of nonimmigrant visas and legal permanent immigration, and legalization for some unauthorized aliens residing in the country. Leaders in both chambers have identified immigration as a legislative priority in the 113th Congress. While Members of the House reportedly have considered several different approaches to immigration reform during the spring of 2013, debate in the Senate has focused mainly on a single CIR bill: the Border Security, Economic Opportunity, and Immigration Modernization Act (S. 744). This book summarizes major provisions of S. 744, as reported by the Senate Judiciary Committee. It also discusses H.R. 1417, as reported by the House Homeland Security Committee, a bill that focuses more narrowly on border security strategies and metrics. The analysis focuses on eight major policy areas that encompass the U.S. immigration debate: comprehensive reform “triggers” and funding; border security; interior enforcement; employment eligibility verification and worksite enforcement; legalization of unauthorized aliens; immigrant visas; nonimmigrant visas; and humanitarian provisions. This book provides a detailed discussion of major legislation related to each of these issues.

Unauthorized Aliens in the United States: Selected Analyses and Issues
Kaylynn C. Lawrence
In series: Immigration in the 21st Century: Political, Social and Economic Issues
Softcover: 978-1-63117-484-1. $52.00.
The number of foreign-born people residing in the United States is at the highest level in our history and, as a portion of the U.S. population, has reached a percentage not seen since the early 20th century. The actual number of unauthorized aliens in the United States is unknown. The three main components of the unauthorized resident alien population are aliens who overstay their nonimmigrant visas; aliens who enter the country surreptitiously without inspection; and aliens who are admitted on the basis of fraudulent documents. In all three instances, the aliens are in violation of the Immigration and Nationality Act (INA) and subject to removal. This book will analyze components of the unauthorized population and discuss policy options to provide relief to selected subgroups of particular congressional and public interest.

INTERNATIONAL TRADE

Foreign Trade Barriers to U.S. Exports: Significant Markets and Policies
Anton Molyneux
In series: Trade Issues, Policies and Laws
Hardcover: 978-1-62948-509-6. $230.00.
Trade barriers elude fixed definitions, but may be broadly defined as government laws, regulations, policies, or practices that either protect domestic goods and services from foreign competition, artificially stimulate exports of particular domestic goods and services, or fail to provide adequate and effective protection of intellectual property rights. The 2013 National Trade Estimate Report on Foreign Trade Barriers (NTE) is the 28th in an annual series that surveys significant foreign barriers to U.S. exports. This book provides an overview of this report, which estimates the impact of foreign practices on the value of U.S. exports. Information is also included on some of the actions taken to eliminate foreign trade barriers. Opening markets for American goods and services, either through negotiating trade agreements or
through results-oriented enforcement actions, is the Obama Administration’s top trade priority. This book is an important tool for identifying trade barriers and classifies these barriers into nine different categories. These categories cover government-imposed measures and policies that restrict, prevent, or impede the international exchange of goods and services.

Import Trade and U.S. Customs and Border Protection: Policies and Challenges

Roy A. Morel
In series: Defense, Security and Strategies
Hardcover: 978-1-62808-469-6. $110.00.

International trade is a critical component of the U.S. economy, with U.S. merchandise imports and exports amounting to $2.2 trillion and $1.5 trillion in 2011, respectively. The efficient flow of legally traded goods in and out of the United States is thus a vital element of the country’s economic security. U.S. Customs and Border Protection (CBP), within the Department of Homeland Security (DHS), is the primary agency charged with ensuring the smooth flow of trade through U.S. ports of entry. CBP’s policies with regard to U.S. imports are designed to: facilitate the smooth flow of imported cargo through U.S. ports of entry; enforce trade and customs laws designed to protect U.S. consumers and business and to collect customs revenue; and enforce import security laws designed to prevent weapons of mass destruction, illegal drugs, and other contraband from entering the U.S. - a complex and difficult mission. This book describes and analyzes import policy and CBP’s role in the U.S. import process, with a focus on the legislative history of customs laws; “trusted trader” programs to improve enforcement of intellectual property and trade remedy laws, to strengthen cargo scanning practices, and/or to promote modernization of customs data systems.

Olive Oil: Global Commerce, Competition and Consumption

Tristan D. Martin
In series: Global Agriculture Developments
2013. 280 pp.
Hardcover: 978-1-62948-501-0. $195.00.

Global demand for and consumption of olive oil has increased significantly since the 1990s. While the United States and other “New World” players, such as Australia, Argentina, and Chile, have emerged as both producers and consumers, countries in the European Union (EU) and North Africa still dominate global production, consumption, and trade. Almost 60 percent of global exports by volume were intra-EU trade flows during 2008–12. The largest bilateral trade flows during this period were Spanish exports of olive oil to Italy, where large multinational companies source oil from around the world, blend and bottle it, and then re-export the final product to third-country markets, including the United States. The benchmark for international standards for determining the grade of an olive oil are set by the International Olive Council. Findings suggest that the current standards for extra virgin olive oil are widely unenforced and allow a wide range of olive oil qualities to be marketed as extra virgin. Broad and unenforced standards can lead to adulterated and mislabeled product, weakening the competitiveness of high-quality U.S.-produced olive oil in the U.S. market. In addition, many U.S. consumers are unable to distinguish quality differences and, as a result, gravitate toward less costly oils, giving an advantage to large bottlers that sell low-cost imported product. This book describes and analyzes the factors affecting competition between the United States and major olive oil producing countries. It provides: (a) an overview of global production, consumption, exports, and imports during 2008–12 and 2013 where available; (b) an analysis of the factors impacting consumption in the U.S. market; (c) profiles of the olive oil industries in the United States and other major producing countries; and (d) an examination of competition between firms and countries in both the global and U.S. market.

Trade Adjustment Assistance for Farmers: Program Elements and Effectiveness

Herman Langdon and Jake Macey
In series: Trade Issues, Policies and Laws
2013. 71 pp.
Softcover: 978-1-62948-282-8. $52.00.
e-book: 978-1-62948-283-5. $52.00.
The origin of the Trade Adjustment Assistance for Farmers program can be traced back to a 2000 Department of Labor report recommending that a separate program be enacted “to assist agricultural producers and workers affected adversely by imports” if the objective is to assist them to remain in their current occupations. The report described the existing trade adjustment assistance (TAA) programs that provided (1) limited technical assistance to help business firms (including some that produced agricultural and food products) regain economic competitiveness or to shift into producing other goods, and (2) training assistance to workers (including those employed by some agricultural firms) to facilitate their transition into other occupations. It noted that the provision of direct financial assistance (such as income supplements) to farmers, or efforts to financially enable them to continue producing the commodity adversely affected by imports rather than help them adjust to employment in other sectors, would be inconsistent with the objectives of the then-existing TAA programs. Observers stated that farmers and ranchers typically did not qualify for the TAA workers program because they were self-employed (and thus rarely were eligible for unemployment benefits) and were less likely to want to be retrained for a new occupation (particularly if earning income from producing other crops or from non-farm sources). This book examines the TAA programs elements and effectiveness.

Trade Adjustment Assistance for Firms: Program Elements and Effectiveness

Griffin Hayward
In series: Trade Issues, Policies and Laws
2013. 147 pp.
Hardcover: 978-1-62948-248-4. $110.00.
e-book: 978-1-62948-249-1. $110.00.
Trade liberalization can enhance the economic welfare of all trade partners, but in adjusting to greater competition, many import-competing firms and workers face difficult problems. Since 1962, Congress has responded to these adjustment costs by authorizing trade adjustment assistance (TAA) programs for workers, firms, and farmers, and continues to monitor their performance and amend the governing legislation. This book discusses the Trade Adjustment Assistance for Firms (TAAF) program, which provides technical assistance to trade-affected firms to help them develop strategies to remain competitive in a dynamic international economy. Legislation has been introduced in the 113th Congress that would reauthorize TAA programs, which are set to expire on December 31, 2013. President Obama also has supported TAA reauthorization, linking it to renewal of Trade Promotion Authority (TPA).


Elliot Vasquez and Austin M. Bishop
In series: Trade Issues, Policies and Laws
2013. 296 pp.
As the world’s leading market for electronic products, the United States generates large quantities of used electronic products (UEPs) each year. UEPs are collected from consumers and businesses and evaluated for their value. They are classified as working electronic products and parts to be refurbished and resold, or as non-working goods to be recycled into scrap materials. Both working products and scrap materials may be resold in the United States or exported. These functions are performed by a diverse group of organizations including waste collectors, recyclers, original equipment manufacturers, retailers, brokers, and professional service firms such as equipment leasing companies and information technology (IT) asset management firms. The UEP supply chain is a complicated network of domestic sales and exports. In 2011, total domestic sales of UEPs were valued at $19.2 billion, compared to U.S. UEP exports of $1.45 billion. This book estimates and describes the type, volume, value, and foreign markets of significance for U.S. exports of UEPs and the characteristics of UEPs exported from the U.S. UEPs covered by this investigation include consumer and IT equipment such as audio and visual equipment, computers and peripheral equipment, digital imaging equipment, cell phones and other telecommunication equipment, and component parts of these products.

**INTERNET**

**From Cyber Bullying to Cyber Safety: Issues and Approaches in Educational Contexts**

*Ria Hanewald (Center for Research in Educational Futures and Innovations (CREFI) Deakin University, Australia)*

In series: *Privacy and Identity Protection*

In series: *Internet Policies and Issues*


Hardcover: 978-1-62618-179-3. $175.00.
e-book: 978-1-62618-253-0. $175.00.

Cyber bullying is a growing concern for practitioners, policy makers, educators and parents as Information and Communication Technologies (ICT) are becoming a pervasive part of young people’s lives, especially in the developed world where such new technologies are more widespread. This is a concern for the psychological, educational and physical well-being of victims, bystanders and also the bullies. In response, most educational institutions, governments and numerous non-governmental organizations have initiated prevention and intervention efforts. At the core of these activities is the engagement of young people in digital and interactive experiences in a safe, supportive and enjoyable way and the protection from risks in these environments. This book examines the opportunities and challenges that arise when online environments are used for teaching and learning. Chapters include the notion of digital citizenships, the legal risks in electronic interactions, government and local educational institutions’ policies, parental responsibilities, the willingness of bystanders to intervene in cyber bullying incidents, bullying interactions between real-world and online-world environments and the development of anti-bullying programs and approaches.

**LANGUAGE**

**Compendium of Cognitive Linguistics Research. Volume 2**

*Thomas Fuyin Li*

In series: *Languages and Linguistics*

2013. 219 pp.

Hardcover: 978-1-62618-465-7. $150.00.

This book contains high-quality research of a theoretical and/or empirical/experimental nature, focusing on the interface between language and cognition. It adopts an interdisciplinary, comparative, multi-methodological approach to the study of language in the general cognitive perspective, as well as theory-based practical applications. It incorporates research from the full range of subject disciplines, theoretical backgrounds, and analytical frameworks that inform the language and cognitive sciences.

**Compendium of Cognitive Linguistics. Volume 3**

*Thomas Fuyin Li*

In series: *Languages and Linguistics*


Hardcover: 978-1-62948-914-8. $150.00.

This book contains high-quality research of a theoretical and/or empirical/experimental nature, focusing on the interface between language and cognition. It adopts an interdisciplinary, comparative, multi-methodological approach to the study of language in the general cognitive perspective, as well as theory-based practical applications. It incorporates research from the full range of subject disciplines, theoretical backgrounds, and analytical frameworks that inform the language and cognitive sciences.

**Contact Linguistics in Africa and Beyond**

*Akinmade T. Akande and Rotimi Taiwo (Department of English, Obafemi Awolowo University, Ile-Ife, Nigeria)*

In series: *Languages and Linguistics*


Hardcover: 978-1-62618-296-7. $175.00.

“Contact Linguistics in Africa and Beyond” is an edited volume which focuses on the sociolinguistics of contact linguistics. This volume comprises fifteen chapters with contributions from seasoned sociolinguists such as Myers-Scotton, Peter Auer, Daniel Nkemleke and Edmund Bamiro. Topics such as language contact phenomenon, theories related to codeswitching and code-mixing, and quantitative analysis are examined. The influences of specific hip-hop lyrics and writing styles, and an examination of idiomatic expressions in two languages and their similarities are also discussed.

**From Rules of Grammar to Laws of Nature**

*Joachim Lambek (McGill University, Montreal, QC, Canada)*

In series: *Languages and Linguistics*

2014.

Softcover: 978-1-63117-250-2. $52.00.
e-book: 978-1-63117-332-5. $52.00.

We look at questions debated by pre-Socratic philosophers, emphasize their linguistic motivation and point out attempted answers by modern physics. We pursue a mathematical treatment of the syntax and morphology of natural languages, investigate the foundations of mathematics and speculate about a quaternionic approach to special relativistic quantum mechanics.

**Moving TESOL beyond the Comfort Zone:**

*Handoyo Puji Widodo (Politeknik Negeri Jember) and Gloria Park (Indiana University of Pennsylvania)*

In series: *Languages and Linguistics*


Hardcover: 978-1-63117-034-8. $150.00.
The Future of Post-Human Phonology: Towards a New Theory of Typologies and Rules

Peter Baofu (Full Professor)

In series: Languages and Linguistics


Are words really so determined by rules that, as Leonard Bloomfield once argued in defense of the “morpheme-based” morphology, “word forms are analyzed as arrangements of morphemes,” such that there are “rules to combine morphemes into word forms, or to generate word forms from stems?” (WK 2012) But there is an opposing approach to morphology known as the “word-based” morphology, which “takes paradigms as a central notion,” in that it “states generalizations” which categorize “words... based on the pattern they fit into. This applies both to existing words and to new ones. Application of a pattern different from the one that has been used historically can give rise to a new word,...” (WK 2012) Contrary to these opposing approaches (and other ones as will be discussed in the book), morphology (in relation to both typologies and rules) are neither possible (or impossible) nor desirable (or undesirable) to the extent that the respective ideologues (on different sides) would like us to believe. Surely, this reexamination of different opposing views on phonology does not mean that the study of generality and specificity is futile, or that those fields (related to phonology)—like descriptive linguistics, theoretical linguistics, psycholinguistics, phonetics, speech synthesis, speech perception, morphophonology, articular phonology, laboratory phonology, phonotactics, and so on—are unimportant. (WK 2013) In fact, neither of these extreme views is reasonable. Rather, this book offers an alternative (better) way to understand the future of phonology in regard to the dialectic relationship between generality and specificity—while learning from different approaches in the literature but without favoring any one of them (nor integrating them, since they are not necessarily compatible with each other). More specifically, this book offers a new theory (that is, the inclusionist theory of phonology) to go beyond the existing approaches in a novel way and is organized in four chapters.

LATIN AMERICA

Guatemala: Conditions, Issues and U.S. Relations

Jerrod G. Braunstein

In series: Latin American Political, Economic, and Security Issues

2013. 149 pp.

Since the 1980s, Guatemala, the most populous country in Central America with a population just over 14 million, has continued its transition from a centuries-long tradition of mostly autocratic rule toward representative government. A democratic constitution was adopted in 1985, and a democratically elected government was inaugurated in 1986. A 36-year civil war that ravaged Guatemala ended in 1996. This book provides an overview of Guatemala’s current political and economic conditions, relations with the United States, and several issues likely to figure in future decisions by Congress and the Administration regarding Guatemala. With respect to continued cooperation and foreign assistance, these issues include security and governance; protection of human rights and human rights conditions on some U.S. military aid to Guatemala; support for the International Commission against impunity in Guatemala; combating narcotics trafficking and organized crime; trade relations; and inter-country adoption.

Haiti: Conditions and Reconstruction

Jerald Wetzel

In series: Latin American Political, Economic, and Security Issues


Haiti shares the island of Hispaniola with the Dominican Republic. Since the fall of the Duvalier dictatorship in 1986, Haiti has struggled to overcome its centuries-long legacy of authoritarianism, extreme poverty, and underdevelopment. During that time, economic and social stability improved considerably, and many analysts believed Haiti was turning a corner toward sustainable development. Unfortunately,
Haiti’s development was set back by a massive earthquake in January 2010 that devastated much of the capital of Port-au-Prince and other parts of the country. Poverty remains massive and deep, and economic disparity is wide: Haiti remains the poorest country in the western hemisphere. This book discusses Haiti’s current conditions and congressional concerns under President Martelly; USAID infrastructure projects; testimonies from a hearing on the U.S. aid effectiveness; Haiti 2012 human rights report; and the Haiti 2012 international religious freedom report.

U.S.-Mexico Transboundary Hydrocarbons Agreement: Considerations and Implementation Proposals
Hugh Bruner
In series: Latin American Political, Economic, and Security Issues
2014. 113 pp.
Softcover: 978-1-63117-307-3. $52.00.
e-book: 978-1-63117-308-0. $52.00.
The offshore areas of the Gulf of Mexico provide a setting for domestic and international energy production, U.S. military training and border operations, trade and commerce, fishing, tourist attractions, and recreation. These governmental, commercial, and cultural activities depend on healthy and productive marine and coastal areas for a range of economic and social benefits. Consequences of hurricanes and oil spills demonstrate that offshore areas in the Gulf of Mexico are governed by a number of interrelated legal regimes, including treaties and international, federal, and state laws. This book discusses the legislation proposal of implementing the U.S.-Mexico Transboundary Hydrocarbons Agreement. Another topic discussed in the book is the oil in Mexico in regards to the Transboundary Agreement. Mexican hydrocarbon resources belong to the Mexican people. Popular enthusiasm and national pride is attached to those resources, and many Mexicans directly depend on the existing oil industry for their livelihood and business interests. Crossing into the territory of energy sector reform requires political courage on behalf of Mexican politicians. The United States government emphatically recognizes the privileged position of oil in Mexico’s politics.

LAW

Credit Card Accountability Responsibility and Disclosure Act: Effects and Protections
Oliver P. Meyer
In series: Laws and Legislation
Hardcover: 978-1-62948-689-5. $110.00.
The Credit Card Accountability Responsibility and Disclosure Act of 2009 (“CARD Act” or “the Act”) changed the landscape of the credit card market. The CARD Act was enacted to “establish fair and transparent practices related to the extension of credit” in this market, regulating both the underwriting and pricing of credit card accounts. The CARD Act directs the Consumer Financial Protection Bureau to conduct a biennial review of the consumer credit card market, including the effect of the Act on the cost and availability of credit and the adequacy of protections for consumers relating to credit card plans. This book presents the findings of the Bureau’s review and the impact of the CARD Act on the marketplace.

Guantanamo Detainees: Recidivism and Reengagement Upon Release
Elliot T. Murphy
In series: Global Political Studies
Softcover: 978-1-62948-685-7. $52.00.
The Oversight and Investigations Subcommittee undertook an in-depth, comprehensive bipartisan investigation of procedures to dispatch detainees from the Guantanamo Bay detention facility (GTMO) over the past decade. This included an examination of mechanisms intended to prevent former detainees from reengaging in terror-related activities. This book explores how the Bush and Obama administrations, in reaction to domestic political pressures and a desire to earn goodwill abroad, attempted to advance strategic national security goals, and “release” or “transfer” GTMO detainees elsewhere.

Guest Worker Programs: Select Analyses From Around the Globe
Stanley G. Temple
In series: Laws and Programs
2013. 197 pp.
Hardcover: 978-1-62948-756-4. $110.00.
This book describes programs for the admission and employment of guest workers in fourteen selected countries, the European Union, the Association Agreement between the European Union and Turkey, and the Multilateral Framework of the International Labour Organization. It includes a comparative analysis and individual sections on each country, the EU, and relevant international arrangements. The book provides a general overview of a variety of immigration systems, and addresses issues such as eligibility criteria for the admission of guest workers and their families, guest workers’ recruitment and sponsorship, and visa conditions.

Law and Legal Issues in the United States: Analyses and Developments, Volume 2
Laurent B. Landers
In series: Law and Legal Issues in the United States: Analyses and Developments
2013. 223 pp.
Hardcover: 978-1-62808-776-5. $135.00.
This series provides an overview of current analyses and developments pertaining to the law and legal issues in the United States. Topics covered in this volume include constitutional and statutory privacy protections relating to cloud computing; the Intelligence Identities Protection Act; the legal framework for the protection of classified information; an overview of 18 U.S.C. 1831 and 1832 corresponding to stealing trade secrets and economic espionage; an overview of perjury under federal law; a legal overview of 18 U.S.C. 3144 and the Federal Material Witness Statute; federal grand juries; authority of state and local police to enforce federal immigration law; the Worker Adjustment and Retraining Notification (WARN) Act; and possible legal issues facing landlords who choose not to accept federal housing vouchers.

Local Impaired-Driving Task Forces: Guidance and Case Studies
Neil T. Walsh
In series: Safety and Risk in Society
2013. 192 pp.
Hardcover: 978-1-62948-700-7. $110.00.
Impaired-driving task forces exist to address problems caused by impaired driving primarily through enforcement and education activities. These task forces are sometimes created by State agencies and operate at the statewide level. Prior research has shown that statewide impaired-driving task forces can have a beneficial effect on the incidence/occurrence of impaired driving and impaired-driving crashes. This book focuses on assisting officials and members of the public interested in establishing an impaired-driving task force at a local or regional but not statewide level or who are exploring ways to improve their current task forces.

Online Privacy Laws: European Union & Select Foreign Countries
Ethan P. Williams
In series: Privacy and Identity Protection
In series: Internet Policies and Issues

These reports describe the data protection laws of the European Union (Part I) and of selected foreign countries (Part II). They describe the legal framework for the collection, use, and transfer of data, and examine whether existing laws are adequate to deal with online privacy in an era of rapid technological development and globalization.

Patent Assertion Litigation and the Patent "Trolls" Debate
Stephen P. Copeland
In series: Laws and Legislation
In series: Intellectual Property in the 21st Century
2013. 182 pp.
Hardcover: 978-1-62948-373-3. $110.00.
e-book: 978-1-62948-374-0. $110.00.

Congress has recently demonstrated significant ongoing interest in litigation by “patent assertion entities” (PAEs), which are colloquially known as “patent trolls” and sometimes referred to as “non-practicing entities” (NPEs). The PAE business model focuses not on developing or commercializing patented inventions but on buying and asserting patents, often against firms that have already begun using the claimed technology after developing it independently, unaware of the PAE patent. PAEs include not only freestanding businesses but patent holding subsidiaries, affiliates, and shells of operating companies that want to participate in the PAE industry and/or a new means of countering competitors. The proliferation of PAEs was among the central factors raised in support of the most recent patent reform legislation, the Leahy-Smith America Invents Act of 2011 (AIA). However, the AIA contains relatively few provisions that arguably might impact PAEs, apparently because of lively debate over what, if anything, should be done about them. In the 113th Congress, the Saving High-Tech Innovators from Egregious Legal Disputes (SHIELD) Act of 2013 (H.R. 845) has been introduced in an effort to affect the number of lawsuits filed by PAEs. This book reviews the current debate and controversy surrounding PAEs and their effect on innovation, examines the reasons for the rise in PAE litigation, and explores the legislative options available to Congress if it decides that these are issues that should be addressed.

School Resource Officers: Analyses of Law Enforcement in Schools
Andrew O'Murphy
In series: Social Issues, Justice and Status
In series: Law, Crime and Law Enforcement

Schools have a mission of great importance to our nation; they are responsible for keeping our children safe while educating them and helping prepare them to be responsible and productive citizens. The December 14, 2012, shooting at Sandy Hook Elementary School in Newtown, CT, that claimed the lives of 20 children and 6 adults, has heightened congressional interest in school security. Policymakers have begun debating whether school security can be further enhanced, and if so, how best to accomplish that goal. A wide variety of proposals have been offered at the federal level, such as funding for expanded mental health services for students, funding for training on mental health awareness for school staff, funding to assist schools in improving school climate, funding for more school counselors, and funding for more school resource officers (SROs) or other armed security personnel. Wayne LaPierre, Executive Vice President and CEO of the National Rifle Association, has proposed putting an armed police officer in every school in the country as a way to prevent mass shootings, President Obama has proposed creating incentives for Community Oriented Policing Services (COPS) grants to be used to hire more SROs in the current year. In addition, he has requested $150 million in funding for a new Comprehensive School Safety Program. This new grant program would provide school districts and law enforcement agencies with funding to hire new SROs and school psychologists, among other things. This book focuses on one of these proposals, the renewed focus on providing federal funding for more SROs as a means to preventing school shootings. It examines the distribution of and current number of SROs, the potential sustainability of any increase in the number of SROs, and the effect that SROs may have on students and the academic setting. It also examines what available research studies suggest about the extent to which SROs may reduce school violence. These are issues Congress may consider while contemplating an expansion of SRO programs.

Selected Issues in Maritime Law and Policy: Liber Amicorum Proshanto K. Mukherjee
Maximo Q. Mejia, Jr. (Maritime Law and Policy, World Maritime University, Sweden)
In series: Laws and Legislation
2013. 304 pp.
Hardcover: 978-1-62618-508-1. $175.00.

The international nature of the maritime industry means that ships are subject to the varying legal jurisdictions of the ports in which they call. Law and policy provide a framework necessary for establishing order and harmonization in a highly regulated global industry; they are vital instruments for promoting the safety, security, and commercial efficiency of shipping as well as the protection of the marine environment, in an atmosphere of competing national-contra-global as well as private-contra-public interests. Furthermore, it is of great importance that the legal and policy aspects of maritime activities closely follow the rapid pace of technological and commercial developments. Students and practitioners in maritime law and policy need to be constantly familiar with trends in the shipping industry and possess a solid comprehension of the international legal regimes that not only encourage the sustainable development of global maritime commerce, but also regulate its conduct. This book is a collection of essays dedicated to Professor Proshanto Kumar “PK” Mukherjee, one of the leading lights in the area of maritime law and policy. It presents a mix of background information and insightful analysis by leading experts on a wide range of some of the most pressing and contemporary maritime law and policy topics – ranging from the development of maritime standards (Mbhia) to the challenges of operating flags of convenience (Menha), from the latest convention on the international carriage of goods by sea (Basu Bal) to liability and compensation issues related to ship-source marine pollution (Jacobsson, Xu, Kojima), from the intricacies of marine insurance law (Thomas, Gaucci) to the vagaries of the conflict of laws (Manolis), and from the legal framework for maritime piracy (Menfee) to the...
linkages between political stability, economic development, and piracy (Mejia).

Small Copyright Claims: Challenges and Proposals
Sabrina Loftus
In series: Laws and Programs
Hardcover: 978-1-63117-313-4, $195.00.
The Constitution empowers, and the Copyright Act conveys, a system of exclusive rights for authors, for the benefit of their livelihoods, the livelihoods of other actors in the chain of commerce, and the overall public good. To protect and promote these rights, the law has always included a corresponding set of enforcement provisions allowing copyright owners to redress the unauthorized use of their works. While infringement is nothing new when it comes to the world of creative works, there is no question that it has proliferated with the ascendance of digital culture and the unprecedented desire for content. Today it is not only easy to make unauthorized copies, but to do so at virtually no cost, much to the detriment of authors and the market for their works. This book discusses the remedies for small copyright claims provided by the Graphic Artists Guild, the Association of American Publishers, and American photographic artists.

Supplemental Nutrition Assistance and Unemployment Insurance: Program Features and Participation Patterns
Lanette Rowell
In series: Laws and Programs
Hardcover: 978-1-63117-311-0, $110.00.
The Supplemental Nutrition Assistance Program (SNAP), formerly called the Food Stamp Program, is designed primarily to increase the food purchasing power of eligible low-income households to help them buy a nutritionally adequate low-cost diet. This book describes the rules related to eligibility for SNAP benefits as well as the rules for benefits and their redemption. SNAP is administered by the U.S. Department of Agriculture’s Food and Nutrition Service (USDA-FNS). A variety of benefits may also be available to unemployed workers to provide them with income support during a spell of unemployment. The cornerstone of this income support is the joint federal-state Unemployment Compensation (UC) program, which may provide income support through the payment of UC benefits for up to a maximum of 26 weeks. This book describes three kinds of unemployment benefits which are the regular Unemployment Compensation, Extended Benefit, and Emergency Unemployment Compensation. The book explains their basic eligibility requirements, benefits, and financing structure.

Supplemental Nutrition Assistance Program: Nutrition Education Impact Studies
Ariana Sayers
In series: Laws and Programs
Hardcover: 978-1-63117-374-5, $195.00.
This book summarizes the background, methods, and key findings of the final report produced for the U.S. Department of Agriculture (USDA) Food and Nutrition Service (FNS) study entitled Models of SNAP Education and Evaluation, Wave I, and Wave II. The overarching goal of this book is to determine whether the selected projects can serve as good examples of effective nutrition education and promotion activities within SNAP-Ed.

The Food and Drug Administration Safety and Innovation Act: Provisions and Analyses of User Fees
James C. Perry
In series: Food Safety: Developments, Policies, Programs, and Research
Hardcover: 978-1-62948-774-8. $110.00.
e-book: 978-1-62948-775-5, $110.00.
The Food and Drug Administration Safety and Innovation Act (FDASIA), amends the Federal Food, Drug, and Cosmetic Act (FDCA) to expand the authority of the Food and Drug Administration (FDA) in performing its human drug, biological product, and medical device responsibilities. Frequently referred to as the user fee reauthorization act, FDASIA does include four titles relating to user fees. This book focuses on these acts, as well as the prescription drug user fee act, the FDA medical device user fee program and discusses the proposed FDA user fee acts generic drug user fee amendments.

The Foreign Sovereign Immunities Act: Selected Analyses and the Samantar v. Yousuf Case
Nigel Lathrop
In series: Laws and Programs
2014. 75 pp.
Softcover: 978-1-63117-309-7, $52.00.
e-book: 978-1-63117-310-3, $52.00.
Practical and legal hurdles, including the difficulty of locating hidden Al Qaeda members and the infeasibility of enforcing judgments in terrorism cases, hinder victims’ attempts to establish liability in U.S. courts against, and recover financially from, those they argue are directly responsible for the September 11 terrorist attacks. Instead, victims have sued numerous individuals and entities with only indirect ties to the attacks, including defendants who allegedly provided monetary support to Al Qaeda prior to September 11, 2001. This book summarizes the Foreign Sovereign Immunities Act (FSIA) and jurisdiction in cases against foreign defendants and analyzes the recent court of appeals decision.

Tribal Law and Order: A Plan to Enhance Tribal Justice
Judy Conlon
In series: Laws and Legislation
2014. 94 pp.
Softcover: 978-1-63117-152-9, $52.00.
e-book: 978-1-63117-162-8, $52.00.
In recent decades, Tribal Nations have faced significant problems in addressing public safety issues. Violent crime rates in Indian country are more than 2.5 times the national rate; some reservations face more than 20 times the national rate of violence. Some tribes lack the funding and infrastructure to address these problems. Indian country correctional facilities are inadequate in number and funding may not be sufficient for operations, maintenance and programming. In some Tribal Nations, there are insufficient alternatives to incarceration. In 2010 Congress passed the Tribal Law and Order Act (TLOA) to address these problems. The goal of TLOA is to improve public safety and justice systems in Indian country. This book discusses the Tribal Law and Order Act’s long term plan to build and enhance tribal justice systems as well as the Department of Justice's ability to clarify eligibility for certain grant funds.

U.S. Department of Justice Asset Forfeiture Policy Manual and Guide to Equitable Sharing
Onni Nieminen
In series: Law, Crime and Law Enforcement
In the nearly 25 years since the Comprehensive Crime Control Act of 1984 authorized federal officials to implement a national asset forfeiture program, asset forfeiture has become one of the most powerful tools for targeting criminals, including drug dealers and white collar criminals, who prey on the vulnerable for financial gain. Forfeiture statutes are now prevalent throughout the federal legal code and their use, along with other important anti-crime measures, has had a significant impact on crime. One of the most important provisions of asset forfeiture is the authorization to share federal forfeiture proceeds with cooperating state and local law enforcement agencies. The Department of Justice Asset Forfeiture Program serves not only to deter crime but also to provide valuable additional resources to state and local law enforcement agencies. This book examines the U.S. Department of Justice Asset Forfeiture Policy Manual and Guide to Equitable Sharing Manual, with a focus on assisting state and local law enforcement agencies participating in the program by clarifying the directives they must follow to obtain and use equitably shared funds.

**MATHEMATICS**

**Current Research Topics in Galois Geometry**
*Leo Storme and Jan De Beule (Ghent University, Ghent, Belgium)*

Softcover: 978-1-63117-340-0. $89.00.

Galois geometry is the theory that deals with substructures living in projective spaces over finite fields, also called Galois fields. This collected work presents current research topics in Galois geometry, and their applications. Presented topics include classical objects, blocking sets and caps in projective spaces, substructures in finite classical polar spaces, the polynomial method in Galois geometry, finite semifields, links between Galois geometry and coding theory, as well as links between Galois geometry and cryptography.

**Evolution Equations: New Research**
*Gaston M. N’Guerekata (Morgan State University)*

Hardcover: 978-1-63117-025-6. $150.00.

This book presents and discusses new developments in the study of evolution equations. Topics discussed include parabolic equations; generalized gradient in weak maximum principle with non-differentiable drift; bifluid systems; Yamabe-type flows; stochastic evolution equations; heat equations; Navier-Stokes equations; Cahn-Hilliard equations; and more.

**Mathematical Modeling in Social Sciences and Engineering**
*Juan Carlos Cortés López, Lucas Antonio Jódar Sánchez and Rafael Jacinto Villanueva Micó (Instituto Universitario de Matemática Multidisciplinar/Multidisciplinary Mathematical Institute, Universidad Politécnica de Valencia, Technical University of Valencia)*

Hardcover: 978-1-63117-335-6. $150.00.

This book is devoted to the power of mathematical modeling to give an answer to a broad diversity of real problems including medicine, finance, social behavioral problems and many engineering problems. Mathematical modeling in social sciences is very recent and comes with special challenges such as the difficulty to manage human behaviour, the role of the model hypothesis with the objectivity/subjectivity and the proper understanding of the conclusions. In this book, the reader will find several behavioral mathematical models that in fact may be understood as the so-called epidemiological models in the sense that they deal with populations instead of individuals.

**Native Statistics for Natural Sciences**
*Nabil Semmar (University of Tunis El Manar, Tunis, Tunisia)*

Hardcover: 978-1-62417-956-3. $175.00.

This is a book which presents several step-by-step complementary and chained statistical tools. These tools are applied to analyze structures and variability of natural systems helping to gradually understand and control their complexity. The book is organized into a series of chapters which are extensively illustrated by intuitive figures and simple numerical examples. Statistics represent a large field of applied mathematics aiming to extract and analyze information from sampled data issued from complex systems or populations. Extraction of reliable information on systems requires “a priori” of the application of strategic rules by which intrinsic variability and extrinsic limits are considered. Such strategic rules are given by sampling designs and experimental designs which are applied for open and close systems, respectively. Sampling designs presented in this book include simple random, systematic and stratified designs which are applied to estimate and control variability in open systems having different organizations or distributions. Moreover, sampling designs are appropriate tools for later biodiversity and spatiotemporal analysis of natural systems. Experimental designs include factorial, response surface and mixture designs which are specifically applied to control systems defined by different geometrical structures. Such geometrical structures have different dimensions defined by strategic values of experimental factors which could have potential effects on the studied system.

**Simulated Annealing: Strategies, Potential Uses and Advantages**
*Marcos de Sales Guerra Tsuruki and Thiago de Castro Martins (Escola Politecnica, Sao Paulo University, Brazil)*

Hardcover: 978-1-63117-268-7. $150.00.

This book presents state of the art contributions to Simulated Annealing (SA) that is a well-known probabilistic meta-heuristic. It contains 9 chapters explaining SA key concepts, constraint optimization, hybrid SA combining with other techniques, and several applications: aircraft design, molecule reconstruction, spacecraft trajectory, thermodynamics, truck scheduling and marine protected design scenarios.
MEDIA AND COMMUNICATIONS

Advertising: Types of Methods, Perceptions and Impact on Consumer Behavior
Lucas Barreau
In series: Advertising: Media, Marketing and Consumer Demands
Hardcover: 978-1-62948-612-3. $95.00.
e-book: 978-1-62948-613-0. $95.00.
In this book, the authors present current research in the study of advertising methods and perceptions and their impact on consumer behavior. Topics discussed include the use of tourism distribution channels for advertising a religious "imagined community" in Arcadia, Greece; investing in culture and intercultural relations for advertising and sustainable development of the contemporary European city with the framework of international city branding; a social psychological perspective of marketing strategies appealing to the consumers' uniqueness; social media advertising and its important role in representing and influencing consumer choices; cultural characteristics and how they moderate consumer response to positive and negative feeling advertisements; and consumers and brand loyalty.

Assessing the Digital Nation: Broadband Adoption, Deployment and Use
Darius L. Shea
In series: Media and Communications - Technologies, Policies and Challenges
2013. 177 pp.
Hardcover: 978-1-62948-362-7. $110.00.
Researchers and policymakers recognize that availability and use of high-speed Internet services – a range of connection technologies collectively known as broadband – are essential to economic growth. The United States has made considerable progress towards ubiquitous broadband access, with more than 93 percent of the population living in areas offering wired broadband service, and about 98 percent having access to either wired or terrestrial wireless connectivity at speeds of at least 3 Mbps download and 768 Kbps upload. The Internet has rapidly grown from an academic network into a resource that is now integral to the lives of most Americans. In 2000, only 4 percent of homes used broadband Internet service. By 2011, 69 percent were online at speeds greater than dial-up. By connecting every corner of our country to the digital age, we can help our businesses become more competitive, our students become more informed and our citizens become more engaged. Additionally, our nation’s technology industry leads the way in revolutionizing the nature of Internet use through mobile devices. Smartphones – driven by American-made operating systems and applications – now lead the mobile market. Over one billion smartphone users worldwide carry the global network in their pockets, including the 46 percent of Americans currently using these devices – now surpassing the 41 percent who use traditional mobile phones. Mobile broadband is vital to our future. This book examines online activities, broadband adoption, and reasons some do not go online at home which provide key factual underpinnings for the development of sound policies for increasing broadband adoption in the United States.

Bridging the Digital Divide in Indian Country: Federal Efforts
Reid Louton and Jude Sullivan
In series: Media and Communications - Technologies, Policies and Challenges
2013. 189 pp.
Hardcover: 978-1-62948-170-8. $110.00.
The lack of communications services in Indian Country – be it high speed internet or “broadband”, traditional wireline phone service, mobile service, radio broadcast, or TV broadcast service – is well known. As the Federal Communications Commission (FCC) has observed previously, “by virtually any measure, communities on Tribal lands have historically had less access to telecommunications services than any other segment of the population.” The lack of robust communications services presents serious impediments to Tribal Nations’ efforts to preserve their cultures and build their internal structures for self-governance, economic opportunity, health, education, public safety, and welfare. This book examines federal efforts to bridge the digital divide in Indian country with a focus on the internet infrastructure in native communities and equal access to e-commerce, jobs and the global marketplace.

Cigarettes and Smokeless Tobacco: Sales and Advertising Statistics and Trends
Ronald Markowitz and Jennifer Galucci
In series: Media and Communications - Technologies, Policies and Challenges
In series: Trade Issues, Policies and Laws
2013. 69 pp.
Softcover: 978-1-62808-448-1. $52.00.
This book examines the latest reports in a series on cigarette and smokeless tobacco sales, advertising, and promotion that the Federal Trade Commission (FTC) has prepared since 1967. The statistical tables appended provide information on domestic sales and advertising and promotional activity by the five largest U.S. cigarette and smokeless tobacco manufacturers.

Contemporary Risk Communication: Elements with Applications in a Nanotechnology Context
Jon B. Madsen
In series: Media and Communications - Technologies, Policies and Challenges
In series: Nanotechnology Science and Technology
2013. 150 pp.
Hardcover: 978-1-62808-464-1. $135.00.
Risk communication manages how a potential hazard is represented to multiple audiences. This book details risk communication literature, its strategies, and the research evidence for what happens in a risk analysis when data is unavailable due to randomness or incompleteness. It examines these issues in the context of nanotechnology, as a case study of an emerging technology area that presents risk communication challenges. Inexpert audiences may not assess risk by using equations but rather by weighing a combination of scientific, social, and emotional factors. Understanding risk perceptions and communicating risks related to nanotechnology can pose special issues. For many people, especially people who are unaware, unfamiliar and/or uncomfortable with science, the topic of nanotechnology can be difficult to understand. In addition, for some people, nanotechnology evokes concerns related to the environment, health, safety, or other societal issues. Nanotechnology’s interface with biotechnology and other sciences and the complexity of nanoscience applications, present numerous challenges to risk communicators.

Emergency Alert System: National Integration Efforts and Assessments
Gregory Raisman and Kevin Kimes
In series: Electronics and Telecommunications Research
In series: American Political, Economic, and Security Issues
Hardcover: 978-1-62808-446-7. $110.00.
An effective system to alert the public during emergencies can help reduce property damage and save lives. In 2004, the Federal Emergency Management Agency (FEMA) initiated the Integrated Public Alert and Warning System (IPAWS) with the goal of integrating the nation's Emergency Alert System (EAS) and other public-alerting systems into a comprehensive system. In 2009, the Government Accountability Office (GAO) reported on long-standing weaknesses with EAS and FEMA's limited progress in implementing IPAWS. Subsequently, FEMA and the FCC conducted the first-ever nationwide EAS test in November 2011. This book examines recent efforts to implement IPAWS and improve EAS; how IPAWS capabilities have changed since 2009 and what barriers, if any, affect its implementation; and the results of the nationwide EAS test and federal efforts to address identified weaknesses are discussed.

Knowledge Management and Communication in the Information Age
Rafiqul Islam (Dalhousie University, Canada)
In series: Media and Communications - Technologies, Policies and Challenges
Hardcover: 978-1-62808-250-0. $150.00.
The information age came with the promise of transparency greater than anything witnessed heretofore by humanity. Of course, transparency is the essence of foresight and knowledge. The hope was for a greater accountability that would follow increased transparency, compelling policy makers to depend on knowledge and foresight rather than disinformation and hidden agendas. Recent events of the new millennium indicate that the increase has been in opacity and disinformation. The information age, often dubbed as the ‘knowledge era’, has become the antithesis of knowledge, however, even its most ardent proponents admit that. Despite globalization, the information age has failed to generate knowledge-based decision-making tools. The failures of the information age to generate knowledge and remove or attenuate much of the basis of international conflicts are symptomatic of a deeper illness. Science has become the captive of the ‘New Science’ that focuses on short-term, tangible, and status-quo, and doesn’t even allow the real science to face in a direction that would allow the knowledge-model to launch. This science is incompatible with nature, even in competition with nature, and is not even facing the same direction as the science that is needed to increase knowledge — the only process on which rational hopes of discovering the truth may be placed. Consequently, all the promises of the information age have been failing spectacularly. Today, we have medicines that don’t cure, an economy that doesn’t economize, education systems that don’t educate, purification techniques that do not purify, and justice systems that award plaintiffs or deliver discriminatory treatment of an accused depending on ethnic origin, religious belief, or skin colour. Today, we do collect data at an unprecedented rate, and, yet, we do not process a single set of data with any technique that is truly natural. Today, in the name of simulation, airplanes do not emulate how birds fly, computers do not emulate how the brain computes, cameras do not emulate how the human visual cortex captures and fixes an image, electricity disdains to emulate lightning (insufficiently continuous) or the electric eel (too dependent on the material properties of the receiving medium), commercial ships forgo natural sources of locomotion like wind, and submarines do not emulate how fish navigate beneath the water’s surface. If nature is the truth, our New Science must be falsehood.

Social Networking: Recent Trends, Emerging Issues and Future Outlook
Xin Ming Tu, Ann Marie White and Naiji Lu
(University of Rochester, NY, USA)
In series: Media and Communications - Technologies, Policies and Challenges
In series: Computer Networks
Hardcover: 978-1-62808-529-7. $150.00.
e-book: 978-1-62808-534-1. $150.00.
Social networking focuses on social relationships (e.g., friendships) diagrammed as nodes (points) and links (ties or edges between points). Social network analysis (SNA) examines features of such relationships within a social networking system, including how such social interactions change over time. SNA can measure and map “connectedness” or “flow” (e.g., information, resources, etc.) within and across individuals, groups, and organizations. SNA can examine these ties in virtual- or geo-temporal spaces — yielding rich mixed methods possibilities and wide application to a host of scientific phenomena. The advent of social media established a cultural meme that carries social network concepts to broader public audiences, and that reinforces SNA’s path to be a powerful interdisciplinary approach. Google Ngram viewer shows the use of “social network analysis” in the corpus of books burgeoned in the late 1960s, and has continued to grow exponentially since the 1990s. The conceptual and methodological reach now extends both widely — across scientific disciplines — and deeply — as field advances arise with the rapid pace of new inquiries. Facing this tremendous promulgation and diversification of SNA, this book distills essential frontiers across fields. Introducing emerging issues in the application of social network theory and SNA, and how these can or will be addressed, each chapter illuminates new trends or applications of a social network approach that can have wide potential impact in other disciplines. Conceptual advances (e.g., applying the concepts of social networks such as peer influence on disease management and treatment adherence), as well as novel analytic approaches for studying properties of social networks are highlighted.

Video Programming and the Distribution Marketplace: Competition, Developments, and Analyses
Jennifer Mack and Carl T. Swanson
In series: Media and Communications - Technologies, Policies and Challenges
2013. 222 pp.
Hardcover: 978-1-62948-163-0. $195.00.
Video provided through subscription video services, such as cable and satellite television, is a central source of news and entertainment for the majority of U.S. households. Technological advances have ushered in a wave of new products and services, bringing online distribution of video to consumers. Federal laws and regulations have sought to foster competition in the video programming and distribution marketplace, but many such laws were adopted prior to the emergence of these advances. This book examines (1) how competition has changed since 2005; (2) the increased choices that consumers have in acquiring video programming and content; and (3) stakeholders’ views on how the government’s regulations, reports, and other activities have kept pace with changes in the industry.
MIDDLE EAST

Economic and Social Issues in the Middle East and North African Countries
Nilgün Cil Yavuz (Istanbul University, Faculty of Economics, Department of Econometrics, Beyazıt, Faith, Istanbul, Turkey)
In series: Politics and Economics of the Middle East
In series: African Political, Economic, and Security Issues
Hardcover: 978-1-62948-152-4. $150.00.
The Middle East and North Africa (MENA) countries have witnessed important complex economic, social and political changes and transition recently. These changes resulted from not only social and political reasons called “the Arab Spring” but also economic reasons from the global economic crisis. External and internal dynamics of the MENA region force governments into an important transformation in terms of better democratic mechanisms, better governance and better social, political and economic environment. It is vital for the MENA region to establish a modern and world class social, political and economic structure in order to increase sustainable improvements of the welfare of the society as soon as possible. MENA economies have a great degree of heterogeneity across countries. The main source of economic growth is natural resources especially oil, natural gas and primary goods for many MENA economies. For this reason, the fluctuations in energy prices in the global economy deeply affect the economic performance and macroeconomic indicators of these economies. Therefore, MENA economies are exposed to macroeconomic vulnerability in the case of internal and external economic and political shocks because of their structural economic problems, low productivity and also global competitiveness level and foreign dependency in intermediate goods and finance. In this perspective, the main aim of this book is to shed light on the main economic, social and political problems and characteristics of MENA economies by considering the latest in the global and regional turmoil.

Israel: Background, Issues and U.S. Relations
Rafael Aronstam
In series: Politics and Economics of the Middle East
e-book: 978-1-62808-656-0. $195.00.
Since Israel’s founding in 1948, successive U.S. Presidents and many Members of Congress have demonstrated a commitment to Israel’s security and to maintaining close U.S.-Israel defense, diplomatic, and economic cooperation. U.S. and Israeli leaders have developed close relations based on common perceptions of shared democratic values and religious affinities. U.S. policymakers often seek to determine how regional events and U.S. policy choices may affect Israel’s security, and Congress provides active oversight of executive branch dealings with Israel and the broader Middle East. Israel is a leading recipient of U.S. foreign aid and is a frequent purchaser of major U.S. weapons systems. The United States and Israel maintain close security cooperation—predicated on a U.S. commitment to maintain Israel’s “qualitative military edge” over other countries in its region. The two countries signed a free trade agreement in 1985, and the United States is Israel’s largest trading partner. Israel has many regional security concerns. Israeli leaders calling for urgent international action against Iran’s nuclear program hint at the possibility of a unilateral military strike against Iran’s nuclear facilities. In addition to concerns over Iran, Israel’s perceptions of security around its borders have changed since early 2011 as several surrounding Arab countries—including Egypt and Syria—have experienced political upheaval. Israel has shown particular concern about threats from Hezbollah and other non-state groups in ungoverned or minimally governed areas in Syria, Lebanon, and Egypt’s Sinai Peninsula, as well as from Hamas and other Palestinian militants in the Gaza Strip. Israel’s political impasse with the Palestinians on core issues in their longstanding conflict shows little or no sign of abating. Since the end of the 1967 Arab-Israeli War, Israel has militarily occupied and administered the West Bank, with the Palestinian Authority exercising limited selfrule in some areas since 1995. This book provides current background and historical perspective on Israel and its U.S. relations.

Oman: Conditions, Issues and U.S. Relations
Sebastian Haas
In series: Politics and Economics of the Middle East
Softcover: 978-1-62948-086-2. $52.00.
Prior to the wave of Middle East unrest that began in 2011, the United States had consistently praised the Sultan of Oman, Qaboos bin Sa’id Al Said, for gradually opening the political process without evident public pressure to do so. The liberalization has, to date, allowed Omanis a measure of representation but has not significantly limited Qaboos’ role as paramount decision-maker. The modest reforms have not satisfied some Omani civil society leaders, youths, and others, and this disappointment produced protests in several Omani cities in 2011. The domestic popularity of Qaboos, some additional economic and political reform measures, and repression of protest actions, caused the unrest to subside in 2012. High turnout in the October 15, 2011, elections for the lower house of Oman’s legislative body suggested that unrest—and the accelerated reforms launched in response—producing a new public sense of activism, although with public recognition that reform will continue to be gradual. The first-ever municipal elections in Oman on December 22, 2012 furthered the sense of political empowerment among the electorate. This book examines current conditions, issues and U.S. relations with the country of Oman with a focus on human rights; international religious freedom; investment climate; and a country profile.

The Middle East and North Africa: U.S. and European Response to Change
Mehdi Vermeirsch
In series: Politics and Economics of the Middle East
2013. 188 pp.
Hardcover: 978-1-62808-919-6. $110.00.
Over the last two years, many U.S. policymakers, Members of Congress, and their European counterparts have struggled with how best to respond to the wide range of challenges posed by the popular uprisings and political upheaval in many countries in the Middle East and North Africa (MENA). Almost immediately after the onset of the so-called “Arab Spring” in early 2011, U.S. and European leaders alike declared their intention to put greater emphasis than in the past on democratic reform and economic development in formulating their respective policies toward countries such as Egypt, Tunisia, Jordan, and Morocco. In Libya, the United States and many European allies participated in the NATO-led military intervention in support of rebel forces that ultimately toppled the Qaddafi regime. And as demonstrations in Syria escalated into a bloody civil war, the United States and the European Union (EU) have imposed sanctions, called for an end to the ruling Asad regime, and are considering greater material and financial support to the Syrian political and armed opposition. Possibilities for U.S.-European Cooperation and Potential Obstacles In light of the immense changes and what many have long viewed as common U.S. and European interests in the Middle East and North Africa, numerous analysts have advocated for significant U.S.-
European cooperation to promote a more peaceful and prosperous MENA region. Such collaboration, they argued, would help prevent a wasteful duplication of Western diplomatic and economic resources amid competing domestic political priorities and financial constraints on both sides of the Atlantic. This book provides a broad overview of European and U.S. responses to the changes in six MENA countries (Egypt, Tunisia, Jordan, Morocco, Libya, and Syria).

**Turkey: Conditions, Issues and U.S. Relations**

*Salma A. Bollaert*

In series: *Politics and Economics of the Middle East* 2013. 191 pp.

Hardcover: 978-1-62808-911-0. $110.00.

Several Turkish domestic and foreign policy issues have significant relevance for U.S. interests, and Congress plays an active role in shaping and overseeing U.S. relations with Turkey. This book provides background information on Turkey and discusses possible policy options for Members of Congress and the Obama Administration. U.S. relations with Turkey—a longtime North Atlantic Treaty Organization (NATO) ally—have evolved over time. Turkey’s economic dynamism and geopolitical importance — it straddles Europe, the Middle East, and Central Asia and now has the world’s 17th-largest economy — have increased its influence regionally and globally. Although Turkey still depends on the United States and other NATO allies for political and strategic support, its growing economic diversification and military self-reliance allows Turkey to exercise greater leverage with the West. These trends have helped fuel continuing Turkish political transformation led in the past decade by Prime Minister Recep Tayyip Erdogan and the Justice and Development Party (AKP), which has Islamist roots. Tens of thousands of mostly middle-class Turks joined protests in June 2013 to express dismay at what they assert to be an increasingly authoritarian leadership style from Erdogan. The protests and the government’s response have raised questions for U.S. policymakers about Turkey’s domestic political trajectory and economic stability. It has also raised questions about the extent and nature of Turkey’s regional influence. Future domestic political developments may determine the extent to which Turkey reconciles majoritarian views favoring Turkish nationalism and Sunni Muslim values with protection of individual freedoms, minority rights (including those of Turkey’s ethnic Kurdish population), rule of law, and the principle of secular governance.

**Yemen and the Challenge of Al-Qaeda in the Arabian Peninsula**

*Curtis Benton and Charles G. Attwater*

In series: *Politics and Economics of the Middle East* 2013. 119 pp.

Hardcover: 978-1-62948-293-4. $110.00.

Yemen’s “Arab Spring” uprising paralyzed that country’s government and shattered its military into hostile factions for over a year beginning in early 2011. This prolonged crisis prevented Yemen’s government, under President Ali Abdullah Saleh, from doing much more than attempting to survive. Saleh used those military units that remained loyal to him for regime protection against anti-government demonstrators and troops who defected to those demonstrators. The uprising subsequently led to a security vacuum that helped allow Al-Qaeda in the Arabian Peninsula (AQAP) and its insurgent force, Ansar al-Shariah, to expand their activities beyond terrorism due to the government’s preoccupation with the Arab Spring. Although AQAP and the Arab Spring demonstrators felt no kinship towards each other, AQAP was more than willing to take advantage of the disorder produced by the uprising. In this new security environment, the militants were able to seize and hold significant amounts of territory in southern Yemen. This book provides an overview and analysis of U.S.-Yemeni relations amidst evolving political change in Yemeni leadership; ongoing U.S. counterterrorism operations against Al Qaeda in the Arabian Peninsula operatives at large in Yemen’s hinterlands; and international efforts to bolster the country’s stability despite an array of daunting socio-economic problems.

**MILITARY**

**Alternative Fuel Use by the Department of Defense: Initiatives and Opportunities**

*Rasmus Klavan*


e-book: 978-1-62808-234-0. $195.00.

This book provides background information and identifies issues for Congress regarding Department of Defense (DOD) alternative fuel initiatives, an issue of considerable attention during hearings in 2012 on DOD’s FY2013 budget. Ongoing alternative fuel efforts of the DOD and the military services include purchases of alternative fuels for testing and evaluation, as well as the certification of alternative fuels for use in service fleets. In addition, the Navy, in coordination with the Department of Energy and the Department of Agriculture, intends to spur domestic advanced biofuel production at a commercial scale using the authority of the Defense Production Act. The services (Army, Navy, and Air Force) have spent approximately $48 million on alternative fuels, and the Navy has proposed a $170 million investment in biofuel production capacity. An overview of the DOD’s alternative fuels policy and data on DOD’s alternative fuels purchase to date, as well as the status of testing platforms on alternative fuel blends and the certification of those blends for fleet-wide use within the services is also discussed.

**Civil Reserve Air Fleet: Background and Analyses**

*Soren M. Jonsson*


Hardcover: 978-1-62808-782-6. $110.00.

This book provides background and analyses on the Civil Reserve Air Fleet (CRAF) which was created by executive order in 1951. As a result, the Departments of Commerce (DOC) and Defense (DOD) formulated a contingency plan to meet the nation's airlift needs in times of crisis. When the Department of Transportation (DOT) was created, it assumed DOC’s role in the CRAF program, and today, DOD and DOT work together to manage the CRAF program. The CRAF supports DOD airlift requirements in emergencies when the need for airlift exceeds the capability of the military aircraft fleet. All CRAF participants must be U.S. carriers fully certified by the Federal Aviation Administration, and meet the stringent standards of Federal Aviation Regulations pertaining to commercial airlines. The CRAF has three main segments: international, national, and aeromedical. The international segment is further divided into the long-range and short-range sections and the national segment into the domestic and Alaskan sections. Assignment of aircraft to a segment depends on the nature of the requirement and the performance characteristics needed.

**Congressional Medal of Honor: History and Recipients, 1979-2013**

*Jonah T. Geary and Jeffrey Hanson*


Softcover: 978-1-62948-289-7. $52.00.
The Medal of Honor (MoH) is the highest award for bravery that can be given to any individual in the United States of America. Conceived in the early 1860’s and first presented in 1863, the medal has a colorful and inspiring history which has culminated in the standards applied today for awarding this respected honor. In their provisions for judging whether a man is entitled to the Medal of Honor, each of the armed services has set up regulations which permit no margin of doubt or error. The deed of the person must be proved by incontestable evidence of at least two eyewitnesses; it must be so outstanding that it clearly distinguishes his gallantry beyond the call of duty from lesser forms of bravery; it must involve the risk of his life; and it must be the type of deed which, if he had not done it, would not subject him to any justified criticism. A recommendation for the Army or Air Force Medal must be within 2 years of the date of the deed upon which it depends. Award of the medal must be made within 3 years after the date of the deed. The recommendation for a Navy Medal of Honor must be made within 3 years and awarded within 5 years. This book describes the history of the MoH and the criteria and rules used in awarding the medal; the benefits that are made available to Medal of Honor recipients; and the process involved in reconsidering an individual for receipt of the medal.

**Drone Strikes: Effectiveness, Consequences and Unmanned Aerial Systems Background**

_Erik Rudaski_

In series: _Military and Veteran Issues_


Softcover: 978-1-63117-542-8. $52.00.
e-book: 978-1-63117-543-5. $52.00.

The United States increasingly relies on unmanned aerial vehicles, better known as drones, to target insurgent and terrorist groups around the world. Drones have a number of advantages that could fundamentally alter how the United States engages in counterinsurgency and counterterrorism operations. Unmanned aerial systems comprise a rapidly growing portion of the military budget, and have been a long-term interest of Congress. At times, Congress has encouraged the development of such systems; in other instances, it has attempted to rein in or better organize the Department of Defense’s efforts. This book discusses the effectiveness of drone strikes in counterinsurgency and counterterrorism campaigns; and focuses on the military uses of UAS.

**Military Medical Care and Veterans Health Care: Questions and Answers**

_Adam Seward_

In series: _Military and Veteran Issues_


Softcover: 978-1-63117-531-2. $52.00.

The primary objective of the military health system, which includes the Defense Department’s hospitals, clinics, and medical personnel, is to maintain the health of military personnel so they can carry out their military missions and to be prepared to deliver health care during wartime. The military health system also covers dependents of active duty personnel, military retirees and their dependents, including some members of the reserve components. This book answers several frequently asked questions about military health care, and provides responses to frequently asked questions about health care provided to veterans through the Veterans Health Administration.

**Military Parents and Child Custody: Issues, Considerations, and Cases**

_Rayan M. Paauwels_

In series: _Military and Veteran Issues_

In series: _Children’s Issues, Laws and Programs_


Hardcover: 978-1-62808-932-5. $110.00.

The increased deployment of service members beginning in 2001 as a result of Operations Enduring and Iraqi Freedom has raised difficult military child custody issues that in some cases potentially affect the welfare of military children as well as servicemembers’ ability to effectively serve their country. Approximately 142,000 members of the Armed Forces (active, Guard, and Reserve) are single custodians of minor children. Temporary duty assignments, mobilization, and deployments to areas that do not allow the military member’s dependents to accompany them require the servicemember to have contingency plans providing for the care and well-being of their dependents. A recommendation for the Army or Air Force Medal of Honor must be made within 3 years and awarded within 5 years. This book describes the history of the MoH and the criteria and rules used in awarding the medal; the benefits that are made available to Medal of Honor recipients; and the process involved in reconsidering an individual for receipt of the medal.

**Next Generation Military Capabilities: Recommendations for Technology Investment**

_Travis Beech_

In series: _Military and Veteran Issues_


Hardcover: 978-1-62948-867-7. $110.00.

In March 2012, the Under Secretary of Defense for Acquisition, Technology, and Logistics requested that the Defense Science Board develop recommendations for technology investments that would enable the Department of Defense to maintain capability superiority in 2030. The Board assembled a study composed of national leaders in science and technology who explored required capabilities, global technology, and the principles of experimentation. This book recommends some specific investments for the Department that are focused on high-leverage technologies that the study judges are not adequately pursued today. The book also discusses priorities for the 21st century defense in sustaining United States global leadership.

**Professional Military Education: Analysis and Recommendations**

_Michelle P. Jacobs_

In series: _Military and Veteran Issues_


Hardcover: 978-1-62948-814-1. $195.00.

This book examines officer in-residence professional military education (PME) as a critical investment in the most important element of our military – people. The primary purpose of PME is to develop military officers, throughout their careers, for the rigorous intellectual demands of complex contingencies and major conflicts. The authors discuss professional military education two decades after the Goldwater-Nichols Act and the Skelton Panel and provide statements from important hearings on continued engagement.

**Rising Costs of Military Health Care and Approaches to Reducing Them**

_Alesia Floyd_

In series: _Military and Veteran Issues_


Softcover: 978-1-63117-494-0. $52.00.

In 2012, the Department of Defense (DoD) spent $52 billion on health care for service members, retirees, and their families. The department...
offers health care to nearly 10 million people through its TRICARE program, an integrated system of military health care providers and regional networks of civilian providers. Established in 1993, TRICARE now consists of three major plans: TRICARE Prime, TRICARE Standard, and TRICARE Extra. The cost of providing this care has increased rapidly as a share of the defense budget over the past decade, outpacing growth in the economy; growth in per capita health care spending in the United States, and growth in funding for DoD’s base budget. This book focuses on the approaches that can be taken to reduce federal spending on military care, and continues to provide information on management practices available to help achieve efficiencies within the military health system.

Sexual Assault in the Military: Analysis, Response, and Resources

Shawn Woodham
In series: Military and Veteran Issues
This book examines how the Department of Defense and its Armed Services—the Army, Navy, Marine Corps, and Air Force (the Services) respond to Service members who report having been sexually assaulted and how it investigates and disciplines Service members accused of perpetrating sexual assault. This book also reviews how the military educates Service members and trains military criminal investigators and military lawyers about sexual assault offenses. The topic is both relevant and timely, as Congress is currently considering ways to address this issue.

Treatment of War Wound of Extremities
Predrag Grubor (University Medical School Banja Luka, Bosnia)
In series: Military and Veteran Issues
2014.
Hardcover: 978-1-63117-454-4. $110.00.
Firearms injuries are considered to be a "privilege" of treatment by military surgeons. It is difficult to find one book that includes all of the knowledge about injuries of the locomotor system caused by firearms, and the treatments of these injuries. This book presents the author's experience in treating more than 5,000 wounded people in the last war in Bosnia and Herzegovina. Authentic images of injuries by firearms and the results of treatment are provided for better understanding of the wounds. The key to success in the treatment of these injuries is the primary surgical treatment of wounds. This includes "sterilizing wounds", stabilizing of broken bone with or without bone defect, treatment of nerves, and blood vessels and open joints. As a measure for stabilization of open fractures, an external fixator was used for over 85% in the war in former Yugoslavia. The Author presents in detail his vast experience in treatment of open fractures, peace or war trauma of skin, fat, muscle, bone and open joints. He uses a clear indication of treatment in order to reach complete recovery, or a lesser degree of invalidity. He gives a detailed presentation of when and which methods of treatments should be used to treat bone defects, osteomyelitis, delayed healing, pseudoarthrosis and open joints. The Author shows that he achieves a positive clinical outcome, shorter hospital stay and reduced treatment by using these techniques and methods. This book provides instructions on how to treat the most complex open fractures of the locomotor system as to prevent complications and speed up rehabilitation, which is the most valuable to surgeons and should be available in every hospital, at any time, especially when we have in mind the global fight against terrorism.

U.S. Navy Shipbuilding: Plans, Congressional Concerns, and Quality Issues
Gladys Clemens
In series: Military and Veteran Issues
Hardcover: 978-1-63117-113-0. $135.00.
This book provides background information and presents potential issues for Congress concerning the Navy’s ship force-structure goals and shipbuilding plans. It also discusses, among other issues, quality problems in constructing recently delivered ships and Navy actions to improve quality and key practices employed by leading commercial ship buyers and shipbuilders to ensure quality and how these compared with Navy practices.

Understanding Military Personnel and Returning Veterans: Information for Substance Use Treatment Providers
Aaron D. Goodman
In series: Military and Veteran Issues
2013. 111 pp.
Softcover: 978-1-62808-636-2. $52.00.
The National Association of State Alcohol and Drug Abuse Directors (NASADAD) conducted an environmental scan of the training, outreach, and resources offered by the Single State Agencies (SSAs) in charge of drug and alcohol treatment and prevention services to respond to the needs of returning veterans and their families. This scan was conducted to learn how to more effectively serve returning veterans and family members impacted by substance use disorders (SUDs). To accomplish this, NASADAD conducted case studies of nine states that had been identified as having the largest number of initiatives for returning veterans. This book examines the data for these case studies which were gleaned from 36 interviews with SSA staff and staff from publicly funded SUD treatment facilities. NASADAD staff gathered data on state policies, trainings, and outreach efforts, as well as recommendations for future development of technical assistance and training materials to address the gaps in services.
MUSIC

Music: Social Impacts, Health Benefits and Perspectives
Peti Simon and Tamas Szabo
In series: Fine Arts, Music and Literature
2013. 300 pp.
Hardcover: 978-1-62808-144-2. $150.00.
In this book, the authors present current research in the study of the societal impacts, health benefits and new perspectives on music. Topics discussed include the role of musical leisure activities in dementia care; listening to music as a noninvasive pain intervention; evidence-based music for human health; the role of musical stimuli in dopaminergic brain function; music and cognitive processing of emotions; music therapy and an analysis of music pedagogy, the professional musician, and the music business; music education and transfer of learning; perspectives on music as a lifelong resource of happiness; Sakara music and its relation to life issues in Nigeria; health benefits for the mother and child from music intervention in pregnancy; music as a political force in Islamist organizations; the benefits of music on health and athletic performance; and songwriting and improvisation in acute psychiatry.

Pre-1972 Sound Recordings: Copyright Protection, Preservation, and Policy Considerations
Eli A. Baughman
In series: Music Rights, Laws, Distribution and Royalties
Hardcover: 978-1-62808-320-0. $195.00.
The body of pre-1972 sound recordings is vast. Commercially released "popular" recordings come most readily to mind - from Frank Sinatra and Ella Fitzgerald to the Beatles and the Rolling Stones. But pre-1972 commercial recordings encompass a wide range of genres: ragtime and jazz, rhythm and blues, gospel, country and folk music, classical recordings, spoken word recordings and many others. Some remain popular; others have long since faded from memory and are of interest only to scholars. There are, in addition, many unpublished recordings such as journalists' tape, oral histories, and ethnographic and folklore recordings. There are also recordings of old radio broadcasts, which were publicly disseminated by virtue of the broadcast, but in many cases are technically unpublished under the standards of the U.S. Copyright Act. These recordings are a rich aspect of this country's cultural heritage, and it is important to ensure that they will be preserved and accessible for researchers and scholars, as well as to future generations. This book provides an overview of the Copyright Office's research and public outreach concerning the legal treatment of pre-1972 sound recordings. It explains the process by which the Office undertook its research; describes the comments received as well as the views expressed at the public meetings; and explains the Office's recommendations and the reasons for them.

Sex and the Singer: Women in Fedor Chaliapin's Life
Joseph Darasky
In series: Lives and Times of Distinguished Artists
Softcover: 978-1-62948-448-8. $52.00.
The most famous Russian Opera Star of the 20th Century Fedor Chaliapin, as stated by some memoirists, was known in Europe as a womanizer, while this subject in Russia, including the Soviet period, was taboo. There was a lot of rumors and gossip about Chaliapin's two marriages, about his love affairs and his illegitimate children, but not a single written word describing those occurrences was attainable. With the beginning of Gorbachev's perestroika, some light on the "forbidden fruit" was finally shed. Sadly, in almost all modern Russian publications on this topic, there are still a lot of misstatements about Chaliapin’s two marriages and his love affairs, but till today, not a single book (with the exception of one quite controversial work dedicated mostly to Chaliapin and his first wife) describing those occurrences was ever written. Almost a quarter of a century has passed since the day of the first publication on this subject and it is believed that the time is now ripe to make an attempt to tell the true story of the love life of Fedor Chaliapin in this book. Some of the collected facts were retrieved from the published sources disseminated throughout the literature; others were found in archives and on the Internet. The purpose of my book is not only to present the true story of Chaliapin’s love life, but also to show his evolving attitude toward women he loved, to reveal the influence of Chaliapin’s female partners on the operatic achievements during his young years and finally, to discredit many erroneous statements about Chaliapin’s sexual adventures that can be found in a number of publications.

NATURAL DISASTERS

Earthquakes: Risk Factors, Seismic Effects and Economic Consequences
Albert P. Quinn
In series: Natural Disaster Research, Prediction and Mitigation
2014.
Hardcover: 978-1-63117-517-6. $120.00.
e-book: 978-1-63117-518-3. $120.00.
An earthquake is a natural disaster that causes damage worldwide. Not only earthquakes of high magnitude, but also those of small magnitude that strike unprepared regions can cause economic and social consequences, and many casualties. Unlike other natural disasters, the exact time of an earthquake cannot be estimated; scientists can only predict the timeline and magnitude based on the history of earthquakes in a region. Even though current technology cannot predict the precise time, location or magnitude, public awareness about the estimations allows both individuals and government to be ready for their devastating effects. This book begins by discussing how public awareness about the effects of earthquakes and how to prepare for a possible earthquake which can potentially save lives. The book then continues with topics that include seismic PRA; seismic safety assessments of existing buildings; psychiatric reactions of individuals to earthquakes; possible relation between an intense earthquake and the voltage signal generated by atmospheric ionic currents and/or sudden change of the electric field in the air; and others.

The National Flood Insurance Program: Challenges and Reforms
Cameron O'Kelly
In series: Natural Disaster Research, Prediction and Mitigation
In series: Economic Issues, Problems and Perspectives
Softcover: 978-1-62808-852-6. $52.00.
In late October 2012, Hurricane Sandy caused widespread flood-related property damage in coastal areas of states throughout the Northeast and the mid-Atlantic region. The storm exposed vulnerabilities in the region’s public transportation and infrastructure and underscored the nation’s growing exposure to extreme weather events, sea-level rise, and coastal flooding. Although the full economic cost of Sandy will not be known for years, the storm has resulted in substantial federal
disaster recovery assistance, including tens of billions for flood and hurricane protection and coastal restoration, and the rebuilding of mass transit systems and housing. Government payouts under the National Flood Insurance Program (NFIP) are estimated to be between $12 billion and $15 billion in flood insurance claims. In the immediate aftermath of Sandy, this amount quickly exceeded the $4 billion in cash and remaining borrowing authority from the Treasury Department. By January 2013, the NFIP had processed more than 140,000 claims for Sandy-related damages totaling about $1.7 billion. To protect the financial integrity of the NFIP and ensure that the NFIP has the financial resources to cover its existing commitments following the devastation caused by Sandy, the Obama Administration requested that Congress pass legislation to increase the NFIP’s borrowing authority. On January 4, 2013, Congress passed, and the President two days later signed into law, H.R. 41 to provide a $9.7 billion increase in the NFIP’s borrowing authority, from $20.725 billion to $30.425 billion, to pay flood claims related to Hurricane Sandy. This book provides an analysis of flood risk management, summarizes major challenges facing the NFIP, and outlines key reforms enacted in the Flood Insurance Reform Act of 2012. The report identifies and presents some key remaining flood management issues for congressional consideration, and concludes with a discussion of policy options for the future financial management of flood hazards in the United States.

**NUCLEAR MATERIALS & DISASTER RESEARCH**

**Protection of Radioactive Material: Nuclear Regulatory Commission Rule 10 C.F.R. 37**

*Elijah B. Evans and Wyatt C. Johnson*

In series: *Nuclear Materials and Disaster Research* 2013. 280 pp.

Hardcover: 978-1-62808-563-1. $195.00.


This book analyzes 10 C.F.R. 37, a new rule promulgated by the Nuclear Regulatory Commission (NRC) to protect radioactive material. "Byproduct material" includes specified types of radioactive material other than uranium or plutonium. The rule regulates byproduct material of types and in quantities that could be used to make a "dirty bomb." Congress attaches great importance to protecting the United States against terrorist threats and this rule will affect the many industrial, research, and medical activities nationwide that use radioactive materials, thereby affecting many constituents and raising cost-benefit issues. There is wide concern also about regulation and radiation.

**Remediation of Lands After the Fukushima Daiichi Accident**

*Helen G. Turner*

In series: *Nuclear Materials and Disaster Research* 2014. 191 pp.

Hardcover: 978-1-62948-846-2. $110.00.


The Fukushima Nuclear Power Station Accident in March 2011 significantly impacted Japan and the Japanese People, contaminating large areas of Fukushima Prefecture with radiation. Japan’s nuclear incident has engendered much public and congressional concern about the possible impact of radiation on the Japanese public, as well as possible fallout on U.S. citizens. This book provides observation and commentary on remediation of the lands off-site from the Fukushima Daiichi reactors, and information on technical aspects of the nuclear incident, with reference to human health.

**World Uranium Resources: The Supply and Demand Balance**

*Joel A. Saucedo*

In series: *Energy Science, Engineering and Technology* In series: *Nuclear Materials and Disaster Research* 2013. 150 pp.

Softcover: 978-1-62948-457-0. $52.00.


The U.S. Department of Energy, Energy Information Administration (EIA) joined with the U.S. Department of the Interior, U.S. Geological Survey (USGS) to analyze the world uranium supply and demand balance. To evaluate short-term primary supply (0–15 years), the analysis focused on Reasonably Assured Resources (RAR), which are resources projected with a high degree of geologic assurance and considered to be economically feasible. Such resources include uranium resources from mines currently in production as well as resources that are in the stages of feasibility or of being permitted. Sources of secondary supply for uranium, such as stockpiles and reprocessed fuel, were also examined. To evaluate long-term primary supply, estimates of uranium from unconventional and from undiscovered resources were analyzed. At 2010 rates of consumption, uranium resources identified in operating or developing mines would fuel the world nuclear fleet for about 30 years. However, projections currently predict an increase in uranium requirements tied to expansion of nuclear energy worldwide. This book presents critical analyses of world uranium resources with a focus on identified resources, production capacity and long-term demand and supply projections.

**OIL**

**Oil and Chemical Spills: Federal Emergency Response Framework and Related Legal Authorities**

*Natalie Chrisman*

In series: *Petroleum Science and Technology* 2014. 185 pp.

Hardcover: 978-1-62948-840-0. $110.00.


Thousands of oil and chemical spills of varying size occur in the United States each year. State and local officials located in proximity to these incidents generally are the first responders and may elevate an incident for federal attention if greater resources are desired. The National Oil and Hazardous Substances Pollution Contingency Plan, often referred to as the National Contingency Plan (NCP), establishes the procedures for the federal response to oil and chemical spills. This book focuses on the federal emergency response framework of oil and chemical spills; provides a summary of the laws in the Clean Water Act; gives a summary of superfund cleanup authorities and related provisions act; discusses the background and governance of oil spills in United States coastal waters; and finally, provides incite on the liability of responsible parties in the Oil Pollution Act of 1990.

**PEDIATRICS**

**Adolescence and Sexuality: International Perspectives**

*Joav Merrick, Ariel Tenenbaum and Hatim A. Omar*

(Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)

In series: *Pediatrics, Child and Adolescent Health*
The usefulness of having positive youth development subjects designed for university students.

In this book, several papers reporting evaluation findings for the second piloting exercise are included. Because there are few validated positive youth development programs in the Chinese context, it is our modest wish that the accumulated evidence can give us some insights about the usefulness of having positive youth development subjects designed for university students.
After the historiographic revolution in science studies of the 1960’s, philosophers began to envision science as a product of historical and sociological forces and not as the result of the “scientific method.” While the importance of experimentation is recognized in recent science studies, the full significance for its role in scientific practice generally remains overlooked. Therefore, attempts to reconstruct narratives of scientific practice are often incomplete. In this book, the author proposes onto-epistemological roles for experimentation in terms of an empirical methodology, for analyzing experiments in scientific practice. These case studies provide a tangible framework for engaging in a series of philosophical reflections on the onto-epistemological roles of experimentation for an empirical methodology. From the analysis of the reconstruction of this historical narrative, the author identifies several characteristics of experimentation—controllability, reproducibility, plasticity, and fecundity—that are important for understanding how scientific practice leads to the discovery of novel entities within the natural world and ultimately to the growth of scientific knowledge and scientific progress. In addition, the notion of horizon for scientific practice, representing particularly the experimental and theoretical limits within which scientists ply their trade, is introduced to facilitate the analysis of scientific discovery. And the notion of progressive horizon, in which the practice of scientists intersects dynamically with “the way nature is,” is also introduced to analyze scientific progress. That mediation represents a “tampering” with the natural world, in which the measure of a natural phenomenon is taken through experimental activity.

**POLITICAL SCIENCE**

**Federal Records Management: Elements and Issues**  
*Andrew Bae and Lon Pastuch*  
In series: *Government Procedures and Operations*  
Hardcover: 978-1-62948-301-6. $135.00.  
All federal departments and agencies create federal records “in connection with the transaction of public business.” The Federal Records Act requires executive branch departments and agencies to collect, retain, and preserve federal records, which provide the Administration, Congress, and the public with a history of public policy execution and its results. Increasing use of e-mail, social media, and other electronic media has prompted a proliferation of record creation in the federal government. The variety of electronic platforms used to create federal records, however, may complicate the technologies needed to capture and retain them. It is also unclear whether the devices and applications that agencies currently use to create and retain records will be viable in perpetuity—making access to federal records over time increasingly complicated, costly, and potentially impossible. In recent years, the Government Accountability Office (GAO) and the National Archives and Records Administration (NARA) reported records management deficiencies at federal agencies. NARA, which has government-wide records management responsibilities, found 45% of agencies were at high risk of mismanaging their records. Agencies’ inability to comply with federal record-keeping laws and responsibilities may make it difficult for NARA to predict future federal archiving needs because officials may not anticipate the true volume of records, nor will they know the variety of platforms used to create those records. This book provides an overview of the process of retaining and preserving federal records in a digital environment; and the challenges of managing electronic records.

**Supply Chain Security: Cargo Container and Federal Information Technology Procurement Risks**  
*Marten Laurits*  
In series: *American Political, Economic, and Security Issues*  
2013. 88 pp.  
Sofcover: 978-1-62808-230-2. $52.00.  
The U.S. economy is dependent on the expeditious flow of millions of tons of cargo each day. Cargo containers are an important instrument of global trade but also can present security concerns. U.S. Customs and Border Protection (CBP), within the Department of Homeland Security (DHS), is responsible for administering container security programs, and its strategy for securing maritime cargo containers includes analyzing information to identify shipments that may contain terrorist weapons or other contraband. Because CBP has insufficient resources to examine every container, targeters use Automated Targeting Systems (ATS) to profile which container shipments should be examined. This book addresses how ATS supports CBP’s targeting of maritime cargo container shipments for national security purposes; and the extent to which CBP assesses the effectiveness of ATS’s national security targeting rules.

**The Foreign Intelligence Surveillance Act**  
*Makrus Korjus*  
In series: *Intelligence and Counterintelligence Studies*  
2013. 75 pp.  
Sofcover: 978-1-62808-235-7. $52.00.  
e-book: 978-1-62808-236-4. $52.00.  
The current legislative and oversight activity with respect to electronic surveillance under the Foreign Intelligence Surveillance Act (FISA) has drawn national attention to several overarching issues. This book outlines three such issues and touches upon some of the perspectives reflected in the ongoing debate. These issues include the inherent and often dynamic tension between national security and civil liberties, particularly rights of privacy and free speech; the need for the intelligence community to be able to efficiently and effectively collect foreign intelligence information from the communications of foreign persons located outside the United States in a changing, fast-paced, and technologically sophisticated international environment or from United States persons abroad, and the differing approaches suggested to meet this need; and limitations of liability for those electronic communication service providers who furnish aid to the federal government in its foreign intelligence collection. Two constitutional provisions are implicated in this debate - the Fourth and Fifth Amendments.

**PRESIDENCY**

**Barack Obama: The Fulfillment of an American Dream**  
*Thomas E. Carney (Division of Legal, Ethical and Historical Studies, Yale Gordon College of Liberal Arts, University of Baltimore, Baltimore, MD, USA)*  
In series: *First Men, America’s Presidents Series*  
Edited by: *Peterson, Barbara Bennett (Oregon State University)*  
Sofcover: 978-1-62808-082-7. $85.00.  
The 44th U.S. President, Barack Obama, has fulfilled the dream of “inclusiveness” for American society by moving contemporary society closer towards universal equality for all. Dr. Thomas E. Carney has
written a powerful and incisive volume on the life and policies of Obama from his birth in Hawaii in 1961, through his diverse roots in Hawaii and Indonesia, to his education in Jakarta (St. Francis of Assisi) and Honolulu (Punahou), Occidental and Columbia Universities, to his presidency of the prestigious Harvard Law Review in 1990. The challenges Barack Obama faced are traced from his graduation from Harvard Law School in 1991, his first jobs with Business International Corporation and the New York Public Interest Research Group, through his internship with the Chicago law firm of Sidney & Austin where he met future wife Michelle who was his appointed mentor, to his own law position with Davis, Miner, Barnhill & Galland. Obama also worked as a community organizer early in his career seeking justice in voting rights, tenant rights, employment rights, and anti-trust suits. He worked on the Illinois Vote Project in 1992 and became a lecturer at the University of Chicago’s Law School where he taught Constitutional Law. This excellent biography follows Barack Obama through his election from the 13th district in the Illinois State Senate in 1996, his successful campaign to win a U.S. Senate seat from Illinois in 2004, and the winning of the presidency in 2008. All the important policies of President Obama’s election in 2008 and first term are discussed in detail: the economy and government TARP policies; fights against terrorism; the wars in Afghanistan and Iraq; the DREAM issues over immigration; and the DOMA discussions. As the first Africa-American President, this life story of President Barack Obama extending to the end of his first presidential term is a wise and moving story of hard-fought success. Barack Obama’s life offers a strong role model of fine character for Americans young and old.

Change in the White House? Comparing the Presidencies of George W. Bush and Barack Obama
Meena Bose
In series: White House Studies
Hardcover: 978-1-62948-920-9. $150.00.
e-book: 978-1-62948-923-0. $150.00.
In April 2012, Hofstra University hosted a symposium comparing the presidencies of George W. Bush and Barack Obama. In the 2008 presidential campaign, Obama promised major departures from the Bush administration’s approach to political negotiations and policies. But in the White House, several, though certainly not all, of Obama’s actions have suggested more continuity than change with his predecessor. What is the Bush (43) Presidency’s legacy in American politics and the world? How has that legacy shaped the policies of President Obama? This assessment of both presidencies provides a timely discussion of their leadership successes and challenges in the White House, with attention to immediate results as well as long-term effects. This book presents the symposium findings, with updates that incorporate the 2012 elections and the start of Obama’s second term. The first part examines each president’s ability to mobilize public support and exercise political leadership, both within his own political party and more broadly. The second part compares foreign policy in the two administrations, focusing on Iraq, Afghanistan, and the Middle East. Contributors include experts on the American presidency, executive-legislative policy making, and U.S. foreign policy.

John Adams, Founder of the American Political Tradition
Barbara Bennett Peterson (University of Hawaii, USA)
In series: First Men, America’s Presidents Series
Edited by: Peterson, Barbara Bennett (Oregon State University)
Hardcover: 978-1-62948-780-9. $175.00.
This is an excellent full length biography of America’s second president who was the ‘Colossus of Independence’ arguing for the passage of the Declaration of Independence on the floor of the Second Continental Congress. Adams’ venerated political writings established the framework for our nation’s government on the state and federal levels. A fine judge of character, Adams nominated George Washington to lead the Continental Army, negotiated foreign loans to aid the Revolution, gained recognition for America’s independence abroad, and was part of the diplomatic team ending the Revolutionary War with the Treaty of 1783. Chosen as America’s first ambassador to Britain, Adams renewed amicable relations with the former mother country. Through his political writings, Adams influenced the framework for the U.S. Constitution with his earlier state constitution for Massachusetts. Elected as Vice President when George Washington was elected first U.S. President, Adams established the ground rules for the U.S. Senate to operate, prescribing as he did over that august legislative body. He served as Washington’s right hand man and when elected to the presidency himself in 1796 he carried on Washington’s “no entangling alliances” policies and made his own decision to keep the U.S. out of a full-scale war with France during the French Revolution. His Puritan New England background buttressed his sense of morality which he infused into every document he wrote and which dictated his close family relationships especially with his wife Abigail Smith Adams. John Adams was the “thinker” for the revolutionary generation who incorporated all elements of the American political tradition such as republicanism, the separation of powers, the compact theory for government’s creation, the separation of church and state, the need for public education, the necessity for all citizens to enjoy the guarantees outlined later in the Bill of Rights, and the concept that the federal government should rise above the states. The brainpower of John Adams, through his notable documents and treatises, established the American political tradition. This book, covering Adams’ life chapters from birth to death, shows in both public and private life how John Adams was morality triumphant, and was one of the most intelligent of the Founding Fathers.

Millard Fillmore: The Limits of Compromise
Thomas J. Rowland (Department of History, University of Wisconsin-Oshkosh, WI, USA)
In series: First Men, America’s Presidents Series
Edited by: Peterson, Barbara Bennett (Oregon State University)
2013. 207 pp.
Hardcover: 978-1-62808-667-6. $150.00.
e-book: 978-1-62808-672-0. $150.00.
Arguably our most obscure president, and generally judged mediocre at best, Millard Fillmore came to the presidency in July 1850 when his predecessor, Zachary Taylor, unexpectedly died. Despite his relative anonymity, Fillmore was thrust into the nation’s greatest historical argument—the great debate concerning the future of slavery in the republic. With considerable political aplomb, he helped guide the passage of the measures collectively known as the Compromise of 1850, including the sensitive and controversial Fugitive Slave Act. Rather than resolve the agitation, these measures gave way to a decade of rancorous conflict which brought about the Civil War. This interpretive study seeks to understand why this president remained anchored to a past that was no longer effective in his own time.

Presidency in the United States. Volume 5
Gabriel L. Carreiro
In series: Presidency in the United States
2013. 163 pp.
Hardcover: 978-1-62948-354-2. $110.00.
This series gathers and presents original research in the study of the Presidency of the United States. Each article has been carefully selected in an attempt to present substantial topical data across a broad
spectrum. Topics discussed in this compilation include the history, law, practice and recent developments relating to presidential claims of executive privilege; classified information policy and executive order 13526; national security considerations and options during the 2012-2013 presidential election period; and provisions and funding in the Presidential Transaction Act.

Richard M. Nixon: In the Arena, From Valley to Mountaintop

Luke A. Nichter (Texas A&M University-Central Texas, Killeen, Texas, US)

In series: First Men, America’s Presidents Series

Edited by: Peterson, Barbara Bennett (Oregon State University)

2014.

Hardcover: 978-1-63117-546-6. $150.00.

In the twenty years since Richard Nixon’s death, both his achievements and his failures remain hotly contested. His domestic achievements included revenue sharing, the end of the military draft, new anticrime laws, and a broad environmental program. In terms of foreign policy, he opened relations with the People’s Republic of China, signed the Strategic Arms Limitation Treaty with the Soviet Union, and ended the war in Vietnam. For these achievements, he was re-elected in 1972 by one of the largest margins in American history, defeating Democratic candidate George McGovern. In the 20th century, the only comparable victories were Franklin D. Roosevelt in 1936 and Lyndon B. Johnson in 1964. The shadow of Watergate continues to hang over Nixon’s presidency, and is often the first thing most people associate with Richard Nixon. Fairly or unfairly, there remains much to learn about Watergate and Nixon’s presidency due to the large number of records and White House tapes still being opened. In addition, as subsequent presidential scandals have occurred, Watergate fades slightly, although it does not completely disappear. Only gradually have scholars turned their attention to subjects other than Watergate, observing the plea by President Clinton in his eulogy of Nixon that we judge the 37th president on his full record, and not just his shortcomings. As more records from his presidency are opened, he will continue to receive fuller biographical treatment.

U.S. Presidential Leadership at the UN: 1945 to Present

Meena Bose

In series: White House Studies


Hardcover: 978-1-62948-918-6. $150.00.

In October 2010, Hofstra University hosted a symposium evaluating American presidential leadership at the United Nations (UN) from 1945 to the present. Sixty-five years after the creation of this unique international organization in the final months of World War II, an evaluation of its achievements and challenges from the perspective of the American presidency was both timely and necessary. The United States hosts the UN, pays the largest share of its dues, and typically guides its agenda, particularly in matters of international peace and security. The president directs American foreign policy and therefore represents U.S. interests at the UN. How do American presidents work through the UN to achieve their foreign policy goals, and what are the prospects for future cooperation in the 21st century? This book presents the symposium findings. The first part examines how American institutions, namely, the president, Congress, and the executive branch, work with the international organization. The second part evaluates how presidents pursue multilateral policy initiatives through the UN as well as proposals for UN reform that would promote executive interests there more effectively. Contributors include experts on the American presidency, political communication, and international security.

White House Studies Compendium. Volume 8

Anthony J. Eksterowicz and Glenn P. Hastedt

In series: White House Studies


Hardcover: 978-1-62618-603-3. $350.00.

The American presidency has become one of the most powerful offices in the world with the ascendency of American power in the 20th century. ‘White House Studies Compendium’ brings together piercing analyses of the American presidency - dealing with both current issues and historical events. The compendia are the bound issues of ‘White House Studies’ with the addition of a comprehensive subject index.

White House Studies Compendium. Volume 9

Anthony J. Eksterowicz and Glenn P. Hastedt

In series: White House Studies


Hardcover: 978-1-62618-681-1. $350.00.

The American presidency has become one of the most powerful offices in the world with the ascendency of American power in the 20th century. ‘White House Studies Compendium’ brings together piercing analyses of the American presidency - dealing with both current issues and historical events. The compendia are the bound issues of ‘White House Studies’ with the addition of a comprehensive subject index.

White House Studies Compendium. Volume 10

Anthony J. Eksterowicz and Glenn P. Hastedt

In series: White House Studies


The American presidency has become one of the most powerful offices in the world with the ascendency of American power in the 20th century. ‘White House Studies Compendium’ brings together piercing analyses of the American presidency - dealing with both current issues and historical events. The compendia are the bound issues of ‘White House Studies’ with the addition of a comprehensive subject index.

White House Studies Compendium. Volume 11

Thomas Lansford (University of Southern Mississippi)

In series: White House Studies


The American presidency has become one of the most powerful offices in the world with the ascendency of American power in the 20th century. ‘White House Studies Compendium’ brings together piercing analyses of the American presidency - dealing with both current issues and historical events. The compendia are the bound issues of ‘White House Studies’ with the addition of a comprehensive subject index.

White House Studies Compendium. Volume 12

Thomas Lansford (University of Southern Mississippi)

In series: White House Studies


Hardcover: 978-1-63117-032-4. $350.00.
The American presidency has become one of the most powerful offices in the world with the ascendency of American power in the 20th century. “White House Studies Compendium” brings together piercing analyses of the American presidency and deals with both current issues and historical events. This volume pays special attention to comparisons of the presidencies of George W. Bush and Barack Obama.

**PSYCHOLOGY AND PSYCHIATRY**

**Advances in Cognitive and Behavioral Sciences**

*Miao-Kun Sun*

In series: *Psychology Research Progress*


Hardcover: 978-1-62948-890-5. $150.00.

This book brings together interdisciplinary research in cognitive psychology, cognitive impairment and abnormalities, cognitive networks and neurofeedback, neurophysiology, and linguistics. Covered are the latest developments, pinpointing directions for future research on cognitive sciences and theory. Essential reading for those working directly in the cognitive sciences or in related specialist areas, “Advances in Cognitive and Behavioral Sciences” provides an instant overview of current thinking for both experts and newcomers to cognitive sciences.

**Advances in Psychological Research on Health Behavior**

*Changiz Mohiyeddini (Webster University, Vienna, Austria)*

In series: *Psychology Research Progress*

2014.


Written by a distinguished group of international experts, this volume presents a comprehensive summary of the most recent empirical findings on the psychological research on health behavior. It delves into such topics as individual differences in trait rumination and health, an integrated approach to message development and a framework for developing and mobilizing physical activity interventions. Also included is gender related issues in the study of human health and empirical research and a life-span approach for promoting physical activity.

**Advances in the Psychology of Sports and Exercise**

*Changiz Mohiyeddini (University of California Berkeley, CA, USA)*

In series: *Psychology of Emotions, Motivations and Actions*

In series: *Sports and Athletics Preparation, Performance, and Psychology*


Hardcover: 978-1-62618-932-4. $150.00.

Written by an eminent group of international experts this volume presents a comprehensive summary of the most recent advances in the psychology of sport and exercise. The volume is divided into two sections. Section I focuses on conceptual advances and covers role perceptions in sport (Chapter 1) and the link between identity and disability sport (Chapter 2). Chapter 3 provides a comprehensive discussion of personality-trait-like individual differences in athletes. Chapter 4 presents a life-span approach to promote physical activity. The impact of group cohesion on sport and exercise has been summarized in Chapter 5, and Chapter 6 concentrates on the maintenance of physical activity. Section II contains chapters that focus on the link between well-being, sport and exercise (Chapter 7-9). Chapter 10 focuses on the effects of a single wheelchair sports session on cognitions and behavior followed by a comprehensive review of the psychological stress in volleyball (Chapter 11).

**Anxiety Disorders: Risk Factors, Genetic Determinants and Cognitive-Behavioral Treatment**

*Shiloh Angelus Roman*

In series: *Psychology Research Progress*


Anxiety is a basic human emotion that everyone experiences at times. Many people feel anxious, or nervous, when faced with a problem at work, before taking a test, or making an important decision. Anxiety is not typically pathological, but commonly adaptive when it facilitates avoidance of danger. Anxiety disorders, however, are different. They can cause such distress that it interferes with a person's ability to lead a normal life. For people with anxiety disorders, worry and fear are constant and overwhelming. This book examines anxiety in children and the tools and methods used to assess anxiety among young children and adolescents. It also explores the role of genetics in anxiety disorders and the connection between anxiety and temporomandibular disorder.

**Borderline Personality Disorder: Understanding the Unconscious Function of Deliberate Self Harm and Managing the Transference Relationship**

*Amanda Commons Treloar (Alumni of Monash University, School of Psychology, Psychiatry & Psychological Medicine, Victoria, Australia)*

In series: *Psychology of Emotions, Motivations and Actions*


Hardcover: 978-1-63117-076-8. $150.00.

Ideally a resource for clinicians and therapists, this book describes the value of using a psychoanalytic theoretical framework to explore and understand behavioural disturbance in patients diagnosed with borderline personality disorder (BPD). It blends both theoretical and practical treatment considerations in working with BPD, using detailed case study presentations to demonstrate this material. It also provides a description of diagnostic procedures and the importance of recognising the transference relationship with patients diagnosed with this disorder. The psychoanalytic framework of moral masochism by Freud (1924/1961) is used to explore the unconscious function of deliberate self-harm behaviours. Case illustrations are offered to highlight the process by which to understand the patient’s unconscious responses throughout treatment, and to appreciate the patient’s experience of clinical care when a consideration of these unconscious processes is disregarded or not adequately acknowledged. Specific discussion is then offered on appreciating the role of the clinician in the therapeutic alliance in terms of the patient’s prognosis. The role of the transference in the repetition of the patient’s trauma, and therefore the occurrence of recurrent deliberate self-harm episodes during treatment, is then considered in detail.
Career Counseling and Constructivism: Elaboration of Constructs
Mary McMahon (The University of Queensland, Australia), Mark Watson (Nelson Mandela Metropolitan University, South Africa)
In series: Professions - Training, Education and Demographics
Hardcover: 978-1-61761-330-2. $98.00.
Softcover: 978-1-62948-575-1. $69.00.
Vocational guidance fits industrial societies and career counseling suits corporate cultures. However, neither guidance nor counseling seems to be the best practice for career intervention in the global economy of the information era. Thus, the emergence of career construction theory for comprehending vocational behavior and life-design interventions to assist people in choosing an adapting to work roles. This book examines and elaborates on the structural elements assembled into models of self-making, career constructing, and life designing.

Contemporary Topics and Trends in the Psychology of Sports
Changiz Mohiyeddini (University of Roehampton, London)
In series: Psychology of Emotions, Motivations and Actions
In series: Sports and Athletics Preparation, Performance, and Psychology
Hardcover: 978-1-62808-811-3. $150.00.
Sports psychology is a relatively young discipline within psychology. Contemporary sports psychology is a fast growing and diverse field. Hence, the objectives of this timely, comprehensive, and authoritative volume is to bring together an eminent group of international experts to provide an overview of the most recent developments in the psychology of sports. This volume comprises nine chapters: The initial chapter provides the reader with the definitions, topics and trends within the psychology of sports. This chapter is followed by an overview on current research in sports officiating and decision-making. Chapter three provides an in-depth discussion of simple heuristics in sports. Chapter four and five are focused on the issues of transformational leadership and assessing leadership styles of coaches. Chapter six provides an insight into the socially and highly relevant dimension of emotional intelligence. Chapter seven recognizes the significant impact of achievement motive in sports. Chapter eight and nine provide an insight into the interface of sports psychology and psychopathology discussing eating disorders among male athletes as well as the types of coping strategies as predictors for the development of psychosomatic disorders among athletes after career termination. This book has been written in a style to attract the attention of scholars and students who hopefully consider it readable, enjoyable and informative.

Delirium: Diagnosis, Management and Prevention
Randell Alonso
In series: Psychiatry - Theory, Applications and Treatments
2014. 120 pp.
Hardcover: 978-1-63117-471-1. $72.00.
Delirium is an acute change in mental status, which has the features of a fluctuating mental status, inattention, and either disorganized thinking or altered level of consciousness. It is a common development particularly in hospitalized elderly patients. Delirium is independently associated with adverse sequelae including increased mortality, institutionalization and cognitive decline. Despite this, case identification remains poor, with up to two-thirds being missed or misattributed to dementia, depression and other neuropsychiatric diagnoses. This book discusses how delirium affects the critically ill; early detection of delirium; delirium in surgical patients; and delirium's connection to eating disorders.

Depression in the Elderly
Emaad Abdel-Rahman (University of Virginia Health Sciences Center, Charlottesville, Virginia)
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-61324-771-6. $140.00.
Softcover: 978-1-63117-216-8. $89.00.
e-book: 978-1-61324-801-0. $140.00.
The world population is aging and the prevalence of age-related neurological diseases, such as stroke and neurodegenerative diseases, are continuously increasing. These diseases lead not only to impairment of motor function but also to the development of non-motor disorders, such as depression. In this book, the authors present current research in the study of depression in the elderly. Topics discussed include the links between geriatric depression and dementia; the physiological, psychological, social and environmental factors related to depression; depression in older adults with chronic kidney disease and physical activity and its anti-depressant effects for older people with depression.

Emotionality of Mental Illness. (2 Volume Set)
Kam-shing Yip (Department of Applied Social Studies, Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong)
In series: Psychology of Emotions, Motivations and Actions
Emotionality has long been recognized as a crucial ingredient in human beings. A good connection with emotionality is essential; it is highly complicated and dynamic in human life. It can never be fully explained or analyzed by rational analysis and measurement of emotions. The writer has published a book 'Emotionality and Mental Illness: A Multi-dimensional Model' in New York: Nova Science in 2012 in which various perspectives on emotionality are described. It is also related to one’s meaning of life, self and ego strengths, mind, body, behaviours and deeds, interpersonal relationships, roles and social functioning. Then, a multi-dimensional model in terms of feeling, mood, affect and sense is constructed to interpret the emotionality of persons with mental problems is also described. This book is an extension and elaboration of the above mentioned book and a two volume set. Volume I is a further refined articulation of emotionality in severe mental illness. Based on the multi-dimensional model of emotionality in terms of affect, mood, feeling and sense, the writer tries to interpret and intervene with the emotionality of severe mental illnesses such as the blunted affect of schizophrenia, feelings of anger in major depressive disorder, a dissociative sense of fear in post-traumatic stress disorder and the lonely mood in borderline personality disorder. In this book, the writer begins each chapter with a focus on the various perspectives of a specific type of mental illness. Based on these perspectives, the writer attempts to integrate these perspectives with related concepts in emotionality hoping that it can provide a humanistic, yet pioneering, platform in interpreting and intervening in persons with severe mental illnesses. Volume II is a further refined articulation of emotionality in severe mental illness. Based on the multi-dimensional model of
emotionality in terms of affect, mood, feeling and sense, the writer tries to interpret and intervene with the emotionality of severe mental illnesses such as the blunt affect of schizophrenia, feelings of anger in major depressive disorder, a dissociative sense of fear in post-traumatic stress disorder and the lonely mood in borderline personality disorder. In this book, the writer begins each chapter with a focus on the various perspectives of a specific type of mental illness. Based on these perspectives, the writer attempts to integrate these perspectives with related concepts in emotionality hoping that it can provide a humanistic, yet pioneering, platform in interpreting and intervening in persons with severe mental illnesses.

**Handbook of Psychology of Emotions: Recent Theoretical Perspectives and Novel Empirical Findings. Volume 2**

Changiz Mohiyeddini, Michael Eysenck and Stephanie Bauer (University of California Berkeley, CA, USA)

In series: Psychology of Emotions, Motivations and Actions


*The Handbook of Psychology of Emotions, Volume 2*, is a timely, comprehensive, and authoritative edition consisting of chapters by an eminent group of international emotion researchers who provide a cutting-edge overview of all major aspects of human emotions. In addition to reviewing the current state of the art in a number of main research areas related to the topic of emotion, the authors present squarely an outlook for the future research on emotion. Volume 2 includes the following four sections: Section One presents a comprehensive examination of the rule and impact of emotions in economical settings, specifically at the workplace, discussing the impact of individual differences, the role of emotions in the construction and enactment of doctor managers’ identities, issues related to emotional labor, emotional exhaustion in human service jobs, the effects of emotional labor on strain, the role of emotions on group performance, emotions and price satisfaction, and the link between emotion and money. Section Two focuses on the evolution of empathy, empathy gaps and decisions, and on the neuropsychology of emotional and cognitive mechanisms in decision making. Section Three provides an examination of the association between emotions, morals, and values. It comprises a chapter on emotions and self-integrity, a chapter on moral emotions and prosocial behavior and a chapter on the implementation of emotions in artificial entities. The final Section Four deals with emotion and music providing a chapter on music as the language of emotion and a chapter on the link between emotions, mood, and musical preferences.

**Handbook on the Psychology of Self-Esteem**

Jude H. Borders

In series: Psychology of Emotions, Motivations and Actions


Hardcover: 978-1-63117-225-0, $150.00.


Self-esteem is a widely studied topic within psychology. Recently, the connections between self-esteem and important life outcomes have been debated because studies have produced inconsistent findings. Many of these inconsistencies may be due to the fact that most studies have focused on self-esteem level without incorporating other aspects of self-esteem. This book provides information on using the temporal stability of self-esteem to better understand feelings of self-worth; variations in multi-dimensional physical self-concept; religion and self-esteem; self-esteem as a predictor of academic success in health professional degree students; effects on the level and relations of self-esteem in the early transition to secondary school in Germany; the role of siblings for children’s self-esteem; and several other topics.

**Managing Interpersonal Sensitivity: Knowing When — and When Not — To Understand Others**

Jessi L. Smith (Montana State University, MT, USA), William Ickes (University of Texas at Arlington, TX, USA), Judith A. Hall (Northeastern University, MA, USA) and Sara Hodges (University of Oregon, OR, USA)

In series: Psychology of Emotions, Motivations and Actions


Hardcover: 978-1-61728-691-9, $210.00.


Findings from the past two decades of interpersonal sensitivity research presented a big surprise to the researchers who were working in this area. These findings, at first suggestive and then unmistakably clear, showed that scores on various interpersonal sensitivity measures were not as stable as scores on other measures of cognitive ability (for example, IQ scores) seemed to be. The accumulating data further suggested that differences in situationally-evoked motivational states were the most probable cause of these variations in interpersonal sensitivity. This book examines this discovery and how it has completely changed the research agenda for those working in this field of study.

**Mental Health and Some Sociocultural Issues in Deaf People**

Benito Daniel Estrada Aranda (Universidad Autonoma De Nuevo Leon, Mexico)

In series: Disability and the Disabled-Issues, Laws and Programs


Hardcover: 978-1-61761-924-3, $85.00.


This book brings together a number of important issues within the area of mental health and deafness. The book is aimed at mental health professionals interested in learning more about the psychological reality of deaf people, and in particular, mental health disorders including, depression and stress. The psychological reality presented in this book also refers to other issues, firstly the issue of cultural identity and sexuality in deaf people and the abuse and violence against deaf women and how this affects their social interactions.

**Mirror Mirror on the Wall, Who’s The Thinnest of Them All? Reflections on Anorexia Nervosa in Adolescence**

Tatiana Zanetti (Department of Neuroscience, University of Padua, Regional Centre of Eating Disorders in Padua, Padova, Italy)

In series: Eating Disorders in the 21st Century

2014.

Hardcover: 978-1-63117-081-2, $85.00.


This book summarizes findings of studies that are united by a common theme of needs of psychiatric patients in Israel. The studies were performed from 2001-2010, in the Research Unit of Mental Health Services at the Ministry of Health and were motivated by the authors’ deep need to learn more about the met and mainly unmet needs of mentally ill people, and an urgent demand to develop innovative health
services or adjust the existing ones to both meet the needs and improve the quality of care and quality of life of their patients. Although the conception of need is a composite one and can be defined in multiple ways to include different aspects of common wishes motivating human activities and ways of their fulfillment, the authors’ use the Bradshaw definition of need (1972) as “perceived” need or what individuals believe they require. Within the context of health care, a need was considered a lack of health or welfare, or a lack of access to care. All the investigations were conducted in parallel with the Mental Health Reform in Israel and therefore reflect the specific needs and demands of deinstitutionalization. The selection of topics, the emphasis on briefly summarizing research findings rather than exhaustively reviewing the scientific literature and providing practical recommendations are intended to make the book an interesting and useful resource for policymakers, clinicians, and other health professionals, such as clinical psychologists, social workers, occupational therapists, general and family medical practitioners, nursing personnel, family members and other support persons, and perhaps mentally ill persons themselves.

New Developments in Cognitive Systems Research
Emily P. Rosenfield
In series: Psychology Research Progress
Softcover: 978-1-63117-188-8. $72.00.
In this book the authors present current developments in the study of cognitive systems research. Topics discussed in this compilation include the theory of everything cognitive, from neurons to extended cognition; cognitive systems associated with the hippo-campus of the human brain and their role in behavior and neurodegenerative disease; the evolution of frames in information systems development; and prospective fields of applied cognitive systems research.

Positive Human Functioning From a Multidimensional Perspective. Volume 2: Promoting Healthy Lifestyles
A. Rui Gomes, Rui Resende and Alberto Albuquerque (Universidade do Minho, Escola de Psicologia, Campus de Gualtar, Braga, Portugal)
In series: Psychology of Emotions, Motivations and Actions
2014. 204 pp.
Hardcover: 978-1-62948-973-5. $150.00.
e-book: 978-1-62948-981-0. $150.00.
The main goal of this volume is to analyze human development through the life cycle. Using examples of life skills and exercise practice, topics related to how to organize life skills programs for children, youth, and adults and how to assume healthy life styles by doing regular exercise are discussed. How to promote positive development across the life cycle is also addressed by numerous authors.

Positive Human Functioning From a Multidimensional Perspective. Volume 3: Promoting High Performance
A. Rui Gomes, Rui Resende and Alberto Albuquerque (Universidade do Minho, Escola de Psicologia, Campus de Gualtar, Braga, Portugal)
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62948-974-2. $150.00.
The main goal of this volume is to analyze human training to achievement contexts. Using examples of developmental and high performance contexts, topics related to talent development, athletes and teams’ training for high performance situations, and leaders’ training to maximum professional efficacy (including mainly the cases of sports coaches) are discussed. How to coach individuals, teams, and leaders to high performance is addressed by numerous authors. This is a journey through the complexity of human functioning being assumed in this book; it is a broad and deep perspective of the factors involved in human adaptation, human development, and human training. In summary, this book addresses the fundamental challenge referred to by Kennon M. Sheldon in the Preface of this book, namely, how to make things go right in our lives.

Psychology of Cravings
Anna Kuznetsova
In series: Psychology of Emotions, Motivations and Actions
Softcover: 978-1-62808-701-7. $72.00.
In this book, the authors discuss the psychology of cravings. Topics include craving theories from each of the following paradigms: phenomenological, psychobiological, cognitive, conditioning, psychodynamic and trans-theoretical approaches; control and acceptance as the dominant way of managing cravings; and understanding undergraduates’ cravings and guilt for sweets and carbohydrates.

Psychology of Creativity: Advances in Theory, Research and Application
Alessandro Antonietti, Barbara Colombo and Daniel Memmert (Department of Psychology, Catholic University of the Sacred Heart, Milano, Italy)
In series: Psychology Research Progress
Hardcover: 978-1-62808-140-4. $150.00.
Creativity is a topic that has gained increasing interest over the past decades and, unlike other topics which have sudden “moments of glory” and then quickly become neglected, it is an issue that continues to attract the attention of researchers and practitioners, overcoming the fluctuating fashions and curiosity of the moment. For this reason, it can be useful to consider periodically what is new about creativity. The aim of this book is to discuss recent developments in the field of creativity. More precisely, attention has been paid to four aspects. Firstly, the concept of creativity changes as a consequence of transformations in the social and cultural environment. Thus, the way creativity is meant needs to be always updated by referring it to new requests and goals. Secondly, new theoretical constructs are proposed or unsuspected links between creativity and other notions are explored, so as to revise the old concepts. Thirdly, new research methods and instruments are devised and investigators have new opportunities to shed light on further aspects of creativity. Finally, both researchers and professionals discover new fields where creativity can be cultivated and trained, broadening the range of possible applications. A variety of subjects are addressed by following different approaches and by considering different aspects of creativity. Hopefully this should allow readers to have an updated view of what is currently debated and investigated in the field of theory and research about the psychological processes involved in creativity.
Psychology of Extraversion
Andrea D. Haddock and Andrew P. Rutkowski
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62948-629-1, $150.00.
E-book: 978-1-62948-630-7, $150.00.
Extraversion is a personality trait characterized by gregariousness, excitement-seeking, and positive affect. Sociability is also considered an important part of extraversion, as persons that enjoy social activities prefer being with others rather than being alone. In this book, the authors present topical research in the study of the psychology of extraversion. Topics discussed include the correlates between subjective well-being and extraversion; the cross-cultural measurement of extraversion; a study of extraversion associations with neuroticism, openness to experience, agreeableness, conscientiousness, mental health and religiosity; extraversion and its impact on physical functionality in old age; the implications of extraversion in different aspects of psychological health and work life; extraversion and stress; personality and post-traumatic growth; an examination of the relationship between extraversion, optimism and happiness; the downside of extraversion and the upside of introversion; and the role of extraversion in predicting burnout.

Psychology of Fear: New Developments
Marta N. Purcella
In series: Psychology of Emotions, Motivations and Actions
2013. 111 pp.
Hardcover: 978-1-62808-888-5, $95.00.
E-book: 978-1-62808-889-2, $95.00.
In this book, the authors discuss new developments in the study of the psychology of fear. Topics include clinical-analogue studies investigating the renewal of fear; psychophysiological reactions and brain activity in phobic subjects; an experimental study investigating right-wing authoritarianism and the reduction of fear; and the extinction of fear-motivated responses used in the treatment of post-traumatic stress disorder and other fear-motivated learnings.

Psychology of Gender Differences
Sarah McGeown (Psychology Department, University of Hull, Hull, United Kingdom)
In series: Psychology Research Progress
Hardcover: 978-1-62081-391-1, $175.00.
Softcover: 978-1-62088-771-0, $79.00.
E-book: 978-1-62081-405-5, $175.00.
Gender differences are of interest in a wide range of disciplines. This diversity is reflected within this book, which provides a contemporary account of sex differences in areas such as social skills, play behaviour, creativity, motivation, temperament, classroom behaviour, self-esteem, trust, physical and mental health, visuo-spatial skills, spatial learning and imagery. The scientific research includes studies with infants, children, adolescents and adults, with contributions from researchers worldwide. Collectively, the chapters provide an up-to-date account and new insight into differences between males and females throughout development.

Psychology of Habits
Robin Mazziariello
In series: Psychology of Emotions, Motivations and Actions
Softcover: 978-1-62948-959-9, $72.00.
An important consideration in clinical nutrition management is food habits. The psychology of food habits is very interesting and can be useful for management of nutritional problems. Specific eating habits are accompanied by changes in patient’s own body perception, psychological well-being and interpersonal relationships. The dissatisfaction with one’s own appearance and the pursuit to reduce body mass start to be in the center of patient’s attention which may result in various psycho-pathological symptoms. This book focuses on the psychological wellbeing and attitude towards one’s own sexuality in female users of Polish websites on eating disorders; Sleep, television, texting and computer habits in schoolchildren and adolescents that are overweight; the psychology of food habits in an Indochina context; and the disordered eating habits among adolescents.

Psychology of Hope
Gerard M. Katzaros
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62808-964-6, $120.00.
In this book, the authors discuss the psychology of hope. Topics discussed include the development of the concept of hope and the phenomenon of hope; an integrative approach to promoting hope; hope as a positive cognition against adversity and beyond; hope vs. openness at end-of-life; hope theory in the education systems; and the employment hope scale in measuring the empowerment pathway to employment success.

Psychology of Meditation
Nirbhay N. Singh (Medical College of Georgia, Georgia Regents University, Augusta, Georgia, USA)
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62948-637-6, $230.00.
Our understanding of the nature and applications of meditation, especially mindfulness meditation, has been expanding almost as rapidly as the empirical evidence from neuroscience and intervention studies that have become available in the research literature. Meditation is centuries old and prevalent in almost all ancient cultures in one form or another. Initially, people in the West were enamored by its spiritual promise of personal transformation, but now a larger portion is attracted to mindfulness meditation (Vipassana or insight meditation) because of the promise of enhanced physical and mental wellbeing. Indeed, research shows that engaging in a daily practice of meditation for 20 to 30 minutes a day over 8 weeks produces new neural networks in the brain, attesting to observable calmness and clarity of perception. This book brings together a diverse group of experts who collectively provide a nuanced view of meditation from a variety of perspectives. This book offers a single-source authoritative guide to an ancient practice that is coming into its own in the Western world.

Psychology of Mindfulness
Kimiyo Murata-Soraci (School of Global Studies, Tama University, Kanagawa, Japan)
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62948-638-3, $150.00.
E-book: 978-1-62948-642-0, $150.00.
In our daily attempt to make sense of life and the world, we come to realize that appropriation of life hinges upon our mindfulness. Being
alert to how we dwell in the interior and exterior landscapes of our existence may yet turn around the present modes of living into a salutary condition and/or a better direction. And yet, in what sense(s) does “mindfulness” matter to us for genuinely experiencing our mortal time and for (re-)creation of the world? How successfully does “mindfulness” intervene the psycho-somatic experience of predicaments and enable us to better cope with times of distress and suffering? This book is an interdisciplinary collection of studies on mindfulness explored and discussed by the authors from different walks of life, disciplines and interests. It offers a rich set of interventions related to the practice of mindfulness meditations which effectively reduces human predicaments of menstrual-stress, neurosis, loneliness, anxiety, trauma, forgetfulness, and distress over cancer, fear of dying alone, mourning, etc., gathered by the authors through their research, teaching, and practice from the fields of philosophy, psychology, medicine, therapy, social work, education and fine arts.

The authors in this volume are thus attuned to the menace of recognizable objectivism and objectification of intrinsically interconnected lives of things, and are seeking, through their studies, ways of overcoming a tyranny of the “I” under a zenith of its objectivism in our cultural climate. Accordingly, this volume includes also three informative essays on the Mahayana Buddhist traditions in India and China, Japanese Sojó Zen practice of Dōgen, and a comparative study of meditation between the Western and the Eastern traditions of spirituality, so as to shed light on the historical and philosophical backgrounds of mindfulness meditation of the far East. This collection of essays closes with mindfulness as an issue of “interspecies, human-animal relations.” In order to find a step beyond the epoch of anthropocentrism, this book will extend our alertness to nonhuman animals wherein the essential traits of mankind have been repeatedly drawn and appropriated in the history of man. In conclusion, the book will examine new possibilities in the mind of the reader for seeking a way of authentic co-belonging with other species and of building a new ēthos beyond the age of objectivism and anthropocentrism.

Psychology of Neuroticism
Krisel Parn
In series: Psychology of Emotions, Motivations and Actions
2013. 102 pp.
Softcover: 978-1-62808-150-3. $72.00.
e-book: 978-1-62808-151-0. $72.00.
In this book, the authors present current research in the study of the psychology of neuroticism. Topics discussed include the measurement, development and behavioral expressions of neuroticism in early childhood; the relationship between perceived parenting styles and neuroticism in Argentinean children and adolescents; and evaluating mindfulness as a mediator of neuroticism and resilience.

Psychology of Punishment: New Research
Nicolas Castro
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62948-103-6. $95.00.
e-book: 978-1-62948-121-0. $95.00.
In this book, the authors present current research on the study of the psychology of punishment. Topics discussed in this compilation include effective punishment experiences and the need for a more comprehensive approach to conceptualizing behavioral punishers and reinforcers in a road safety context; differences in the process of choosing capital punishment or imprisonment and excerpts from a study by a Japanese lay judge; punishment avoidance and intentional risky driving behaviors; an overview of delayed punishment and future directions; corporal physical punishment today; and the role of gender and school type in EFL teachers’ adoption of classroom discipline strategies.

Psychology of Trust: New Research
David Gefen (Drexel University, Philadelphia, PA, USA)
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62808-552-5. $195.00.
This book presents a series of new ideas in 16 chapters about trust in a variety of contexts and across disciplines. The chapters highlight the broad contexts to which trust research has been applied from e-commerce to online marketplaces, recommendation agents, school principals, project management, network security, trust games, investment in charitable organizations, and more. These varied contexts all show the same overall conclusion that trust is a central part of human decision-making whether it pertains to another person’s social group, organization, unknown market players, or even technology artifacts. Importantly, the book shows how trust can be built, and how these antecedents apply, overlapping, across scenarios from online marketplaces to novice school principals to charitable organization, and to many other contexts.

Rational Suicide: Is It Possible? Reflections on the Suicide of Martin Manley
David Lester (The Richard Stockton College of New Jersey, Galloway, NJ, USA)
In series: Psychiatry - Theory, Applications and Treatments
Hardcover: 978-1-62948-666-6. $150.00.
It is slowly becoming accepted that people with terminal illnesses who are suffering physically and mentally from the illness have the moral and legal right to choose suicide and, in some jurisdictions, they have the ability to obtain assistance from others in accomplishing their suicide. Physician-assisted suicide is legal in Oregon and other regions of the USA and in some countries such as Switzerland. However, the presence of a psychiatric disorder in the individual usually makes it illegal for a physician to assist individuals (by prescribing a lethal dose of medication) in dying by suicide. What if the person does not have a terminal illness? Does this mean that their choice of suicide cannot be a rational decision? What if the person can be diagnosed with a psychiatric disorder? Does their psychiatric disorder eliminate the possibility of rational thought? Typically, today, the answer to both of these questions is “Yes.” In this book, David Lester, a renowned scholar in the field of suicide, argues that the answer to both questions should be “No.” In August 2013, Martin Manley chose to die by suicide and left a website in which he had written his thoughts for the previous year and a half. Lester analyzes Manley’s writing, and relevant psychological research, to argue that Manley’s decision was the result of rational thinking despite the fact that Manley did not have a terminal illness. The book also examines the notion that people with a psychiatric disorder cannot think rationally or make rational decisions. Lester first criticizes psychiatry for being scientifically unsound and then presents evidence that those labeled by psychiatrists as having a mental illness can make rational decisions. Lester also presents the case of Jo Roman who was suffering from terminal cancer, who refused further treatment and arranged to die by suicide supported by her husband and large circle of friends. Lester concludes that deaths by suicide may be rational more often than we commonly believe and that these deaths may be appropriate ways of dying.
Recent Hispanic Psychological Research on Feeding Behavior and HIV Patients
Cirilo H. Garcia Cadena, Antonio Lopez-Espinoza, and Julio A. Piña Lopez
In series: Psychology Research Progress
2014. 228 pp.
Hardcover: 978-1-62948-919-3. $150.00.
This book incorporates works of empirical research, derived from different conceptual models based on psychological or psychosocial theory. It presents scientific studies on psychology, done principally by Spanish-speaking researchers from different countries, and tries to include the best academic efforts of research as an easy way of communication with non-Latin researchers.

School Bullying: Predictive Factors, Coping Strategies and Effects on Mental Health
Kas Dekker and Maarten Dijkstra
In series: Psychology of Emotions, Motivations and Actions
In series: Children's Issues, Laws and Programs
Hardcover: 978-1-62808-809-0. $150.00.
Bullying is a multifaceted phenomenon and is connected to a variety of individual, relational, familial, schooling, and cultural variables. In this book, the authors present current research in the study of the predictive factors, coping strategies, and effects on mental health of school bullying. Topics discussed include the parental views of children's bullying experiences, coping strategies, and their association with parenting practices; personal and environmental predictors of school bullying and its emotional consequences; coping strategies of secondary school students experiencing bullying; bullying/victimization in preschool children; discordances in adolescents' adoption of perspectives on bullying and their importance for dealing with the problem; school bullying and health problems; the modifying factors, impact on psychosocial well-being and intervention strategies of bullying in childhood and adolescence; why do bullies bully?; the role of father involvement in children's bullying behavior; and the implementation of a statewide bullying prevention program and its impact on schools and communities.

Together and Lonely: Loneliness in Intimate Relationships – Causes and Coping
Ami Rokach and Ami Sha'ked (School of Psychology, The Centre for Academic Studies, Or Yehuda, Israel)
In series: Psychology of Emotions, Motivations and Actions
Hardcover: 978-1-62417-201-4. $230.00.
In this book, the authors discuss two of the most fundamental of human experiences: loneliness, and belonging. There have been other publications, over the years, about each of these topics separately, but none about how they interact and influence one another, in one integrated volume. Loneliness is an existential and basic human experience that all those who ever walked on this earth have experienced. Loneliness is always painful, subjective, all consuming, and an experience which we all try to avoid. This book reviews the most updated literature, research, and experimentation involving loneliness, human alienation, and separation. Covered are definitions and an understanding of what is loneliness, loneliness in philosophy, literature and the Bible, loneliness of marginalized populations, the difference between essential and transient loneliness, loneliness of the seriously ill and the dying, what causes loneliness, and how can we cope with it successfully. Addressing humans' great desire to belong, the book covers that overwhelming wish and need to be part of a community, a family and a romantic dyad, to belong and be valuable.

Youth and Adversity: Psychology and Influences of Child and Adolescent Resilience and Coping
Michael T. Garrett (Department of Clinical and Professional Studies, University of West Georgia, Carrollton, GA, US)
In series: Psychology Research Progress
2014.
This book offers the most current research and reviews, innovative programs and approaches, developments and directions, and future outlooks and trends from an international perspective by experts in the field on a variety of current topics related to youth facing adversity with implications for creating and maintaining child and adolescent resilience in a constantly changing world. In these chapters are themes and information that embody the stories of the lives of youth today. Topics include the following: parenting, coping, and motivation of Australian at-risk adolescents; religious rejection and resilience among Christian sexual minority youth; the influences from parents, police, and social work on at-risk youth in Hong Kong; resilience among Native American youth; the experience of Australian children who have been diagnosed and treated for pediatric hematol; the effect in adulthood with Serbian youth who grew up in political and economic turmoil; approaches for overcoming adversity among Arab American youth; EcoWellness as a way to connect with at-risk youth using nature as a basis for overcoming adversity; adolescents and gaming; polyvictimization and resilience among Spanish youth; a Liberation psychology approach to working with borderland Mexican children impacted by violence on the U.S.-Mexico border; substance use and resilience among adolescents; use of the Home Interaction Programme for Parents and Youngsters (HIPPY) as way for enhancing parenting practices to mitigate socioeconomic disadvantages faced by at-risk youth in New Zealand; use of rite of passage programs, specifically, the Louis Armstrong Manhood Development Program (LAMDP), as a way to address the overrepresentation of African American boys in special education; psychosocial factors involved in adolescent self-injury; and nurturing hope and resilience among at-risk middle school youth using a group rap therapy program called Wrapped in Resilience. All chapters provide a better understanding of various areas in which youth face adversity, and offer implications for ways of helping youth develop resilience and positive coping skills. Building upon the knowledge, awareness, and skills that are explored in this text, helping professionals, researchers, and educators who work with youth begin to better understand and more effectively intervene with the lived experience of youth who face adversity in many different forms today, and who survive these experiences in a way that makes them stronger and more resilient.

**RELIGION**

A Short History of the Georgian Church
Metropolitan Anania Japaridze, Mamuka Matsaberidze (Georgian Technical University, Georgia)
In series: Religion and Spirituality
Softcover: 978-1-62808-536-5. $52.00.
e-book: 978-1-62808-539-6. $52.00.
Georgia is located in the south of the Caucasus, between the Black and Caspian Seas. The history of its statehood counts back almost 3,500 years, and that of Christianity, 2,000 years. The Mother of God is considered the principal protector and intercessor of Georgia since the country was first allocated to her to preach in. Though later, on the will of God, she gave her icon to the Holy Apostle St. Andrew and dispatched him to preach Gospel in Georgia. St. Andrew preached in different parts of Georgia. St. Andrew preached Gospel together with St. Simon of Canaan in western Georgia, who was buried in Komani Village, Georgia. Another Apostle St. Matthias was also buried in Georgia. He preached in the south-western part of the country and was buried in Gonio, nearby Batumi. According to the oldest scripts, holy Apostles Bartholomew and Thaddeus also visited East Georgia and preached Gospel there. The Georgian Church has been founded by the Holy Apostles. Their journeys and preaches are scripted in the Georgian Chronicles, also by Greek and Latin authors, for instance: Origene (II-III cc), Bishop Dorotheus of Tiere (IV c), Bishop Epiphan of Cyprus (IV c), Nikita of Paphlagon (IX c), Ecumens (X c), etc.

Is God a Democrat? Essays from a Christian Perspective
James S. Larson (Southern University, Baton Rouge, LA, USA)
In series: Religion and Spirituality
Softcover: 978-1-62948-849-3. $52.00.

This book is about the basic differences between Democrats and Republicans that divide our country. It is also about God’s perspective on the issue, as revealed in the Christian Bible, and about God and the future—our future in heaven with him. God appears to sympathize with Democrats on certain public policy issues, as expressed in his views on the poor and the need to care for them. This implies God’s sympathy for the use of government intervention on their behalf when the private sector economy fails to provide for them. However, the Democratic view is problematic when the Bible is applied to certain social issues. Republicans rightly point out that God is not neutral on these social issues. How can political parties in the U.S. reach agreement on these and other issues? The idea of a society that is regulated by government to ensure more economic equality needs to be balanced with the freedom to pursue individual dreams. Republicans and Democrats will always fight over where that balance point should be placed. On the important social issues of the day, both sides need to pay more attention to God’s point of view as expressed in the Bible, and not simply dismiss that view when it fails to agree with contemporary mores. To risk God’s displeasure is a foolish course. Christians also should view world politics from a more cautious perspective. Jesus was not optimistic about human nature and our ability to solve problems with worldly values. Similarly, we should not be optimistic about man’s ability to politically and socially engineer a perfect world. Human nature and the presence of evil in spiritual realms will prevent that. To maintain some optimism, we need to focus on the future and God’s plan for us in heaven. Christians believe that we will reign with Christ in heaven, where he will be King of kings. Heavenly government seems like a contradiction in terms, but the Bible talks about a millennial reign of Christ on earth, followed by an eternal reign of God the Father. This should not result in cynicism, but in a renewed effort to see our public problems and solutions from God’s perspective, a perspective of love and faith.

Spiritual Influence in the Georgian Cultural Heritage
Mamuka Matsaberidze (Georgian Technical University, Tbilisi, Georgia)
In series: Religion and Spirituality
2013. 120 pp.
Softcover: 978-1-61324-576-7. $47.00.

One of the demonstrations of systemic world-view, the interaction between belief and knowledge, is the oldest problem the essence of which was discussed as far back as the first to second centuries. The proof of this is the work by Saint Clement of Alexandria, which is called “Stromata” or “Rugs” where he says that both knowledge and belief are indispensable for humans. This great scientist and philosopher said that the belief is primary and the knowledge is built on it. He wrote that a merely religious person is God’s slave, while an educated religious man is God’s friend, and that the basis of this lies in the Gospel, when our Lord Jesus Christ addresses his Apostles and says: “Friends of mine, I do not call you slaves but friends, as you already know everything that I conveyed to you”. This book discusses the spiritual influence in Georgia and its history dating back to the earliest times of mankind.

Templar Catechism
Diego Beltrutti (Via Monte Ollero, Busca, Italy)
In series: Religion and Spirituality
Hardcover: 978-1-62618-852-5. $85.00.

The structure of this book allows you to learn in a simple and understandable way, at least that is the intention of the author, of the central content and the fundamentals of the original message of the Templar Knighthood, beyond the fictional, folk, bizarre, false, and misleading aspects. The analysis of the profound and original motivations that underlie the movement of the Knights of the Temple, as well as the historical and social context, are essential elements not only for understanding the spirit of knighthood but also for recognizing the reasons for the rapid spread of this organization and its role in the military, economic, and spiritual history of medieval Europe. This book represents an exercise, and effort that the author hopes will be understood by the reader and eventually appreciated, since the person who writes this pursues, in everyday life, a profession that is not that of a professional historian.

The History of the Order of Saint Lazarus of Jerusalem
Charles Savona-Ventura
In series: Religion and Spirituality
2014. 204 pp.
Hardcover: 978-1-62948-563-8. $150.00.
e-book: 978-1-62948-725-0. $150.00.

The Order of Saint Lazarus is a lesser known Crusader Order that saw its development in the wake of the First Crusade in the 12th century together with the more popularly known Crusader Orders – the Order of Saint John [Hospitalers] and the Order of the Temple [Templars]. Its original brief in the Kingdom of Jerusalem was to succour the victims of leprosy but eventually assumed a military role. Supported by various European Royal houses, the Order expanded its range of influence to Europe. Following political machinations, it saw itself divided into two main branches: 1. A Savoyan branch – the Order of Sts. Lazarus and Maurice; and 2. A French branch – the Order of Saint Lazarus and Our Lady of Mount Carmel. Both Orders are still active today. The book reviews in detail the history of the Order of Saint Lazarus from its conception to the modern period using whenever possible access to original documentation and contemporary texts. Unfortunately, much of what has been written about the Order in the past has been based on biased secondary sources which have had a specific agenda either to denigrate or to support the Order. By reviewing the history using primary sources, whenever possible, one would hope that the reader would be able to identify fact from fiction throughout the historical timeline. The Order’s raison d’etre has changed over the centuries from a specific hospitaler Order caring for victims of leprosy adding on a military role in later years, to a Chivalric Order enjoying Papal and French Royal protection, to a philanthropic Order enjoying the fons honorum of the Melkite...
Patriot and eventually becoming increasing secular in an organization with a primary philanthropic role on an international scale. The book targets a varied audience ranging from individuals interested in Medieval, Crusader and Military history, and is suitable for the non-academic readers such as current members of the present Orders of Saint Lazarus to undergraduate and postgraduate academic researchers.

**RUSSIA**

**Putin's Russia: Politics, Economics, and U.S. Interests**
*Florence Brunner*

In series: *Russian Political, Economic, and Security Issues*
Hardcover: 978-1-63117-204-5. $135.00.

Russia made uneven progress in democratization during the 1990s, but this limited progress was reversed after Vladimir Putin rose to power in 1999-2000, according to many observers. During this period, the State Duma (lower legislative chamber) became dominated by government-approved parties, gubernatorial elections were abolished, and the government consolidated ownership or control over major media and industries, including the energy sector. The Putin government showed low regard for the rule of law and human rights in suppressing insurgency in the North Caucasus, according to critics. Dmitry Medvedev, Putin’s longtime protégé, was elected president in 2008; President Medvedev immediately designated Putin as prime minister and continued Putin’s policies. This book discusses in further detail, the politics and economics in Putin's Russia; and provides insight on the Russian political, economic, and security issues and United States interests.

**Russia and the United States: Arms Control**
*Louisa B. Murphy*

In series: *Non-proliferation, Disarmament and Arms Control*
2013. 132 pp.
Hardcover: 978-1-62808-559-4. $110.00.
e-book: 978-1-62808-560-0. $110.00.

In his 2013 State of the Union Address, President Obama stated that the United States would "engage Russia to seek further reduction in our nuclear arsenals." These reductions could be in parallel with Russia, without negotiating a new treaty. Many in Congress have expressed concerns about this possibility, both because they question the need to reduce nuclear forces below New START levels and because they do not want the President to agree to further reductions without seeking the approval of Congress. This book reviews the role of nuclear arms control in the U.S.-Soviet relationship, looking at both formal, bilateral treaties and unilateral steps the United States took to alter its nuclear posture. An analytic framework is discussed reviewing the characteristics of the different mechanisms, focusing on issues such as balance and equality, predictability, flexibility, transparency and confidences in compliance, and timeliness.

**Russia: Human Rights and Religious Freedom Reports**
*Ryan S. Molloy*

In series: *Russian Political, Economic, and Security Issues*
2013. 113 pp.
Softcover: 978-1-62808-848-9. $52.00.

In the context of growing human rights abuses, religious freedom conditions in Russia suffered serious setbacks. The Russian government's application of its extremism law violates the rights of members of certain Muslim groups and allegedly "non-traditional" religious communities, particularly Jehovah's Witnesses, through raids, detentions, and imprisonment. Various laws and practices increasingly grant preferential status to the Moscow Patriarchate of the Russian Orthodox Church. The Russian Federation has a highly centralized political system, with power increasingly concentrated in the president, and a weak multiparty political system. The most significant human rights problems include the restriction of civil liberties; violations of electoral processes; and the administration of justice. This book provides an overview of Russian human rights and religious freedom reports.

**RUSSIAN STUDIES**

**Russia and the North Caucasus Insurgency**
*Matthieu Durand*

In series: *Russian Political, Economic, and Security Issues*
Hardcover: 978-1-62808-527-3. $135.00.
e-book: 978-1-62808-528-0. $135.00.

The United States has had a bitter set of experiences with insurgencies and counterinsurgency operations, but it is by no means alone in having to confront such threats and challenges. Indeed, according to Russian President Dmitry Medvedev, the greatest domestic threat to Russia's security is the ongoing insurgency in the North Caucasus. This insurgency grew out of Russia's wars in Chechnya and has gone on for several years, with no end in sight. Yet, it is hardly known in the West and barely covered even by experts. In view of this insurgency's strategic importance and the fact that the U.S. military can and must learn from other contemporary wars, the Strategic Studies Institute brings attention to the war in this book, to shed more light upon both sides, the Islamists (and nationalist) rebels and Russia, as they wage either an insurgency or counterinsurgency campaign.

**SOCIAL JUSTICE**

**Federal Mandatory Minimum Sentencing: Elements, Considerations, and Statutes**
*Christophe Salaut*

In series: *Criminal Justice, Law Enforcement and Corrections*
2013. 189 pp.
Hardcover: 978-1-62948-557-7. $110.00.
Federal mandatory minimum sentencing statutes (mandatory minimums) demand that execution or incarceration follow criminal conviction. Among other things, they cover drug dealing, murdering federal officials, and using a gun to commit a federal crime. They have been a feature of federal sentencing since the dawn of the Republic. They circumscribe judicial sentencing discretion, although they impose few limitations upon prosecutorial discretion, or upon the President’s power to pardon. They have been criticized as unthinkingly harsh and incompatible with a rational sentencing guideline system; yet they have also been embraced as hallmarks of truth in sentencing and a certain means of incapacitating the criminally dangerous. This book provides an overview of federal statutes and a discussion of some of the constitutional challenges they have faced.

Opportunity Youth: Community-Led Solutions for Engaging Disconnected Youth
Paris Marina
In series: Social Issues, Justice and Status
Hardcover: 978-1-63117-415-5. $110.00.
Across the nation, individuals and community groups are working together to find new and effective solutions to local problems. Recognizing that the best ideas do not come from Washington but from communities, President Obama created the White House Council for Community Solutions in December 2010 by Executive Order to encourage the growth and maximize the impact of innovative community solutions and civic participation. Policymakers and youth advocates have begun to focus greater attention on young people who are not working or in school. Generally characterized as “disconnected,” these youth may also lack strong social networks that provide assistance in the form of employment connections and other supports such as housing and financial assistance. The purpose of this book is to provide context on the characteristics of youth who are not working or in school, and the circumstances in which they live.

Sexual Minority Research in the New Millennium
Todd G. Morrison and Melanie A. Morrison (University of Saskatchewan, Canada), Mark A. Carrigan (University of Warwick, UK), Daragh T. McDermott (National University of Ireland, Galway)
In series: Social Justice, Equality and Empowerment
2013. 270 pp.
Hardcover: 978-1-6209-933-2. $185.00.
Softcover: 978-1-62808-704-8. $79.00.
This new book presents current research focusing on sexual minorities. Topics discussed include gay and lesbian parenthood; asexuality; media representations of marginalized minorities; the effect of image contact on heterosexual women’s attitudes toward lesbian women; the high-school experiences of sexual and gender minority youth and best practices in the development of interventions designed to attenuate homonegativity. The final entry is a “virtual discussion” in which contributors responded to a set of questions that focused on key issues in the field of sexual minority studies.

SOCIAL TOPICS

Alcohol Ignition Interlock Programs: Elements and Considerations to Prevent Impaired Driving
Elise B. Tiessart
In series: Criminal Justice, Law Enforcement and Corrections
Softcover: 978-1-62948-546-1. $52.00.
This book describes an effort to document alcohol ignition interlock programs in the United States in order to highlight those programs or program features that are believed to be best able to serve traffic safety interests. Information has been gathered into this book bearing on important interlock program features together with some recommendations for states to consider as programs are developed. The general topics in the body of this book include program enrollment issues; interlock program ramp-up and expansion; standardization of reporting and information flow; program compliance, noncompliance and interlock removal; linkages to treatment; differences in court-based judicial programs and motor vehicle administered interlock programs; and suggested core elements of interlock programs. The authors believe that the single major difference among panelists interviewed centered on whether interlocks should play a role in the monitoring of court-ordered alcohol abstinence.

Automatic Retirement Savings: Select Analyses
Arnaud Renardin
In series: Retirement Issues, Plans and Lifestyles
Hardcover: 978-1-62948-560-7. $110.00.
Although employer-sponsored retirement plans can be an important component of income security after retirement, only about half of all workers participate in such plans. To foster greater participation among workers who have access to such plans, Congress included provisions that facilitate plan sponsors’ adoption of automatic enrollment policies in the Pension Protection Act of 2006. To foster greater retirement savings among workers who do not have access to an employer-sponsored plan, proposals have been made at the federal level for an “automatic IRA” and at the state level for state-based programs. Because of questions about the extent of retirement savings and prospects for a sound retirement for all Americans, the Government Accountability Office (GAO) was asked to determine (1) what is known about the effect of automatic enrollment policies among the nation’s 401(k) plans, and the extent of and future prospect for such policies; and (2) the potential benefits and limitations of automatic IRA proposals and state-assisted retirement savings proposals. This book analyzes automatic retirement savings plans with an overview of available reports and data, and interviews of plan sponsors, industry groups, investment professionals, and relevant federal agencies.

Child Support Enforcement Program: Elements, Financial Issues, and Incentive Payment Policies
Pascal Chollet
In series: Children’s Issues, Laws and Programs
Hardcover: 978-1-62808-384-2. $110.00.
The Child Support Enforcement (CSE) program was enacted in 1975 as a federal-state program (Title IV-D of the Social Security Act) to help strengthen families by securing financial support for children from their noncustodial parent on a consistent and continuing basis and by helping some families to remain self-sufficient and off public assistance by providing the requisite CSE services. Over the years, CSE has evolved into a multifaceted program. While cost-recovery still remains an important function of the program, its other aspects include service delivery and promotion of self-sufficiency and parental responsibility. In FY2011, the CSE program collected $27.3 billion in child support payments and served nearly 15.8 million child support cases. However, the program still collects only 62% of current child support obligations for which it has responsibility and collects payments for only 57% of its caseload. This book examines the
background, financial issues and incentive payment policies for the Child Support Enforcement Program.

**Child Support Issues: Federal Policy on Medical Care and Incarceration as an Enforcement Tool**

*Rene Pellerin*

In series: *Children’s Issues, Laws and Programs*

2013. 133 pp.

Softcover: 978-1-62808-376-7. $52.00.


The Child Support Enforcement (CSE) program was signed into law in 1975 as a federal-state program to enhance the well-being of families by making child support a reliable source of income. The CSE program is based on the premise that both parents are financially responsible for their children. The CSE program is operated in all 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands, and by several Indian tribes or tribal organizations. State CSE programs have at their disposal a wide variety of methods by which to obtain child support obligations. In addition, states under their own authority and the authority of their courts can use the threat of incarceration and/or actual incarceration. This book provides an overview on federal policies relating to medical care and incarceration as an enforcement tool in child support cases. Included in this book also are frequently asked questions relating to child custody and support issues.

**Employment of Native American Veterans Living on Tribal Lands: Recommendations and Efforts**

*Ronald Baudin*

In series: *Social Issues, Justice and Status*


Softcover: 978-1-63117-538-1. $52.00.


The unemployment rate for all veterans has risen since the beginning of the economic downturn, but the unemployment rate for Native Americans living on tribal land has been higher. In addition, tribal land is frequently located in remote areas characterized by limited economic development, which can make finding a job challenging. A range of federal programs provide employment assistance that can serve veterans of any race or ethnicity; in addition, other federal programs offer similar services to Native Americans (veterans and non-veterans alike). The Department of Labor’s (DOL) Veterans’ Employment and Training Service administers several grant programs to support eligible veterans through the Jobs for Veterans State Grants Program. This book provides recommendations for improving employment and job training opportunities for Native American Veterans on tribal lands, especially through the utilization of resources for Veterans; and reviews current and prior government-to-government relations between tribal organizations and the Department of Labor Veterans’ Employment and Training Service (DOL-VETS).

**Food Insecurity in U.S. Households with Children: Trends and Analysis**

*Dustin C. Bertram*

In series: *Social Issues, Justice and Status*

2013. 100 pp.

Softcover: 978-1-62948-015-2. $52.00.


Most U.S. households with children have consistent, dependable access to adequate food for active, healthy living for both adults and children—they are food secure. However, 21 percent of households with children were food insecure at times during the year in 2011, and in some of those households, children as well as adults were food insecure. The U.S. Department of Agriculture (USDA) monitors the extent and severity of food insecurity in U.S. households through an annual, nationally representative survey, with special attention to households with children. Food security is especially important for children because their nutrition affects not only their current health, but also their physical, mental, and social development—and thus their future health and well-being. Previous studies suggest that children living in food-insecure households face elevated risks of many problematic health and development outcomes, compared with children in otherwise similar food-secure households. USDA’s domestic food and nutrition assistance programs improve children’s food security by providing low-income households with access to a healthful diet and nutrition education. Knowledge about the extent of food insecurity in households with children and the household characteristics associated with food insecurity contributes to the effective operation of these and other programs that support the well-being of children. This book describes the extent and severity of food insecurity in households with children in 2011, food security trends since 1999, and characteristics of households affected by food insecurity in 2010 and 2011.

**Race, Ethnicity and Impaired Driving: Selected Research**

*Dimitri Maillet*

In series: *Transportation Issues, Policies and R&D*

2013. 156 pp.

Hardcover: 978-1-62948-572-0. $110.00.


The racial and ethnic composition of the U.S. population is rapidly evolving. This is of substantial importance to traffic safety specialists because there is extensive evidence that the risk of involvement in traffic crashes varies significantly across racial and ethnic groups. Protective and risk factors affecting some groups may not be relevant to others. To be effective, safety programs and educational messages to curb such risks need to be sensitive to the nation’s growing cultural diversity. This book reviews the state of knowledge of alcohol-impaired driving among major racial and ethnic groups living in the United States. Although it focuses primarily on impaired driving, it also covers the precursor issue of the differences in ethnic drinking practices. Finally, this book explores the meaning of key concepts that define the problem of the meaning of race, ethnicity, and acculturation; how these concepts are associated with health-related disparities; and how they relate to impaired driving.

**School Social Work: Current Practice and Research**

*Wing Hong Chui (The University of Hong Kong, Hong Kong)*

In series: *Children's Issues, Laws and Programs*

In series: *Education in a Competitive and Globalizing World*

2013. 177 pp.

Hardcover: 978-1-62808-334-7. $85.00.


The primary aim of this book is to examine the role of social workers in schools with respect to fostering children’s rights and creating better outcomes for children and young people in seven selected countries or places: China, Hong Kong, Taiwan, Australia, New Zealand, Canada and the United States. In this edited volume, a number of scholars, researchers and social work practitioners share their insights on school social work service or practice in their respective countries or places, and discuss how school social work service can further be improved to address the needs and problems of children and young people. School social work is a specialized area of youth work around the world. It has been developed for a long time. However, school social work service may take different forms and shapes, thereby affecting how it is delivered. For instance, while some school social workers primarily play the role of a clinical counselor or caseworker, others see
themselves as an advocate for the disabled and disadvantaged young people in schools. Therefore, instead of making comparisons among different practices, each chapter aims to introduce salient features of the school social work service of a specific country or place. In addition to examining the historical development of school social work in their regions, each chapter will also explore the views of school social workers regarding their successes and challenges in their day-to-day practices. Each chapter covers the following topics: 1) a brief overview of the development of school social work services (such as from informal to formal development and the contexts for its development); 2) contemporary school social work practice and delivery (such as qualifications of school social workers, role and duties of the school social worker, and general and specific school social work practice, if any), and 3) a selected topic of the contributor’s interest or research area. This edited volume, in many respects, provides readers with first-hand information and innovative ways on how school social workers around the world can improve the quality of their professional work with children and young people.

Social Issues Research Summaries, Volume 1
Lewis D. Wilson
In series: Social Issues, Justice and Status
Hardcover: 978-1-62948-105-0. $185.00.
This new book compiles research summaries of top professionals in the field of social issues research from a number of different focuses in this important field.

Student Bullying: Federal Perspectives and Reference Materials
Benson Haynes
In series: Social Issues, Justice and Status
Hardcover: 978-1-62948-816-5. $195.00.
Many Members of Congress have become increasingly concerned about what can be done to address student bullying. Congressional interest is in response to high-profile incidents of bullying and their negative consequences, as well as to an increasing body of research documenting the detrimental effects of school bullying. This book begins with working definitions of bullying and cyber-bullying that were developed by a federal interagency working group. It provides a brief overview of research on the prevalence and impact of bullying, and it reviews research on what can be done to reduce student bullying. The authors continue to discuss the federal and state laws providing protection of children from cyberstalking, cyberharrassment, and cyberbullying and end the book focusing on the White House conference on bullying prevention.

Victimization: Select Reports from the Bureau of Justice Statistics
Joanne Tilley
In series: Social Issues, Justice and Status
Softcover: 978-1-63117-304-2. $52.00.
The Bureau of Justice Statistics’ (BJS) National Crime Victimization Survey (NCVS) is an annual data collection designed to gather information about nonfatal personal crimes and household property crimes in the United States. The main purpose of the NCVS is to accurately measure the number and type of criminal victimizations that occur each year to persons ages 12 or older. Victimization rates are most commonly used in NCVS reports to describe changes in the level of personal and household crime over time and the levels of crime experienced by different population subgroups. However, prevalence rates also may be used to describe changes in the level of crime over time and differences between subgroups. This book discusses victimization rates and prevalence rates and the value of each type of indicator for understanding criminal victimization; details the number, percentage, and demographic characteristics of victims who reported one or more incidents of identity theft during a 12-month period; and focuses on the attributes of intimate partner victimization as measured by the type of crime, type of attack, whether the victim was threatened before the attack, weapon use by the offender, victim injury, and medical treatment received for injuries.

SOCIIOLOGY

Advances in Sociology Research. Volume 14
Jared A. Jaworski
In series: Advances in Sociology Research
Hardcover: 978-1-62948-375-7. $150.00.
This continuing series presents original leading edge research results in the field of sociology. Each chapter has been carefully selected in an attempt to present substantial advances across a broad spectrum. Included in this compilation are topics such as the new wave of social change, past, present and future in Tunisia; the absence of a scientific research curriculum in Sudanese society; European musical tastes and country effects; the link between traditional medicine and evangelical Christianity among Ghanaians; the work values, ethnicity and ethnic conflict of Jews and Arabs in Israel; and African American women living with HIV/AIDS in Alabama's black belt.

African American Perspectives: Family Dynamics, Health Care Issues and the Role of Ethnic Identity
Marian S. Harris (Social Work Program, University of Washington, Tacoma, WA, USA)
In series: Social Issues, Justice and Status
2013. 239 pp.
Hardcover: 978-1-62948-028-2. $150.00.
This book contains a compelling collection of work that provides insight into many complexities encountered by contemporary African Americans. The editor introduces this diverse volume of work with a preface that provides background regarding African Americans that sets the stage for the wide range of topics explored in this powerful compendium of work that includes a demographic picture of African Americans. This edited collection of original chapters by leading scholars from many disciplines and backgrounds brings together work that equally balances theoretical, research, and clinical papers. Each thought provoking chapter provides a wealth of in-depth information for the reader. All of the chapters are unique and very interesting. The book is designed to be interdisciplinary in its appeal. This accessible and comprehensive volume is a great way to explore and expand one’s knowledge base about a broad range of issues that are pertinent to the lives of the 42 million people who are identified as African American in this country today.

Aging, Culture and Society: A Sociological Approach
Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)
In series: Social Perspectives in the 21st Century
Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2013. 92 pp.
Softcover: 978-1-62808-968-8. $52.00.
Aging, Risk and Globalization

Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)
In series: Social Perspectives in the 21st Century

Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2013. 72 pp.
Softcover: 978-1-62808-902-8. $52.00.
e-book: 978-1-62808-906-6. $52.00.
This book examines the concept of aging. It interrogates how it has been co-opted and absorbed by bio-medical approaches to gerontology. The book explores how the concept of risk is a major feature of how aging has been constructed and positioned by bio-medical experts, a transition to a “risk society” and the implications of populational aging in global society.

American Indians: Developments, Policies, and Research. Volume 3

Albert O. Hughes and Eric A. Sanders
In series: American Indians: Developments, Policies and Research
2013. 185 pp.
Hardcover: 978-1-62948-463-1. $110.00.
This book presents current research on new developments and policies in the American Indian population in the United States. Topics discussed in this compilation include the administrative process by which groups may be acknowledged as Indian tribes; federal funding for non-federally recognized tribes; an examination of the Department of Homeland Security efforts to coordinate with tribal governments to address border security threats and vulnerabilities on Indian reservations; and federal agencies focus on fighting crime in Indian country and strengthening the bond between federal and tribal law enforcement.

Communication Despite Postmodernism

Joseph J. Pilotta (The Ohio State University, School of Communication, Ohio), Algis Mickunas (Department of Philosophy, Ohio University, Ohio)
In series: Contemporary Cultural Studies
Edited by: Joseph J. Pilotta (The Ohio State University), John Murphy (University of Miami, Florida), Algis Mickunas (Ohio University)
Hardcover: 978-1-62081-161-0. $195.00.
Softcover: 978-1-62808-343-9. $79.00.
The malaise of today’s “Cultural Studies” is perhaps best summarized by Picasso (paraphrased) “success can lead to copying from oneself, and copying from oneself, and that is worse than copying from others.” This book is both a response and an independent configuration of the dominant, current trend: that is “cultural studies” known as the Birmingham/U.S. School (B/USS). Contemporary Cultural Studies leapfrogs the Birmingham/U.S. School of “future self-clarification.” The fundamental conceptual, mythological and philosophical problematics have been worked over the last 40-plus years in the United States in advance of the current self-clarification exercises. Surprisingly, the genesis of U.S. Contemporary Cultural Studies is in Continental philosophy, not unlike the genesis of the Birmingham/U.S. School. This book discusses some procedural questions and practical features relevant to theory and research practice in social science and humanities from the standpoint of phenomenology.

Contemporary Issues in Modern Society

Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)
In series: Social Perspectives in the 21st Century

Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2013. 85 pp.
Softcover: 978-1-62808-212-8. $52.00.
This book explores the major contemporary social issues in modern society with a clear focus on major facets of social life. The book examines the relevance of crime, employment, social care and family life - and suggests that in different ways each major theme is essential for understanding the past, present and future.

Cultural Heritage: Protection, Developments and International Perspectives

Piero Fediani, Marco Fediani and Luca Rosi (University of Florence, Italy)
In series: Focus on Civilizations and Cultures
Hardcover: 978-1-62808-812-0. $150.00.
This book on cultural heritage uses several points of view. Included are theories on cultural heritage preservation such as the cult of ancient monuments, our history and the economic value of cultural heritage preservation. A diagnostic evaluation is suggested through an integrated multidisciplinary approach, making use of quantitative and reliable data. This diagnosis helps in understanding the new properties of decayed wood and, in perspective, lets us classify the material according to its level of decay for better conservation. Also, the problems of global warming, rising seas, and coastal erosion on the conservation of archaeological, historical, and other types of tangible cultural heritage sites located along the world’s coastlines, are described. Frank R. Thomas, using a case study from Micronesia (Kiribati), argues that tangible cultural heritage should not be limited to strengthening cultural identity in a rapidly globalized world, but could also serve as a benchmark in providing long-term perspectives on environmental change, biodiversity conservation and local opportunities for heritage tourism.

Education, Employment and Pensions: A Critical Narrative

Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)
In series: Social Perspectives in the 21st Century

Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2013. 67 pp.
Softcover: 978-1-62808-383-5. $52.00.
This book explores the relationship between education, employment and pensions in contemporary western society. The book is in two parts. The first part focuses on theoretical interpretations of youth and
education drawing out implications of risk and power relationships. The second part of the book explores employment and pension policy and the implications for populational groups.

**Ethnicity: Theories, International Perspectives and Challenges**

*Charles Agyemang, Collins O. Airhihenbuwa and Ama de-Graft Aikins (Department of Public Health, University of Amsterdam, the Netherlands)*

In series: *Social Issues, Justice and Status*

In series: *Immigration in the 21st Century: Political, Social and Economic Issues*

Hardcover: 978-1-62808-124-4, $150.00.
e-book: 978-1-62808-161-9, $150.00.

Increasing globalization and technology has made the modern world more interconnected and interdependent than ever before in human history. These shared connections and dependencies have naturally led to increasing internal and international migration in recent times. As a result, many countries today are ethnically and culturally diverse. This new world order of ethnic and cultural diversity has rewards including the enhancement of the well-being of both migrants and the host populations. Immigration is essential for some societies to make up for the falling population growth and skill shortages while at the same time playing a crucial role in emigrés supporting their home communities for social and economic developments through remittances. Migration also poses several challenges for both migrants and the host populations. Among many challenges facing migrants include issues of integration, identity, language difficulties, acceptability or discrimination, and access to social and health care services. For the host populations, the complex nature of modern migration flows with varied groups poses extra challenges in meeting the needs and addressing the well-being of all subgroups in the population. This book addresses some of the important processes associated with migration and their relation to health outcomes from an international perspective.

**Favoritism, Fairness and Equity in the Federal Workforce: Perceptions, Impacts and Recommendations for a Strong Merit System**

*Rian Zuberi*

In series: *Social Issues, Justice and Status*

Hardcover: 978-1-63117-364-6, $135.00.

The Merit System Principles (MSPs) promote an effective Federal workforce free of Prohibited Personnel Practices (PPPs). The MSPs serve as the foundation of Federal employment policy and practice, workplace fairness, and the Federal Government’s ability to effectively accomplish its goals. The Merit System Principles guide Federal supervisors to base their workforce decisions on objective criteria, such as assessments of ability or performance, rather than personal feelings and/or relationships, lest they be viewed as practicing personal favoritism. Favoritism is distinct from discrimination on legally protected bases and is frequently more difficult to clearly identify when it is occurring given the absence of visible cues on which the preference is made. However, like discrimination, favoritism is contrary to the ideals of the Federal merit systems. This book summarizes the findings of MSPB’s research into employee perspectives regarding the extent to which they believe that favoritism occurs within the Federal merit systems and its potential effects.

**Feminist Social Theory**

*Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)*

In series: *Social Perspectives in the 21st Century* 

Edited by: *Jason L. Powell (Dean of Faculty, University of Liverpool)*

(2013. 74 pp.
Softcover: 978-1-62948-535-5, $52.00.
e-book: 978-1-62948-538-6, $52.00.

This book examines the rise and consolidation of feminist insights into contemporary social theory. The book begins by providing an historical backdrop that led to the emergence of women's experiences starting to be seen on an equal footing to those of men. The book explores the problems of sexism and gender bias that have prevented full access to equality from materializing drawing upon key thinkers of feminist social theory.

**Helping Professions and Aging: Theory, Policy and Practice**

*Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)*

In series: *Social Perspectives in the 21st Century*

Edited by: *Jason L. Powell (Dean of Faculty, University of Liverpool)*

(2013. 77 pp.
Softcover: 978-1-62808-381-1, $52.00.
e-book: 978-1-62808-393-4, $52.00.

This book explores the development of helping professions with older people. It provides a theoretical excursion drawing from French philosophy to examine how social work as a helping profession has changed its form and shape with older people in order to reinvent itself. The book attempts to explore the matrix of theory, policy and practice in exploring the past to the present to the future in exploring new developments and the latest research on helping professions with regard to the elderly.

**Hispanics at Work: A Collection of Research, Theory and Application**

*Donna Maria Blancero (Bentley University, Waltham, MA) Robert G. DelCampo (University of New Mexico, NM)*

In series: *Professions - Training, Education and Demographics*

Hardcover: 978-1-62100-428-8, $165.00.
Softcover: 978-1-62808-855-7, $69.00.

This book contains a unique set of pieces which examine the plight of Hispanics in today’s workforce. A diverse set of scholars share their perspectives and insight on extant research to create the definitive collection of readings on Hispanic Workforce issues. This volume covers issues as diverse as occupations and their propensity toward and interaction with racioethnicity, to specific challenges of the Hispanic workforce such as work-family balance and the impact of machismo.

**Housing Discrimination Research: Racial and Ethnic Minorities and Same-Sex Couples (With Accompanying CD-ROM)**

*Maxwell Blake*

In series: *Social Justice, Equality and Empowerment*

Hardcover: 978-1-62948-705-2, $195.00.

For much of the twentieth century, discrimination by private real estate agents and rental property owners helped establish and sustain stark patterns of housing and neighborhood inequality. Beginning in the late 1970s, the Department of Housing and Urban Development (HUD) has
rigorously monitored trends in racial and ethnic discrimination in both rental and sales markets. This book presents findings from the fourth such study, which applied paired-testing methodology in 28 metropolitan areas to measure the incidence and forms of discrimination experienced by black, Hispanic, and Asian renters and home buyers.

**Issues in Sociology**

*Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)*

In series: *Social Perspectives in the 21st Century*

Edited by: *Jason L. Powell (Dean of Faculty, University of Liverpool)*

2013, 63 pp.

Softcover: 978-1-62808-211-1, $52.00.


Sociology is the systematic study of the taken-for-granted assumptions that people make about everyday life. This book explores a triumvirate of important concepts in sociology: power, trust and globalization. These concepts and examples need to be studied so assumptions masquerading as "fact" can be debunked by critical sociological questioning. We explore domains such as politics and government, health and community care as well as global financial issues, which are all centrally relevant issues in modern Sociology.

**Key Thinkers in Social Science**

*Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)*

In series: *Social Perspectives in the 21st Century*

Edited by: *Jason L. Powell (Dean of Faculty, University of Liverpool)*

2013, 88 pp.

Softcover: 978-1-62808-453-5, $52.00.


This book explores the relevance of key thinkers in social science from historical traditions to contemporary philosophers and the nature of modern society and how theories and concepts can be used to shed light on trends and inequalities around the world in which these thinkers lived. History is fast moving. The book attempts to explore the works of Weber, Durkheim, and Marx in the first three chapters to illustrate how their varieties of social science gave intimation about the social world in terms of social disorder and the remedies and actions needed to bring about social justice. The latter three chapters explore arguably the three most influential thinkers in social science of the 20th Century: Parsons, Foucault and Habermas. These thinkers in different ways gave a number of diagnoses of modern society. Some arguing for more balance between individuals and society as best regulated by institutions such as the family (Parsons), others argued for a more sophisticated understanding of power and how it plays out for social groups in modern society (Foucault) whilst for others critical social scientists should be focusing on defending the enlightenment ideals of reason and rationality as we go further into the 21st century. The book raises questions and provides many examples to stimulate thoughtful reflection about all our yesterdays, todays and tomorrows.

**Learning and Performance in Corrections: A Framework and Annotated Bibliography for Workplace Learning**

*Marco Delgado*

In series: *Social Issues, Justice and Status*

2014, 84 pp.

Softcover: 978-1-63117-533-6, $52.00.


Correctional agencies around the country are challenged by an increasingly transient workforce, exponential growth in technology, and continued budget cuts. This book focuses on learning and performance challenges in the 21st century including the role of technology in learning programs and the incorporation of evidence-based practices into program design and delivery. The book offers an extensive review of learning research in the areas of theory, learners, learning organizations, instructional design, program design, delivery methods and modalities, learning transfer, and program assessment.

**National Strategy for Achieving Health Equity and a Plan to Reduce Racial and Ethnic Health Disparities**

*Elmira Bloom*

In series: *Social Justice, Equality and Empowerment*


Hardcover: 978-1-63117-043-0, $195.00.


In 1985, the United States Department of Health and Human Services (HHS) released a landmark report documenting the existence of health disparities for minorities in the United States. It called such disparities, “an affront both to our ideals and to the ongoing genius of American medicine.” In the decades since the release of that report much has changed in our society—including significant improvements in health and health services throughout the nation. This book focuses on a national stakeholder strategy for achieving health equity, and a health and human services action plan to reduce racial and ethnic disparities in health and health care.

**Neo-Liberalism and the Power of Globalization**

*Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)*

In series: *Social Perspectives in the 21st Century*

Edited by: *Jason L. Powell (Dean of Faculty, University of Liverpool)*

2013, 87 pp.

Softcover: 978-1-62948-469-3, $52.00.

e-book: 978-1-62948-473-0, $52.00.

This book assesses the historical and modern significance and emergence of global forces and its impact on nation states. In particular, the power of globalization comprises two inter-locking factors: economic power and the hegemony of neo-liberalism. Drawing on a range of examples, the book assesses the legacy of globalization and its impact on the disciplinary development of social science and its enduring impact on the contemporary social world.

**Public and School Safety: Risk Assessment, Perceptions and Management Strategies**

*Jarrett Conaway*

In series: *Safety and Risk in Society*


Softcover: 978-1-63117-223-6, $72.00.


Schools are, in general, safe spaces for every student, teacher and other professional. However, some problems related to the maintenance of school building and installations, as well as other threats related to cases of vandalism and bullying, can occur during academic activity. Safety must be part of the regular process of management, establishing tasks and roles and promoting the development of prevention plans, with the objective of guaranteeing protection for all people who regularly attend schools. Success in safety management lies in knowing what takes place in a school, being conscious of the risks that can affect students, teachers and other professionals who study and work there. This book discusses the EDURISC self-assessment questionnaire used for the assessment of integral safety in schools; provides insight on
school indoor quality; and examines integration of chemical safety education into the preschool curriculum.

**Rape, Torture and Genocide: Some Theoretical Implications**

*Daniela De Vito (Roehampton University, London, United Kingdom)*

In series: *Laws and Legislation*


Hardcover: 978-1-61728-501-1. $190.00.

Softcover: 978-1-63117-150-5. $89.00.


How rape has been conceptualized, placed and treated by the various components within international human rights and humanitarian law present both inconsistencies, and in recent times, innovative conclusions. In terms of the former category, inconsistencies, when rape is explicitly mentioned within, for instance, the context of international humanitarian law, it tends to be associated with a woman’s honor and not as a crime of violence or it is linked to the protection of women and not with the prohibition of rape. In contrast, the well-established international crime of torture has been conceptualized as a crime of violence and its prohibition is paramount. This book undertakes a political analysis approach to what can happen when rape is subsumed into the international crimes of torture and genocide.

**Rethinking Social Welfare**

*Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)*

In series: *Social Perspectives in the 21st Century*

Edited by: *Jason L. Powell (Dean of Faculty, University of Liverpool)*

2013. 64 pp.

Softcover: 978-1-62808-330-9. $52.00.


This book is one of the first to explore contemporary welfare developments in the western world through a conceptual lens that is utilised by Michel Foucault and Foucault-inspired scholars. In the current economic climate in America and Europe as of 2013 for example, welfare is at a crossroads with implications for how service users needs are being met or not, how assessment encroaches on surveillance and the extent to which service users ‘voice’ is being translated into the welfare practice that helps them facilitate their independence and, crucially, quality of life.

**Rituals: Practices, Ethnic and Cultural Aspects and Role in Emotional Healing**

*Alley Parish*

In series: *Focus on Civilizations and Cultures*


Hardcover: 978-1-62948-664-2. $150.00.


Rituals of various kinds are a feature of almost all known human societies, past or present. They include not only the various worship rites and sacraments of organized religions and cults, but also the rites of passage of certain societies, atonement and purification rites, oaths of allegiance, dedication ceremonies, coronations and presidential inaugurations, marriages and funerals, and others. In this book, the authors discuss the practices, ethnic and cultural aspects and role in emotional healing relating to rituals. Topics include communitarianism and the Obasinjom mask performance as ritual healing among the Bayang and Ejagham of Southwest Cameroon; plant-based rituals for the prevention and cure of the evil eye in a rural community of Western Spain; Shamanic healing and psychotherapy; pro-social functions of ritual involvement in early adolescents; the religious rituals of the Anastenarides in Greece; ritual of healing people in the Shamanic practice of the Nanai people inhabiting the lower Amur Region; and medico-religious plants and cultural rituals used by the Mauritian population against diabetes and related complications.

**Social Issues Researcher Biographical Sketches and Research Summaries. Volume 1**

*Lewis D. Wilson*

In series: *Social Issues, Justice and Status*


Hardcover: 978-1-62948-108-1. $185.00.


This new book compiles biographical sketches of top professionals in the field of social issues research, as well as research summaries from a number of different focuses in this important field.

**Social Security Systems: Issues, Challenges and Perspectives**

*Jan Farber and Lea Hertz*

In series: *Social Issues, Justice and Status*

In series: *Economic Issues, Problems and Perspectives*


Softcover: 978-1-62808-880-9. $72.00.


In this book, the authors present current research from across the globe in the study of the issues, challenges and perspectives of Social Security Systems. Topics discussed in this compilation include understanding elderly poverty in the United States; the development and reforms of the Social Security system in Taiwan; Social Security systems in Eastern and Southern Africa; and an overview of the major issues concerning developed Social Security systems in the Organization for Economic Co-Operation and Development (OECD) by comparing welfare models and their ability to cope with the upcoming challenges in the short and medium terms.

**Social Work, Performativity and Personalization**

*Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)*

In series: *Social Perspectives in the 21st Century*

Edited by: *Jason L. Powell (Dean of Faculty, University of Liverpool)*

2013. 72 pp.

Softcover: 978-1-62808-903-5. $52.00.


This book, which draws from fieldwork research and evidence, is provided to suggest a sense of emotional anxiety among social workers and case managers working on the ‘front-line’ within local authority social service departments in England. This is taking place within British Prime Minister David Cameron’s government agenda of “personalization of care”. This new emphasis places the onus on the client rather than the gaze of the social worker. Yet, there are contradictions that lie at the heart of social work, social care and personal care. Theories have attempted to detangle these contradictions. There have been a number of theoretical approaches that have attempted to ground the concept of ‘power’ to understand organizational practice through significant Foucauldian insights that have been most captivating in illuminating power relations and subject positioning. This book is the first of its kind to explore the impact on ‘performativity’ of social workers and governance (governmentality) of workers and clients in the personalization policy process.
Symbolic Interactionism
Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)
In series: Social Perspectives in the 21st Century
Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2013. 90 pp.
Softcover: 978-1-62808-213-5. $52.00.
e-book: 978-1-62808-218-0. $52.00.
This book explores the rise and consolidation of Symbolic Interactionism. This is one of the most important and significant theories of social action in all the disciplines of social science and sociology. The book begins by charting its historiography, conceptual developments, key authors, links to emerging methodologies, and methods. The book ends with a reflective critique pointing to building on the key work that has been developed by a power social theory.

The Aging Body
Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)
In series: Social Perspectives in the 21st Century
Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2013. 81 pp.
Softcover: 978-1-62808-380-4. $52.00.
e-book: 978-1-62808-394-1. $52.00.
This book explores the main issues in new social science approaches to understanding the human body and aging. In particular, the development of postmodernism and its relationship to culture and the body is delineated. The book also addresses some of the power issues that manifest in social relationships focused on the body. Here, the work of Michel Foucault is useful in using conceptual tools to disrupt dominant biomedical narratives relating to the aging body.

The Malthusian Century
Charles T. Stewart, Jr. (Emeritus Professor of Economics, George Washington University, Washington DC, USA)
In series: Social Issues, Justice and Status
2014. 177 pp.
The quadrupling of the world population in the 20th century has overburdened the environment and accelerated the depletion of natural resources, whether renewable or not. The effort of the largest nations, China, India, and others, to attain affluence at this time further damages the environment and tax resources. Recently, fertility rates have fallen dramatically, below replacement in much of the world. The number of workers will be declining while the number elderly dependent on their resources, whether renewable or not. The effort of the largest nations, China, India, and others, to attain affluence at this time further damages the environment and tax resources. Recently, fertility rates have fallen dramatically, below replacement in much of the world. The number of workers will be declining while the number elderly dependent on their

The Social Analysis of Emotion and Trust
Jason L. Powell (Associate Dean of Faculty, Coventry University, UK)
In series: Social Perspectives in the 21st Century
Edited by: Jason L. Powell (Dean of Faculty, University of Liverpool)
2013. 86 pp.
Softcover: 978-1-62948-120-3. $52.00.
e-book: 978-1-62948-130-2. $52.00.
This book examines the social analysis of emotion as well as its multifaceted interpretation by social theories emanating from the critical social science field. An overview of positivist, interpretative and postmodern approaches to glean a holistic understanding of emotion in everyday life is discussed. Furthermore, the concept of trust is introduced and is explored in relation to emotion. It is drawn from a range of examples, such as health and social care. The book aims to examine the possibilities and problems of trust relations in helping professions.

The War Against Poverty: Progress and Status, Fifty Years On
Adnan Keoni
In series: Hunger and Poverty: Causes, Impacts and Eradication
Hardcover: 978-1-63117-421-6. $110.00.
The poverty rate increased markedly over the past decade, in part a response to two economic recessions. A strong economy during most of the 1990s is generally credited with the declines in poverty that occurred over the latter half of that decade. The poverty rate increased each year from 2001 through 2004, a trend generally attributed to economic recession and failed to recede appreciably before the onset of the next recession. This book provides a progress report of poverty 50 years later as well as insight on the poverty levels of the United States in 2012.

Urban Developments in Brazil and Portugal
Mário Moraes Valença (Universidade Federal do Rio Grande do Norte; Centro de Ciencias Humanas, Campus Universitario- Brazil) Fernanda Cravidão and José Alberto Rio Fernandes (CEGOT – Universidade do Porto)
In series: Urban Development and Infrastructure
Softcover: 978-1-62948-150-0. $79.00.
Several themes and perspectives are reunited under this collection of texts about urban developments in the Portuguese-speaking worlds of Brazil and Portugal. As each analyst tends to have a particular view on what the concept should refer to, the meaning attributed to the word ‘development’ in this book is also diverse. This is one of the reasons why it is written in its plural form: ‘developments’. The concept (or the word) is here used openly so that all efforts to define it are provisional, partial and elusive, considering the various national, regional, linguistic and scientific meanings pertaining to correlated facts and processes and according to the geo-historical context in which the term is used. In the title, the idea of ‘urban developments’ is also used to indicate evolution or novelty. The book is dedicated to discussing state-of-the-art urban research in Brazil and Portugal.
SOUTH AND CENTRAL AMERICA

Honduras: Conditions, Issues and U.S. Relations

Diego C. Pineda

In series: Latin American Political, Economic, and Security Issues

Softcover: 978-1-62948-352-8. $52.00.
e-book: 978-1-62948-353-5. $52.00.

Honduras, a Central American nation of 7.9 million people, has had close ties with the United States over many years. The country served as a base for U.S. operations in Central America during the 1980s, and it continues to host a U.S. military presence and cooperate on anti-drug efforts today. Trade and investment linkages are also long-standing, and have grown stronger in recent years through the implementation of the Dominican Republic-Central America-United States Free Trade Agreement (CAFTA-DR). Migration is another central concern in bilateral relations; over 702,000 Hispanics of Honduran origin live in the United States—nearly two-thirds of whom are foreign born. Although the U.S.-Honduras relationship was somewhat strained as a result of the 2009 political crisis in Honduras, close cooperation quickly resumed in 2010. Since then, broad U.S. policy goals in Honduras have included a strengthened democracy with an effective justice system that protects human rights and enforces the rule of law, and the promotion of sustainable economic growth with a more open economy and improved living conditions. This book examines current conditions in Honduras as well as issues in U.S.-Honduras relations with a focus on human rights, international religious freedom and investment climate economics.

SPORTS

Endurance: Attitudes/Behaviors, Performance in Athletes and Potential Health Effects

Pantelis Nikolaidis (Department of Physical and Cultural Education, Hellenic Army Academy, Greece)

In series: Sports and Athletics Preparation, Performance, and Psychology

2014. 72 pp.
Softcover: 978-1-62948-962-9. $72.00.

Cardiorespiratory endurance is both a health-related and sport-related physical fitness component due to its association with health and well-being, and sports performance, respectively. Since the number of those participating in regular endurance training is continuously increasing, it is very interesting to explore performance, as well as the psychological and health aspects of endurance. This book attempts to address performance, psychological and health aspects of cardiorespiratory endurance. In this collective volume, we have tried to provide a background for understanding various aspects of endurance to the readers. We are thankful to all the authors for their valuable contributions. In addition, we thank the reviewers who corrected the chapters, and the staff of Nova Publishers for their valuable suggestions.

Innovative Writings in Sport and Exercise Psychology

Robert Schinke, PhD, CSPA

In series: Sports and Athletics Preparation, Performance, and Psychology


The present compilation marks the fifth consecutive year that Athletic Insight has teamed with Nova Science on the development of a compendium of writings from the journal. This year’s contributions feature a series of international scholars from Canada, the United States, Norway, Finland, Denmark, the United Kingdom, South Korea, Norway, and Israel. Upon review of these submissions, one also finds an interesting turn on the part of the journal — that more than half of the submissions are from outside of North America. More broadly speaking, submissions were received from five continents, excluding the Arctic and Antarctica. Dissect the submissions further and you will recognize several senior authors within these submissions, including Ronnie Lidor, Craig Wrisberg, Diane Gill, David Lavallee, Theodore Butryn, Tatiana Ryba, and several more. Personally, I am quite excited by the series of authors and diversity in topic matter found in this compendium. I dare say that this year’s compendium is the strongest offered by Athletic Insight to date. On behalf of the publisher and the editorial staff, I hope you enjoy the chapters that follow. What follows is a brief review of the contributions found in this compendium and then the accepted publications from 2013. Robert Schinke, EdD, Editor of Athletic Insight Canada Research Chair in Multicultural Sport and Physical Activity.

Lockouts and Work Stoppages in Professional Sports: Select Analyses

Conor A. Walsh

In series: Sports and Athletics Preparation, Performance, and Psychology

Softcover: 978-1-62948-080-0. $52.00.
e-book: 978-1-62948-081-7. $52.00.

Work stoppages involving professional sports, whether caused by the players going on strike or the owners imposing a lockout, are by their very nature contentious and not always resolved quickly or easily. Major League Baseball has experienced the greatest number of work stoppages (eight), followed by the NFL (five), NHL (four), and NBA (two). While both NBA work stoppages were lockouts, the other three leagues have experienced a combination of strikes and lockouts. Major League Baseball has had five strikes and three lockouts, and the NHL one strike and three lockouts. This book provides an examination of the circumstances of each strike followed by a table that identifies relevant legislative measures, and an overview of Congressional comments and report language regarding the strike, which were drawn from hearings and reports, and remarks made on the House or Senate floor. This information shows the extent of actual, or intended, congressional involvement and how some members viewed congressional involvement in the strike, and a discussion of antitrust exemptions applicable to professional sports is also included.

SUBSTANCE ABUSE

Addictions Treatment Workforce: Recruitment and Retention Challenges and Best Practices

Shane C. Bodner

In series: Substance Abuse Assessment, Interventions and Treatment

Hardcover: 978-1-62808-651-5. $110.00.

The field of addictions treatment and recovery is facing a crisis. The need for addictions treatment surpasses the treatment resources currently available. In 2006, the 21.1 million people in the U.S. needed treatment but did not receive it (SAMHSA OAS, 2006). One reason for
this gap is that the current treatment workforce is too small and unprepared to meet the growing need for services. At the same time, the treatment and recovery field is part of a profession that is undergoing profound changes. Many of the treatment programs, government agencies, and professional associations that exist today were started in the 1970s, a time when the nation was just beginning to confront an unprecedented prevalence of drug abuse. Since then, the workforce has changed. Counselor requirements are different. Knowledge and understanding about addictions and recovery have advanced. Laws have changed. New drugs of abuse have emerged. So have new treatments. The only constant is the fact that addiction continues to devastate individuals, families, and communities. This book addresses the specific needs of addictions treatment and recovery professionals and will help in understanding the current challenges and future directions of the addictions field and how they apply to workforce development.

**America’s Substance Abuse and Mental Health Workforce: Issues and Needs**

*Omri Galinsky*

In series: *Substance Abuse Assessment, Interventions and Treatment*

In series: *Mental Illnesses and Treatments*

2013. 152 pp.

Hardcover: 978-1-62808-634-8. $110.00.


The Substance Abuse and Mental Health Services Administration (SAMHSA) has prepared these reports to Congress to provide an overview of the facts and issues affecting the substance abuse and mental health workforce in America. SAMHSA's reports cover the behavioral health workforce in its entirety because many data sources and programs report by profession or discipline rather than by population served (e.g., social workers, psychologists, and counselors), whether providing prevention services or treatment and whether serving persons with substance use disorders, mental health conditions, or both. Data specific to the substance use disorder treatment workforce will be provided wherever available. This book also includes demographic data as well as a discussion of key issues and challenges such as staff turnover, aging of the workforce, inadequate compensation, worker shortages, licensing and credentialing issues, and recruitment, and retention and distribution of the workforce. The misunderstandings and often inaccurate perceptions of society about mental illness and addiction as these relate to workforce challenges are also discussed.

**Recovery-Oriented Systems of Care for Individuals with Substance Use Problems: Elements, Guidance and Resources**

*Jonah Edelman*

In series: *Substance Abuse Assessment, Interventions and Treatment*


Hardcover: 978-1-62808-648-5. $135.00.


The concept of recovery lies at the core of the Substance Abuse and Mental Health Services Administration (SAMHSA)'s mission, and fostering the development of recovery-oriented systems of care and services is a Center for Substance Abuse Treatment (CSAT) priority. In support of that commitment, in 2005, SAMHSA's CSAT convened a National Summit on Recovery. Participants at the Summit represented a broad group of stakeholders, policymakers, advocates, consumers, clinicians, and administrators from diverse ethnic and professional backgrounds. Although the substance use problems and disorders, treatment and recovery field has discussed and lived recovery for decades, the Summit represented the first broad-based national effort to reach a definition of recovery and a common understanding of the guiding principles of recovery and the elements of recovery-oriented systems of care. This book reviews the research related to the 12 guiding principles of recovery and the 17 elements of recovery-oriented systems of care developed through the National Summit on Recovery. It also offers an appraisal of scientific literature discussing the recovery-oriented systems of care conceptual framework and literature on recovery-oriented service and systems implementation.

**Screening and Brief Intervention for the Reduction of Alcohol-Impaired Driving: Overview and References**

*Margaru Verjus*

In series: *Criminal Justice, Law Enforcement and Corrections*


Softcover: 978-1-62948-544-7. $52.00.

e-book: 978-1-62948-545-4. $52.00.

Only a small fraction of the impaired drivers who are at risk for alcohol-impaired-driving crashes are arrested. These include drivers who drink regularly or occasionally to intoxication before they drive. Researchers have estimated the probability of being arrested while driving while intoxicated (DWI) with a blood alcohol concentration at or above .10 g/dL to be about 1 in 200. A similar study reported that only 23% of alcohol-positive drivers admitted to trauma units and emergency departments following crashes are convicted of DWI. This book provides an overview of the use of Screening and Brief Intervention (SBI) as a countermeasure for those who have displayed, or could potentially display, harmful/hazardous drinking behaviors, including drinking and driving. This book endeavors to acquaint the highway safety community with an overview of the development of SBI, the context in which SBI is employed, the efficacy and limitations of this approach, and the policy implications for traffic safety.

**Strengthening the Substance Use Treatment Workforce and Provider Networks**

*Valentín LeBlanc*

In series: *Substance Abuse Assessment, Interventions and Treatment*


Hardcover: 978-1-62808-683-6. $135.00.


In 2004, over 23 million Americans age 12 and older needed specialty treatment for alcohol or illicit drug problems. Of those in need, only 10 percent received treatment at a specialty facility. There are a number of factors that contribute to low treatment participation rates. One of the most fundamental is the lack of an adequate human infrastructure to support current and future demands for treatment. The addictions treatment field is facing a workforce crisis. Worker shortages, inadequate compensation and stigma currently challenge the field. Increasingly, treatment and recovery support providers also struggle with issues related to recruitment, retention and professional development of staff. The ability to provide quality addictions treatment and recovery support services is severely hampered by these conditions. Without investment in human infrastructure, this critical public health function will not be equipped to respond effectively to the overwhelming need for services. This book includes a discussion of both long-term and emergent issues impacting the addictions treatment workforce and provides a context for understanding the challenges facing the addictions treatment workforce and a background for the recommendations that follow.

**Substance Use Among Select Ethnicities: Adults and Adolescents**

*Ron N. Gurovitz*

In series: *Substance Abuse Assessment, Interventions and Treatment*

2013. 94 pp.
This book explores new horizons for the economic analysis of terrorism with an innovative combination of economics and offender profiling. The book is aimed at contributing to law enforcement efforts to pre-empt and pursue the lone wolf terrorist. By taking the economic analysis of terrorism back to its core concepts of 'opportunities' and 'choices' and by insisting that all results be both computable and relevant to the investigative process, the author examines lone wolf terrorism from a unique perspective that yields new insights into the nature of the lone wolf terrorist’s opportunities and choices to inflict human tragedy. Not content with the task of delineating opportunities and choices, the author shows how the frameworks he has developed may be inverted and deployed in the pursuit of the lone wolf terrorist if efforts to pre-empt the lone wolf terrorist have failed. This book is groundbreaking for both the type of economics analysis it presents and its conscious break with several long-held traditions of terrorism studies. Both academics and law enforcement practitioners will find the author’s analysis stimulating, confronting and, above all, applicable to the investigative processes designed to pre-empt or pursue a single violent offender who aims to etch a graphic biography of violence into the public consciousness.

**Lethal Targeting of U.S. Citizens Suspected of Terrorism: Legal Issues and Positions of the Obama Administration**

*Amelia C. Howard*

In series: *Terrorism, Hot Spots and Conflict-Related Issues*


Softcover: 978-1-62808-577-8. $52.00.
e-book: 978-1-62808-578-5. $52.00.

The killing of Anwar Al-Awlaki and another U.S. citizen by airstrike in Yemen, although never officially attributed to U.S. military action, has fueled the ongoing debate about the legal propriety of targeted killings, in particular where a U.S. citizen is targeted or killed. While the Obama Administration has not released a detailed description of the legal rationale undergirding the targeting policy, some insight into the Administration's thinking can be gleaned from speeches given by high-ranking Administration officials and government filings in a legal case brought by Awlaki's father in an effort to enjoin military operations against his son. This book examines the debate concerning legal targeting of U.S. citizens suspected of terrorism, by providing legal background, setting forth what is known about the Administration’s position and identifying possible points of contention among legal experts and other observers, including the view from abroad.

**Nuclear Terrorism: Response Preparedness Issues of Major Cities**

*Casey A. Lloyd*

In series: *Terrorism, Hot Spots and Conflict-Related Issues*

2013. 94 pp.

Softcover: 978-1-62948-696-3. $52.00.
e-book: 978-1-62948-697-0. $52.00.

A terrorist attack in a major city using an RDD or an IND could result not only in the loss of life but also have enormous psychological and economic impacts. Major cities are assumed to be preferred targets of such attacks, and local governments, along with their states, have primary responsibilities for early response (within the first 24 hours), with assistance from federal sources, as necessary, coming later. A disjointed or untimely response could increase the impact and undermine public confidence in federal, state and local governments’ ability to respond to an attack. This book provides background for understanding the RDD threat and responses, and presents issues for Congress.
The potential of environmental resources as touristic resources and the impact of tourism on these resources are open research area and, because of its social and economic impact, arouse great interest among the social stakeholders. It is necessary to understand and measure their mutual influence in order to achieve positive mutual links between tourism and the environment. This new book addresses the interaction between tourism and the environment through several disciplines, a multidisciplinary perspective, and different theoretical and methodological approaches. In addition, this book presents a wide range of current research and promotes debate and analysis on this research.

AIRPORTS

Airport Analysis, Planning and Design: Demand, Capacity and Congestion

Milan Janic (Delft Univ. of Technology, Delft, The Netherlands)

In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit


Hardcover: 978-1-60741-308-0. $115.00.

Softcover: 978-1-62808-310-1. $69.00.


Airports are components of the air transport system together with the ATC (Air Traffic Control), and airlines. Many existing airports have been confronted with increasing requirements for providing the sufficient airside and landside capacity to accommodate generally growing but increasingly volatile and uncertain air transport demand, efficiently, effectively, and safely. This demand has consisted of aircraft movements, passengers, and freight shipments. In parallel, the environmental constraints in terms of noise, air pollution, and land use (take) have strengthened. Under such circumstances, both existing and particularly new airports will have to use the advanced concepts and methods for analysis and forecasting of the airport demand, and planning and design of the airside and landside capacity. These will also include developing the short-term and the long-term solutions for matching capacity to demand in order to mitigate expected congestion and delays as well as the multidimensional examination of the infrastructural, technical, technological, operational, economic, environmental, and social airport performance. This book provides an insight into these and other challenges, with which the existing and future airports are to be increasingly faced in the 21st century.

ALCOHOL-IMPARED DRIVING

Alcohol-Impaired Driving: Countermeasures and Safety Recommendations

Michael C. Boehm

In series: Safety and Risk in Society


Hardcover: 978-1-62948-591-1. $110.00.


The National Transportation Safety Board (NTSB) has long been concerned about alcohol-impaired driving, which accounts for approximately one-third of all U.S. highway fatalities. In the past several decades, awareness of the dangers of alcohol-impaired driving has increased. Public and private entities focusing on this safety issue have changed social perceptions concerning alcohol-impaired driving; they have also achieved important legislative actions to help reduce it. Due to these efforts, the number of lives lost annually in alcohol-impaired-driver-related crashes declined 53 percent, from 21,113 in 1982 to 9,878 in 2011; and the percentage of highway fatalities resulting from alcohol-involved crashes is down from 48 percent in 1982 to about 31 percent today. In recent years, however, U.S. success in addressing this safety issue has plateaued. This book describes the scope of the impaired driving problem; summarizes the efforts of advocacy groups, researchers, law enforcement agencies, traffic safety groups, public health organizations, legislators, and motor vehicle agencies, as well as federal, state, and local governments, to reduce the number of crashes, injuries, and fatalities; examines the effect of alcohol consumption on an individual’s ability to operate a motor vehicle and on the risk of being involved in a crash; and evaluates the effectiveness of current and emerging alcohol-impaired driving countermeasures and identifies new approaches and actions needed to reduce and ultimately eliminate alcohol-impaired driving.
Casual Carpooling: An Analysis of its Mechanics and Merits
Nancy Turnbull
In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit
Hardcover: 978-1-63117-159-8. $110.00.
This book describes the results of a focus group study that explored the phenomenon of casual carpooling from the perspective of individuals who participate in such systems as drivers and/or passengers.

Cell Phones and Distracted Driving: Selected Research
Sidney C. Houghton
In series: Safety and Risk in Society
e-book: 978-1-62948-598-0. $195.00.
Distracted driving is a behavior dangerous to drivers, passengers, and non-occupants alike. An analysis is a specific type of inattention that occurs when drivers divert their attention from the driving task to focus on some other activity instead. Of those people killed in distraction-affected crashes, 40% occurred in crashes in which at least one of the drivers was using a cell phone (13% of fatalities in distraction-affected crashes) at the time of the crash. Use of a cell phone includes talking/listening to a cell phone, dialing/texting a cell phone, or other cell-phone-related activities. In keeping with the National Highway Traffic Safety Administration’s distraction plan (Overview of the National Highway Traffic Safety Administration’s Driver Distraction Program, April 2010, DOT HS 811 299), the agency continues to refine collection of information about the role of distracted driving in police-reported crashes. This book examines data gathered on specific distracting activities to support the development of safety countermeasures and to conduct improved data analysis.

Containerized Cargo: Competition Among U.S., Canadian and Mexican Seaports
Andre Bruyere
In series: Transportation Issues, Policies and R&D
Softcover: 978-1-62948-511-9. $86.00.
This book examines the competitiveness of Mexican and Canadian ports with U.S. West Coast ports; discusses the history and the theories of cargo diversion and of the Harbor Maintenance Tax (HMT); reviews ocean freight rates, transit times and rail charges; and examines other potential relevant factors influencing the movement of cargo.

Continuously Reinforced Concrete Pavement: Best Practices in Design, Construction and Rehabilitation
Nelson Pohlman
In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit
Softcover: 978-1-63117-261-8. $52.00.
e-book: 978-1-63117-262-5. $52.00.
Continuously reinforced concrete pavement (CRCP) is enjoying a renaissance across the United States and around the world. CRCP has the potential to provide a long-term, “zero-maintenance,” service life under heavy traffic loadings and challenging environmental conditions, provided proper design and quality construction practices are utilized. This book provides an overview of the CRCP technology and the major developments that have led to what are referred to herein as the “best practices” for CRCP design and construction. The purpose of this book is to provide the best practices information on rehabilitation strategies for extending the service life of continuously reinforced concrete pavements (CRCP). The procedures described in this book consist of defining the problem, identifying potential solutions, and selecting the preferred alternatives.

Distracted Driving in Commercial Vehicles and Buses: Research and Analyses
Bradley E. Weaver
In series: Safety and Risk in Society
Promoting safe operation of commercial motor vehicles (CMVs) and reducing the number and severity of crashes on U.S. roadways is critical to the mission of the Federal Motor Carrier Safety Administration (FMCSA). Research on distracted driving has increased over the past several years, due, in part, to the increasing number of reported crashes involving cellular telephone (cell phone) use while driving, recent literature reviews that highlighted some key findings and a study that described the magnitude of the problem in light (passenger) vehicles. There is a knowledge gap regarding the operation of trucks (three-axle or more trucks and tractor trailers/tankers) and buses (including transit and motor coaches, but referred to as “buses” hereafter) in regards to distracted driving and, more specifically, cell phone use and texting while driving. The aim of this book is to use existing data to document the prevalence of distractions while driving a commercial motor vehicle.

Distraction Effects of In-Vehicle Number and Text Entry
Daryl A. Bronson
In series: Transportation Issues, Policies and R&D
Hardcover: 978-1-62948-599-7. $195.00.
e-book: 978-1-62948-600-0. $195.00.
This book examines distraction effects of in-vehicle number and text entry during motor vehicle operation. An experiment was conducted to assess the distraction potential of secondary tasks using the Alliance of Automotive Manufacturers’ Principle 2.1B verification procedure implemented using specifications obtained from an Alliance member company. Secondary tasks included radio tuning, destination entry, 10-digit dialing, dialing via contact selection, and text messaging were performed using the original equipment systems of a 2010 Toyota Prius V and an iPhone 3GS smart phone. Sixty-three participants 35 to 64 years old drove a low-fidelity, PC-based simulator while performing the secondary tasks. The driving scenario required participants to maintain a 150-ft following distance behind a lead vehicle that was traveling at a constant speed of 50 mph. Alliance driving performance metrics included lane exceedance frequency and the standard deviation (SD) of car-following headway. Two sets of analyses compared present study outcomes with those from a previous study, which used a Dynamic Following and Detection (DFD) protocol that provided both Alliance Principle 2.1B and other vehicle control and visual target detection metrics. The results are presented in this book.

Durable Coating Systems for Steel Bridges
Margaret S. Criswell
In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit
Hardcover: 978-1-63117-158-1. $110.00.
The Federal Highway Administration 100-Year Coating Study was initiated in August 2009 to identify coating systems that can provide...
100 years of virtually maintenance-free service life at comparable costs to the existing coating systems, even in adverse environments. This book focuses on the study and discusses the performance evaluation of one-coat systems for new steel bridges.

**Historic Covered Bridge Security**  
**Benjamin Donnelly**  
In series: *Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit*  
Softcover: 978-1-63117-041-6. $52.00.  
e-book: 978-1-63117-052-2. $52.00.  
Covered bridges used to cover the American landscape from coast to coast. However, because of various factors including neglect, arson, vandalism, and natural disasters, currently less than 700 to 900 bridges are still in existence today. This book discusses the covered bridge security manual and the remote monitoring of historic covered timber bridges for the prevention of arson and vandalism.

**Intermodal Transportation and Airport Connectivity: Considerations and Development**  
**Collin B. Herman**  
In series: *Transportation Issues, Policies and R&D*  
2013. 150 pp.  
Hardcover: 978-1-62948-144-9. $110.00.  
With the number of airplane passengers using U.S. airports expected to grow to almost 1 billion by the year 2015, ground access to U.S. airports has become an important factor in the development of our nation’s transportation networks. Increases in the number of passengers traveling to and from airports will place greater strains on our nation’s airport access roads and airport capacity, which can have a number of negative economic and social effects. U.S. transportation policy has generally addressed these negative economic and social effects from the standpoint of individual transportation modes and local government involvement. However, European transportation policy is increasingly focusing on intermodal transportation as a possible means to address congestion without sacrificing economic growth. This book addresses the development of intermodal capabilities at U.S. airports, including (1) the roles of different levels of government and the private sector; (2) the extent such facilities have been developed; (3) benefits, costs, and barriers to such development; and (4) strategies to improve these capabilities.

**Roadway Work Zone Analysis: Guidance for Decision-Makers and Analysts**  
**Heather P. Winfield**  
In series: *Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit*  
Hardcover: 978-1-63117-155-0. $195.00.  
Work zone planning and management has become increasingly challenging because of increasing travel demand and an aging roadway network infrastructure facing both more frequent maintenance and major rehabilitation projects. Road-operating organizations across the nation are increasingly motivated to reduce congestion impacts resulting from road work, particularly on roadways where congestion is already a recurrent feature even before road work begins. This book provides a work zone analysis and work zone modeling and simulation from traffic analysis tools volumes.

**Slot-Controlled Airports: Congestion, Capacity and Competition Issues**  
**Owen M. Whitaker**  
In series: *Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit*  
Hardcover: 978-1-62948-350-4. $110.00.  
e-book: 978-1-62948-351-1. $110.00.  
To help manage airport congestion, airlines operating at four U.S. airports—Washington’s Reagan National and the three major New York City area airports—must obtain operating authorizations called slots from the FAA to take off or land. Airlines operating out of Reagan National also may not operate flights beyond a 1,250-mile perimeter without congressional approval. In addition to the 24 flights (12 round trips) previously approved, Congress recently authorized 16 more beyond-perimeter flights (8 round-trips) at Reagan National—flights that the airport authority fears will adversely affect Reagan National and the authority’s ability to continue servicing its debt. Some airlines seeking to serve slot-controlled airports assert that slot control rules cause the airports to be underutilized or used inefficiently. This book reviews the effects of adding more beyond-perimeter flights from Reagan National; and how well slot control rules are working to reduce congestion, while maximizing capacity and encouraging competition. Also discussed are slot allocation and airline schedule data using a statistical model, and interviews with FAA officials and others.

**Tools to Combat Impaired Driving: Enforcement Visibility and Source Investigations**  
**Sam C. Whatley**  
In series: *Safety and Risk in Society*  
Research has shown that an effective way to reduce impaired driving is to increase the perceived risk of being stopped and arrested by law enforcement if driving while impaired. One of the most successful strategies for doing this is the coupling of intense and highly visible enforcement with publicity about the enforcement campaign. The term “high-visiblity enforcement” (HVE) is used to describe law enforcement efforts aimed at deterring unsafe driving behavior by increasing the public’s perception of being caught, arrested, and prosecuted. Two common enforcement strategies of HVE operations are sobriety checkpoints and saturation patrols. Checkpoints concentrate law enforcement officers at the roadside to identify impaired drivers passing through. Saturation patrols involve an increased number of officers patrolling a limited area where impaired driving is prevalent. Both use highly visible elements (such as a concentration of law enforcement officers, bright lights, signs, and marked patrol cars) to heighten their visual impact. Enforcement efforts must be supported by an equal amount of publicity and communications. Publicity regarding the operations also raises awareness, and the perception of increased likelihood of detection of impaired driving. Research has indicated that HVE operations that are well-publicized, conducted frequently, and have high visibility deter impaired driving. This book presents case studies of HVE programs currently operating in the United States and includes discussion of the HVE program’s history, enforcement strategies, visibility elements, operation, resources, use of media, educational components, funding, support from political leaders and the community, barriers encountered, and strengths of the program. This book is intended to provide information on impaired driving HVE programs for regional, state and local agencies considering incorporating HVE strategies into their efforts to curb impaired driving or to modify existing HVE programs.
Traffic Sign Conspicuity: Selected Analyses
Antoine Bricker
In series: Transportation Issues, Policies and R&D
Hardcover: 978-1-63117-160-4. $110.00.
This book may be of use to traffic engineers and researchers who are concerned with the conspicuity of traffic signs. The Manual on Uniform Traffic Control Devices advises that, “Signs should be placed on the right side of the roadway where they are easily recognized and understood by road users.” Guidance is provided on the spacing and prioritization of signs, and in some conditions, additional steps may be needed to ensure that signs are conspicuous. This book also provides federal regulations that have been put in place to ensure that traffic signs are visible at night, and discusses impacts on state and local agencies of maintaining traffic sign retroreflectivity.

Transit Asset Management: Guidance and Analysis
Michelle Calvillo
In series: Transportation Issues, Policies and R&D
For some time, the Federal Transit Administration (FTA) and the U.S. transit industry have been working to improve the understanding and practice of transit asset management. There is considerable evidence that this is a critical area of focus. Improving transit asset management is now a national policy. To advance transit asset management, this book provides a transit-specific asset management framework for managing assets individually and as a portfolio of assets that comprise an integrated system. The book provides flexible, yet targeted guidance to advance the practice and implementation of transit asset management. This book also examines the extent to which selected transit agencies follow leading asset management practices to prioritize capital investments, and challenges in using these practices, the extent to which these agencies measure the effects of capital investments, and FTA initiatives to support transit agencies’ use of leading practices.

U.S. Transit, Transportation and Infrastructure: Considerations and Developments, Volume 4
Jordan G. Clark and Ian R. Rodriguez
In series: U.S. Transit, Transportation and Infrastructure: Considerations and Developments
2013. 166 pp.
Hardcover: 978-1-62948-507-2. $110.00.
Policymakers at all levels of government are debating a wide range of options for addressing the nation’s faltering economic conditions. One option that is once again receiving attention is accelerated investments in the nation’s public infrastructure - that is, highways, mass transit, airports, water supply and wastewater, and other facilities - in order to create jobs while also promoting long-term economic growth. This book examines policy issues associated with using infrastructure as a mechanism to benefit economic recovery. Discussed are airline passenger rights and the federal role in aviation consumer protection; an overview of the federal public transportation program; improved guidance in federal-aid highways which could enhance the states’s use of life-cycle cost analysis in pavement selection; passenger rail security and consistent incident reporting and analysis to achieve program objectives; and the TSA explosives detection canine program.

United States
Congressionally Chartered Organizations: Background and Considerations
Marlin Sotello
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-63117-259-5. $110.00.
A congressional or federal charter is a federal statute that establishes a corporation. Congress has issued charters since 1791, although the chartering by Congress of organizations with a patriotic, charitable, historical, or educational purpose is essentially a 20th century practice. Congress has used charters to create a variety of corporate entities, such as banks, government-sponsored enterprises, commercial corporations, venture capital funds, and quasi-governmental entities. Congressionally chartered corporations have raised diverse issues for Congress. This book provides an overview on Congressional and federal charters; Congressionally chartered nonprofit organizations; federal government corporations; hybrid organizations with both government and private sector legal characteristics; and key principles for leveraging non-federal resources in Congressionally chartered organizations.

Distribution of Household Income and Federal Taxes: 2008-2010
Travis Honeyfield
In series: Congressional Policies, Practices and Procedures
Softcover: 978-1-63117-264-9. $52.00.
The recent recession has had a substantial impact on income, the amount of taxes owed, and average tax rates. In this book, the Congressional Budget Office (CBO) extends its estimates of the distribution of household income and federal taxes through 2008 and 2009, the latest year for which comprehensive data are available, and compares those estimates with estimates for 2007 and for the 1979–2009 period. This book also presents the CBO's estimates of the distribution of household income and federal taxes in 2010, and it compares those estimates with estimates for the preceding three decades. Furthermore, this book discusses the effects of changes in tax rules on the distribution of federal taxes in 2013.

Federal Intelligence Spending: Elements and Considerations
Adaline Cortez
In series: Intelligence and Counterintelligence Studies
2014. 120 pp.
Softcover: 978-1-63117-037-9. $52.00.
e-book: 978-1-63117-048-5. $52.00.
Appropriations for intelligence activities represent a significant part of both the federal and defense budget at a time of growing fiscal austerity. In the past, spending levels for intelligence activities were shrouded in secrecy. Today, overall totals of intelligence spending are made public, but the process for appropriating funds for intelligence activities remains complicated and not well understood. This book discusses the historic trend in intelligence spending, provides a broader issues concerning the intelligence budgeting process, and discusses intelligence issues for Congress.
Federal Vehicle Fleets: Selected Analyses
Chloe Milazzo
In series: Congressional Policies, Practices and Procedures
Federal agencies (excluding the U.S. Postal Service) spend about $3 billion annually to acquire, operate, and maintain about 450,000 civilian and non-tactical military vehicles. Agencies may lease or buy vehicles from GSA, which also issues requirements and guidance on fleet management. In recent years, Congress and the President have raised concerns about the size and cost of federal agencies’ fleets. In 2011, the President directed agencies to determine their optimal fleet inventories and set targets for achieving these inventories by 2015 with the goal of a more cost-effective fleet. This book discusses the notion of adopting leading practices and how they could improve management of federal vehicle fleets; overall increase in number of vehicle masts that some agencies decreased their fleets; and strategies needed to address aging delivery fleet.

Foreign Investment in the U.S.: Economic Analyses and Security Considerations
Theodore L. Newell
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-62948-930-8. $110.00.
The United States has been the world’s largest recipient of foreign direct investment (FDI) since 2006. Every day, foreign companies establish new operations in the United States or provide additional capital to established businesses. With the world’s largest consumer market, skilled and productive workers, a highly innovative environment, appropriate legal protections, a predictable regulatory environment, and a growing energy sector, the United States offers an attractive investment climate for firms across the globe. This book focuses on the foreign direct investment in the United States. It provides an economic analysis of foreign direct investment in the United States, discusses federal statutory restrictions, analyzes economic considerations on foreign investment and national security, and finally, focuses on the committee on foreign investment in the United States.

Free Trade Agreements: Selected Analyses from NAFTA to the Trans-Pacific Partnership
Jenell Gallo
In series: American Political, Economic, and Security Issues
Hardcover: 978-1-63117-366-0. $135.00.
The North American Free Trade Agreement (NAFTA) entered into force on January 1, 1994. The overall economic impact of NAFTA is difficult to measure since trade and investment trends are influenced by numerous other economic variables, such as economic growth, inflation, and currency fluctuations. NAFTA continues to be of interest to Congress because of the importance of Canada and Mexico as U.S. trading partners, and also because of the implications NAFTA has for U.S. trade policy. This book provides an overview of North American trade liberalization before NAFTA, an overview of NAFTA provisions, the economic effects of NAFTA, and policy considerations. It also examines the provisions of the U.S.-South Korea Free Trade Agreement (KORUS FTA) in the context of the overall U.S.-South Korean economic relationship, U.S. objectives, and South Korean objectives. The book examines some of the issues that have arisen during the implementation of KORUS FTA, and analyzes the issues related to the proposed Trans-Pacific Partnership (TPP), the state and substance of the negotiations, the specific areas under negotiation, the policy and economic contexts in which the TPP would fit, and the issues for Congress that the TPP presents.

Indian Sacred Sites: Balancing Protection Issues with Federal Management
Christopher N. Griffiths
In series: America in the 21st Century: Political and Economic Issues
Hardcover: 978-1-62808-284-5. $110.00.
In 2010, Secretary of Agriculture Thomas J. Vilsack directed the U.S. Department of Agriculture’s (USDA) Office of Tribal Relations and the USDA’s Forest Service to engage in a dialogue with American Indians and Alaska Native (AI/AN) Tribal leaders to find out how the USDA can do a better job of accommodating and protecting AI/AN sacred sites while simultaneously pursuing the Forest Service’s multiple-use mission. Secretary Vilsack requested information about unintended consequences of land management decisions affecting sacred sites and AI/AN communities whose cultural survival is often deeply rooted in these sites. This book examines the effectiveness of existing laws and regulation in ensuring a consistent level of sacred site protection that is more acceptable to tribes.

NSA Intelligence Collection, Leaks, and the Protection of Classified Information: Background and Issues
Simon Cepeda
In series: Intelligence and Counterintelligence Studies
2014. 146 pp.
Hardcover: 978-1-62948-937-7. $110.00.
e-book: 978-1-62948-949-0. $110.00.
Media stories about National Security Agency (NSA) surveillance pertain to the unauthorized disclosures of two different intelligence collection programs. These programs arise from provisions of the Foreign Intelligence Surveillance Act (FISA). However, they rely on separate authorities, collect different types of information, and raise different policy questions. This book provides background and issues for Congress with NSA surveillance leaks; provides a primer on some of the fundamental aspects of the security clearance process, using a “frequently asked questions” format; discusses criminal prohibitions on the publication of classified defense information; the legal framework of the protection of classified information; and practices and proposals of the protection of classified information by Congress.

Recess Appointment Power: Implications and Analyses of Noel Canning v. NLRB
Chase N. Morrison
In series: Laws and Legislation
2014. 121 pp.
Softcover: 978-1-62948-675-8. $52.00.
e-book: 978-1-62948-682-6. $52.00.
Under the Appointments Clause, the President is empowered to nominate and appoint principal officers of the United States, but only with the advice and consent of the Senate. In addition to this general appointment authority, the Recess Appointments Clause permits the President to make temporary appointments, without Senate approval, during periods in which the Senate is not in session. This book begins with a general legal overview of the Recess Appointments Clause and a discussion of applicable case law that existed prior to the D.C. Circuit’s decision in Noel Canning. In Noel Canning v. National Labor Relations Board, the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) ruled that President Obama’s
appointments of three Members to the National Labor Relations Board (NLRB) were constitutionally invalid. This book focuses on the ramifications of the Noel Canning decision might have on the President’s authority to make recess appointment by providing a legal analysis of Noel Canning and the applicable case law that existed prior to that decision. The U.S. Constitution explicitly provides the President with two methods of appointing officers of the United States. This book also provides an overview of the Recess Appointments Clause, exploring its historical application and legal interpretation by the executive branch, the courts, and the Comptroller General. It also reflects on the U.S. Court of Appeals for the D.C. Circuit’s decision in Noel Canning v. Nat’l Labor Relations Board, which held that the President’s three recess appointments to the National Labor Relations Board (NLRB) were invalid.

Rural America: Aspects, Outlooks and Development. Volume 4
Clyford L. Lewis and Eric M. Jackson
In series: Rural America: Aspects, Outlooks and Development
e-book: 978-1-62948-767-0. $195.00.
In the Patient Protection and Affordable Care Act of 2010, the Congress required that the Commission report on rural Medicare beneficiaries’ access to care, rural providers’ quality of care, special rural Medicare payments, and the adequacy of Medicare payments to rural providers. In addition to the findings presented on each of the four topics, this book presents a set of principles designed to guide expectations and policies with respect to rural access, quality, and payments for all sectors. This book also discusses multi-enterprising farm households and the importance of their alternative business ventures in the rural economy. The United States Department of Agriculture (USDA) administers the greatest number of rural development programs and has the highest average of program funds going directly to rural counties (approximately 50%). An overview of the USDA rural development programs is provided in this book.

Social Security Disability Insurance: Policy Options and Reform Proposals
Harvey Daniels
In series: Laws and Programs
Softcover: 978-1-62948-776-2. $52.00.
Social Security Disability Insurance (SSDI) program provides benefits to insured workers with disabilities under the full retirement age and their dependents based on an individual worker’s earnings and work history in covered employment. Recently, some Members of Congress and the public have expressed concern over the financial sustainability of the SSDI program. This book provides an overview of reform proposals designed to mitigate the growth in SSDI rolls. Most of the proposals discussed in this book focus on reducing the inflow (incidence) of new beneficiaries into the program. The authors also focus on information on two components of federal disability benefits, those provided through the Social Security Disability Insurance (SSDI) and the Supplemental Security Income (SSI) programs, policy options for the social security disability insurance program and provide a testimony of David C. Stapleton on securing the future of the social security disability program.

Sarah Brackman
In series: Taxes in the United States: Developments, Analysis, and Research
Hardcover: 978-1-62808-378-1. $110.00.
This book examines the most recent developments, analysis and research concerning taxation in the United States. Topics discussed in this compilation include corporate tax expenditures and information on estimated revenue losses and related federal spending programs; taxing businesses through the individual income tax; refundable tax credits; the ability of unauthorized aliens to claim refundable tax credits; and master limited partnerships as a policy option for the renewable energy industry.

Taxes in the United States: Developments, Analysis, and Research. Volume 1
Sarah Brackman
In series: Taxes in the United States: Developments, Analysis, and Research
Hardcover: 978-1-62417-834-4. $135.00.
This book examines the most recent developments, analysis and research concerning taxation in the United States. Topics discussed in this compilation include the constitutionality of retroactive tax legislation; tax provisions to assist with disaster recovery; the impact of the federal estate tax on state estate taxes; effective marginal tax rates for low- and moderate-income workers; and the taxation of capital and labor through the self-employment tax.

Taxes in the United States: Developments, Analysis, and Research. Volume 3
Sarah Brackman
In series: Taxes in the United States: Developments, Analysis, and Research
2013. 190 pp.
Hardcover: 978-1-63117-278-6. $110.00.
This book examines the most recent developments, analysis and research concerning taxation in the United States. Topics discussed in this compilation include the potential federal tax implications of United States v. Windsor; effects of a carbon tax on the economy and the environment; the distribution of major tax expenditures in the individual income tax system; corporate income tax; and appraised values on tax returns.

U.S. Circuit and District Court Nominations: Analyses of Obama and Predecessors
Eileen G. Wiseman
In series: Congressional Policies, Practices and Procedures
Hardcover: 978-1-62948-936-0. $52.00.
e-book: 978-1-62948-952-0. $52.00.
The process by which lower federal court judges are nominated by the President and considered by the Senate has, in recent decades, been of continuing interest to Senators. During recent Senate debates over judicial nominations, differing perspectives have been expressed about the relative degree of success of a President’s nominees in gaining Senate confirmation, compared with nominees of other recent
Presidents. This book provides a statistical analysis of nominations to U.S. circuit and district court judgeships during the first terms of President Obama and his four most recent predecessors.

U.S. Trade: Focus on Education, Healthcare, Legal, and Infrastructure Services

Carina Vincent

In series: Trade Issues, Policies and Laws
Hardcover: 978-1-63117-423-0. $195.00.

This book discusses developments in the United States’ exports and imports of professional services, with a focus on education, healthcare, and legal services. The United States continues to be a world leader in professional services, which generated a cross-border trade surplus of nearly $50 billion in 2011. The expansion of professional services trade in recent years has been driven by a number of factors. Globalization, including businesses setting up operations in foreign markets, has created trade opportunities for diverse professional services providers, such as legal and management consulting professionals. This book focuses on United States trend reports from 2012 and 2013.

Veterans Education Benefits: Analyses and Student Outcomes

Paige S. Cohen and Susan Pemberton

In series: Military and Veteran Issues

Softcover: 978-1-62948-186-9. $52.00.

In fiscal year 2012, various VA education programs provided nearly $11 billion in education payments to almost 1 million veterans. The 2008 Post-9/11 GI Bill significantly increased education benefits for veterans and provided separate payments for tuition and fees, for housing expenses, and for books. In fiscal year 2012, VA made about $8.5 billion in tuition, housing, and other payments under the Post-9/11 GI Bill. This book reviews data on the VA’s education programs. Specifically, the distribution of VA education payments among schools; how student characteristics and outcomes at highly VA-funded schools compare to those of other VA-funded schools; and how student characteristics and outcomes compare at highly VA-funded public, nonprofit, and for-profit schools.


Timothy C. Roberts

In series: Veterans: Benefits, Issues, Policies and Programs
Hardcover: 978-1-63117-046-1. $110.00.

This book provides an overview of the benefits, issues, policies and programs relating to our military service members. Topics discussed in this issue include health care for rural veterans; further actions needed to collaborate on providing health care to Native American veterans; trends and programs of employment for veterans; the VA vocational rehabilitation and employment program; and includes frequently asked questions on military funeral honors and military cemeteries.
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- International Journal of Mathematics, Game Theory and Algebra
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- International Journal of Theoretical Physics, Group Theory and Nonlinear Optics
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- Journal of Information, Intelligence, and Knowledge
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- Journal of Psychiatric Administration and Management