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BIOLOGY AND MEDICINE
AGING

Are Chronic Degenerative Diseases Part of the Ageing Process? Insights from Comparative Biology
Michael A. Singer (Faculty of Health Sciences, Queen’s University, Ontario, Canada)
In series: Aging Issues, Health and Financial Alternatives
Hardcover: 978-1-62618-013-0. $195.00.
e-book: 978-1-62618-021-5. $82.00.
Most of the DNA in the human genome does not encode proteins but is involved in regulatory functions. In addition, the human genome is characterized by an extensive array of structural DNA variants arising from de novo mutations plus accumulated structural variants transmitted through an individual’s lineage. The result is that each person has a unique genome which is expressed as that person’s unique phenotype. Ageing can be understood on both the species and individual level. Each species has a programmed ageing and mortality pattern, but within those broad species-specific boundaries there is considerable individual variation. At the individual level, ageing reflects the integrated effects of that individual’s unique mix of DNA structural variants, unique experience-specific epigenetic marks and imperfectly repaired genomic and cellular damage. This book examines human “chronic degenerative” diseases which are not diseases, but rather variations of the ageing process across individuals.

ANATOMY AND PHYSIOLOGY

Focused Neuroanatomy for Medical Students
Or Cohen-Inbar, M.D., Ph.D. (Department of Neurosurgery and Gamma-Knife Center, University of Virginia Health Care Center, Virginia, USA)
In series: Neuroanatomy Research at the Leading Edge
Hardcover: 978-1-63482-298-5. $190.00.
e-book: 978-1-63482-321-0. $190.00.
The grasp of neuroanatomy, maybe more than in other organ systems, is closely related to function, neurophysiology and neuro-biochemistry. Its understanding requires a working knowledge of the pivotal neuro-embryological events as well as a working knowledge of general anatomy. For these reasons, it remains one of the greatest challenges, both for the aspiring student and for the dedicated mentor in the medical field. The span of books used as references in teaching neuroanatomy is either too detailed or too simplistic in their attempt to balance the time constraints against the key points for each subject. In addition, since the field of neuroscience is currently at the forefront of research, many of the textbooks that are available are written by researchers rather than clinicians, and as a result they tend to suffer a lack of clinical focus. This book, written by a tutor of neuroanatomy and a practicing neurosurgeon, attempts to offer a better balance and a more useful formula. This book is composed for the medical student, relying on comments from past medical students. The book begins with an introduction chapter which discusses the organization of the nervous system, anatomical planes, introduction to neuro-embryology, as well as relevant scalp and skull anatomy. The next succeeding six chapters discuss the central nervous system regionally. Each chapter begins with the key embryological processes that shape the anatomy and function of that region. The gross anatomical description is followed by a short discussion of microscopic anatomy, gray and white matter anatomical features, major connections and key clinical correlations. The next three chapters tackle specific problematic topics separately. The meninges, the cerebrospinal fluid and the lateral ventricles are discussed first, followed by an overview of the cerebral blood supply. A unique chapter focusing on specific skull base complex structures, such as the cavernous sinus region, the sphenoid sinus, and the jugular foramen is subsequently presented. The book ends with two chapters presenting the special sensory senses, vision and audition. These chapters are organized in a system rather than in regional anatomy forms, with an in-depth discussion of related anatomical features.

Pediatric and Adult SinoNasal Disorders
Ramzi Tamer Younis and Ralph Abi Hachem (Division of Pediatric Otolaryngology, Department of Otolaryngology, Head and Neck Surgery, University of Miami, USA)
In series: Otolaryngology Research Advances
Hardcover: 978-1-63482-222-0. $190.00.
The past two decades have witnessed enormous advances in the field of rhinology and sinonasal diseases. Chronic Sinusitis is one of the most common chronic illnesses. The introduction of functional endoscopic sinus surgery in the late eighties has revolutionized the surgical approach to sinus disease. Since that time, endoscopic sinus surgery has become the surgical procedure of choice and has been adopted for training and teaching. Furthermore, the approach to sinus disease has significantly evolved. We have witnessed the introduction of balloon sinuplasty, image guided surgery, multidisciplinary approach and the promotion of evidence based medicine and guidelines. The essence of any surgical technique or any guideline is based on the wealth of knowledge of anatomy and physiology. This book details the explicit anatomy and pathophysiology of the various sinuses. Special emphasis has been made on pediatric sinus diseases since it is a topic that has not been well covered and mandates further understanding. This unique book can form a roadmap for the otolaryngologist in training, medical students practicing otolaryngologist in private or academic sector and paramedical personnel. The target and scope go beyond otolaryngology to attract the attention of any pediatrician, general practitioner or family medicine specialist. The chapters have been well-written not only to detail the importance of each structure and pathophysiological mechanisms, but also to make it easily understandable for all readers at different levels. The authors have been selected from panels of nationally and intellectually acknowledged experts. The wealth of information in this book has exhausted the efforts of brilliant and well-established, experienced and academically prominent leaders in their fields. All chapters are not only written in easy-to-read detailed paragraphs, but are also illustrated with radiographic and surgical figures adding a live interpretation to the abstractive sentences. It is our hope that this text will serve as a comprehensive contemporary guide and reference to all students and practitioners that aim to widen their horizon of learning, revive their illustrative and descriptive memory of knowledge and improve their expertise.

The Big Slide: The Digestive System from Top to Bottom
Nicholas F. Prayson and Richard A. Prayson (Case Western Reserve University School of Medicine and Cleveland Clinic Department of Anatomic Pathology, Cleveland, OH, USA)
In series: Human Anatomy and Physiology
Softcover: 978-1-63482-840-6. $82.00.
The human digestive system plays an important role in processing food in order to provide nutrients that the body can use. This well-illustrated text presents the basics of anatomy, physiology and disease of the human digestive system by answering a series of questions relevant to
the various components of this system. For example, in studying the stomach, the following questions are examined: 1) Where is the stomach located? 2) What does the stomach look like? 3) What does the stomach do? 4) Where do gastric juices come from? 5) What causes ulcers? 6) What causes a stomach ache? and 7) What causes burping? Additionally, most chapters are filled with unusual trivia related to the part of the body being discussed. For example, there was a 42-year-old woman who complained of mild abdominal pain and had 2533 objects removed from her stomach, including 947 pins. The text provides a fun and interesting way to learn more about the digestive system. The text is ideal, whether you are looking for an entertaining and informative read on the workings of the human digestive tract or looking for a text or resource for biology or health classes.

**ANIMAL SCIENCE**

*Innovative Ethno Veterinary Practices in the Control of Newcastle Disease and Helminthosis in Poultry in South Western Uganda*

*Charles Laga and Frederick I. B Kayanja (Biography Department, Faculty of Science, Mbarara University of Science and Technology, Mbarara, Uganda)*

In series: *Veterinary Sciences and Medicine*


Hardcover: 978-1-63117-299-1, $95.00.

e-book: 978-1-63463-395-6, $95.00.

Veterinary medicine has its pillars in biology, applied biology, socio-economics, and applied biological sciences. Veterinary medicine is progressing quickly given the depth of the discipline in natural and applied life sciences. This book demonstrates new developments covering a wide range of content, and also covers conventional veterinary medicine as well as seeks to expound knowledge on endemics to control of livestock diseases. Newcastle disease and helminthosis are among the diseases that affect poultry severely, often leading to mortality and decreased productivity. This book contains scientific articles that try to explain advances of ethno-veterinary medicine, which is an alternative to conventional veterinary medicine. This book is divided into main sections and subsections. It unleashes information on the current advances in different veterinary science applications. Furthermore, it is now close to over 252 years since the veterinary profession came into existence. This book enriches a remarkable and enjoyable reflection on the holistic and integrated innovative science of veterinary medicine.

**BIOCHEMISTRY**

*Eicosanoids, Inflammation and Chronic Inflammatory Diseases: Pathophysiology, Health Effects and Targets for Therapies*

*Carmela Rita Balistreri, Ph.D. (Department of Pathobiology and Medical Biotechnologies, University of Palermo, Palermo, Italy)*

In series: *Biochemistry and Molecular Biology in the Post Genomic Era*


Hardcover: 978-1-63482-799-7, $190.00.

e-book: 978-1-63482-842-0, $190.00.

Eicosanoids constitute a large and expanding family of bioactive lipids synthesized from polyunsaturated fatty acids (PUFAs) to either pro-inflammatory omega-6 arachidonic acid (AA) or anti-inflammatory omega-3 eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). In these last cases, two essential fatty acids (FAs) (ω-6 linoleic acid (C18:2n6) and ω-3 linolenic acid (LA) (C18:3n3) utilized as substrates and a series of desaturase and elongase enzymes are essential for their production. Among these different members, the AA-derived eicosanoids operate as potent signaling mediators that provide an efficient way for cells to respond to various stimuli. As a result, they act as part of a complex regulatory network and control a number of important physiological processes. Some of these processes include: • smooth muscle tone • vascular permeability • platelet aggregation • broncho-constriction/dilation • intestine motility • inhibition of gastric acid secretion • uterus contraction • kidney filtration renal blood flow • an increase in hypothalamic • pituitary hormone secretion. Their action is mediated through the binding to specific G-protein-coupled membrane receptors. These receptors can trigger a flux in the rate of cysytolic second messenger generation (cAMP or Ca2+), activation of specific protein kinases or changes in membrane potential. Different cellular types are involved in their production from classical inflammatory cells including polymorphonuclear leukocytes, macrophages (important producers) and mast cells to dentritic cells that represent both a source and target of AA-derived eicosanoids. In addition, human activated T and B cells produce significant amounts of eicosanoids, particularly prostaglandins such as PGD2 and PGF2. This propriety might be principally central to several functions of B cells. However, AA-derived eicosanoids also constitute the optimal amount of immune/inflamatory responses by mediating their effects on macrophages, mast cells, dentritic cells, lymphocytes and natural killer cells. Thus, they are also able to exert both the evokation of immune responses and immune-modulation. In addition to their capacity to elicit biological responses, eicosanoids (in particular AA-derived eicosanoids) are now understood to regulate immunopathological processes ranging from inflammatory responses to chronic tissue remodeling, obesity, insulin resistance, diabetes, and atherosclerosis. Allergic diseases, cardiovascular complications (i.e. coronaropathies, aneurysm, etc.), cancer, rheumatoid and autoimmune disorders are additional bodily functions affected as well. A genetic basis has been postulated for susceptibility to each of these diseases. Each of these medical conditions are syndromic; that is, they are caused by more than one molecular defect. On the other hand, they are multifactorial diseases. Recently, it has been suggested that genetic variants of eicosanoid pathways have a role in the risk of these diseases. Their combinations have been observed in patients affected by these maladies. Thus, they might be used as promising biomarkers in a pre- and post-treatment clinical setting. Indeed, their identifications may hold promise for the realization of a personalized medicine. The evidence is growing in terms of the role eicosanoids play in tissue regeneration and wound healing. It is also interesting how a Mediterranean diet might be suggested as an advantageous and new form of anti-inflammatory therapy. This implies the possibility of using eicosanoids as both health and disease biomarkers and to consider them as potential therapeutic targets. Many of these aspects are summarized in this book. The data described is based on expert opinion derived from the findings of studies on aging, age-related diseases and inflammation.

**Internal Rotation in Molecular Crystals: Computational Studies**

*Xianlong Wang (University of Electronic Science and Technology of China)*

In series: *Biochemistry and Molecular Biology in the Post Genomic Era*


Hardcover: 978-1-63482-214-5, $190.00.


The study on molecular motors is a hot research topic in the current era of nanotechnology. Internal rotation is a ubiquitous motion in most molecules and is considered a bridge to interconnect different energy forms. This monograph is focused on the computational studies on the molecular dynamics of the internal rotation of methyl, tert-butyl...
and trifluoromethyl groups on aromatic compounds in both isolated molecules and crystalline solids. The methodology and results presented in this book provide the readers a fundamental understanding of factors that affect the molecular rotors. Additionally, not only isolated molecules were studied, but molecular crystals were also simulated using cluster models consisting of 300–500 atoms which were constructed from the high quality X-ray crystallographic structures. Thus, through the comparative studies, the role of intra- and intermolecular interactions for their contributions to the rotational barriers was investigated. The computational results were also compared with the values from experimental studies, such as nuclear magnetic resonance relaxation measurements at variable temperatures.

**BIOLOGY**

**Microbiological Clinical Hygiene**

*Eino Elias Hakalehto (Department of Environmental Studies, University of Eastern Finland, Kuopio, Finland)*

In series: *Microbiological Hygiene*

Edited by: *Eino Elias Hakalehto, Ph.D. (Institute of Biomedicine, University of Eastern Finland, Kuopio, Finland)*


This book describes the issues of human health and healthcare from the point of view of hygiene monitoring and maintenance. Also, the perspectives on the effects of microbial cell structures, metabolism, communities and interactions on health and hygiene are included. Besides microbiological screening of patients, surfaces, air space etc. this book introduces some key bacteriological, virological and fungal risks in the clinical setting. It describes routes of contamination inside hospitals, and into our body. The means for prevention of the spreading of unwanted microbes are presented as well. Protection mechanisms of the bodily system and the balances of the human microbiome are discussed with respect to intrusions via the respiratory or digestive systems or damaged skin. The risks during operations or invasive treatments are highlighted, together with means for avoiding them. Examples of biofilm formation on the devices or on the body surfaces, latent infections, contagion mechanisms, as well as prevalent risks such as mycobacterial infections, antibiotic resistant strains, intracellular pathogens, nosocomial viruses, lowered host defenses, Clostridium difficile, salmonellas, legionellas are included in the chapters of this book. Important developments such as personalized medicine, point-of-care diagnostics, arthroscopy, improved drug delivery, pre- and probiotic treatments, monitoring of the normal flora and its beneficial effects are also discussed.

**CANCER**

**A Comprehensive Textbook of Brain Metastases**

*Maurizio Salvati, Alessandro Frati, Alessandro D’Elia and Vincenza Maiola (Department of Neurological Sciences, Neurosurgery & IRCCS NEUROMED INM, Sapienza University of Rome, Italy)*

In series: *Cancer Etiology, Diagnosis and Treatments*


Hardcover: 978-1-63482-294-7. $190.00.

e-book: 978-1-63482-318-0. $190.00.

Brain metastases are frequently encountered in the neuro-oncological field. It has been estimated that 170,000 people a year in the USA experience this condition. Moreover, brain metastases are four times more frequently encountered than primitive cerebral tumors, and will increase in the future due to systemic cancer patients management. This book presents current biological viewpoints, together with diagnostic and therapeutic advances and options available for brain metastatic patients. Clinical daily-practice problems are systematically treated and scientific background is provided based on the personal experiences of prominent practitioners in the field, coming from different academic institutions. The impact of histopathology and the impact of technology on doctors’ practices, as well as systemic disease management, basi-cranial sited brain metastases and deep and eloquent brain localizations, are treated in a constant multidisciplinary fashion. This book is an essential instrument for neurosurgeons, radiation and medical oncologists, and neuro-oncologists, and we hope it will also help medical students and physicians in training.

**Cholangiocarcinoma**

*Giovanni Brandi, and Giorgio Ercolani (University of Bologna, Bologna, Italy)*

In series: *Cancer Etiology, Diagnosis and Treatments*


Hardcover: 978-1-63482-143-8. $310.00.


Cholangiocarcinoma presents a challenge for cancer specialists all over the world. Neoplasia of the biliary tract are rare, accounting for approximately 3% of all gastrointestinal tumours with an incidence of about three per 100,000; but rates have been rising rapidly in recent years. This cancer is one of the major killers: at the time of diagnosis, less than 30% of patients are candidates for complete resection. For unresectable cholangiocarcinomas, median survival is less than one year. Given the rarity of the disease, the literature on cholangiocarcinomas is scant. However, the increasing incidence of this highly lethal malignancy should capture the attention of physicians and stimulate further research. Designed for specialists, this book highlights the main clinicopathologic features of cholangiocarcinoma and is an essential clinical guide for oncologists, surgeons, radiotherapists, radiologists, gastroenterologists and all physicians taking care of patients with biliary tract cancers. This book offers an expert overview of the disease starting from the embryology and anatomy of the biliary tree. Each chapter provides a detailed up-to-date description of etiopathogenetic factors, epidemiology, histopathology, molecular biology and staging, emphasizing clinical features and standard approaches to biliary tract cancer, with a summary of recent literature evidence. The book also covers the diagnostic work-up and outlines the current status of imaging techniques with an overview of recent advances in surgery and locoregional and systemic therapy, in addition to the follow-up and palliative care of cholangiocarcinoma patients.

**Cholangiocarcinoma: Diagnosis and Treatment**

*Charles E. Ray, Jr, Ron Gaba and Martha-Gracia Knuttin (University of Illinois at Chicago, Chicago, IL, USA)*

In series: *Cancer Etiology, Diagnosis and Treatments*


Hardcover: 978-1-63482-446-0. $190.00.


Cholangiocarcinoma is a devastating illness with poor long-term survival. The diagnosis and treatment of cholangiocarcinoma is becoming increasingly important, particularly with the increasing incidence of hepatocellular carcinoma, another primary liver tumor. Since the diagnosis, treatment, and prognosis of the two similar malignancies vary tremendously, a thorough understanding of cholangiocarcinoma is vital for any practitioner dealing with this patient population. The diagnosis and treatment of patients with this
disease requires input from nearly every specialist in cancer care: pathologists, diagnostic radiologists, hepatologists, endoscopists, surgical oncologists, medical oncologists, radiation oncologists, and interventional radiologists, who all play a very active role in the management of this disease process. The intent of this book is to provide an overview of the entire disease process, from the diagnosis through imaging and pathology, to the clinical care of patients pre- and post-treatment, to primary oncologic interventions.

**Cholangiocarcinoma: From Diagnosis to Treatment**

*Dario Ribero and Timothy M. Pawlik (Director, Division of Hepatobiliary and Pancreatic Surgery, European Institute of Oncology, Milan, Italy)*

In series: *Cancer Etiology, Diagnosis and Treatments* 2015. 475 pp.

Cholangiocarcinoma is a heterogeneous group of neoplasms, which has a rising worldwide incidence. Therefore, it is now a major cause of cancer mortality. Diagnosis, staging, treatment approaches and outcomes differ significantly based on the location of the tumor. Given the challenges of remaining up-to-date in a rapidly expanding field, the aim of this monograph is to provide a comprehensive, fully referenced presentation of the state-of-the-art medical and surgical aspects relevant to the management of cholangiocarcinoma divided by the site of origin (i.e. intrahepatic, hilar and distal). The division of the book into these sections reflects the biological and clinical differences between these tumor types and will permit the authors to address the diagnostic, interventional or treatment issues specific to each tumor type. By presenting all medical and surgical aspects of cholangiocarcinoma in a systematic manner, this monograph will be a ready-to-use instrument for those interested in cholangiocarcinoma, including practicing physicians, residents, fellows and specialists. A list of 66 world-renowned experts contributed to the book, offering the readers the unique opportunity to have a broad perspective on these diseases, practical indications on patient selection and treatment that can be easily applied to both Eastern and Western clinical settings.

**Encyclopedia of Lung Cancer**

*Andrea Hawkins*

In series: *Cancer Etiology, Diagnosis and Treatments* 2015. 318 pp.

This encyclopedia presents important research on lung cancer. Some of the topics discussed herein include therapeutic antibodies in non-small cell lung cancer; radiation therapy; genomics; paraneoplastic syndromes associated with lung cancer; palliative radiotherapy treatments; bone and lung metastases; and asymptomatic presentation of lung and bone metastases in patients with breast cancer.

**Fanconi Anemia and Oxidative Stress: Mechanistic Background and Clinical Prospects**

*Giovanni Pagano (Cancer Research Centre at Mecogliano (CROM), "Istituto Nazionale Tumori Fondazione G. Pascale," IRCCS, Naples, Italy)*

In series: *Cancer Etiology, Diagnosis and Treatments* 2015. 156 pp.

Fanconi Anemia (FA), a rare genetic disease featuring excess cancer risk and chromosomal instability, has received growing interest after the discovery that one of the defective genes in FA is associated with high-impact diseases such as familial breast cancer and ovary cancers. A well-documented relationship has accumulated in several decades and up to recently, studies have linked FA with a redox imbalance (oxidative stress, OS) in FA cells. The toxicity mechanisms of crosslinking agents (mitomycin C and diepoxybutane) in FA cells, along with the roles of OS-related aldehydes and glutathione in FA and in other diseases, are critically discussed. Also discussed is the proinflammatory state in FA phenotype. Additionally, recent studies have discovered an impairment in the structure and function of mitochondria in FA cell lines, while mitochondrial dysfunction in FA patients has so far been an unexplored field warranting ad hoc investigations. This book provides the readers with up-to-date information and perspectives on Fanconi anemia and oxidative stress that may prompt further elucidation of this intriguing disease, along with working hypotheses in clinical research and patients’ management.

**Fighting Lung Cancer with Conventional Therapies**

*Diego Márquez-Medina (Medical Oncologist, Lleida, Spain)*

In series: *Cancer Etiology, Diagnosis and Treatments* 2015. 394 pp.

Lung cancer, the most common and deadliest malignancy worldwide, is one of the biggest challenges for modern oncology. Although lung cancer presents the same incidence as breast or colorectal cancer, it causes as much deaths as breast and colorectal cancers together. Lung cancer demands our abilities as researchers, physicians, and care-givers in a multidisciplinary approach. Genetic, biology, pharmacy, pneumology, internal medicine, radiology, pathology, thoracic surgery, radiation, medical oncology and palliative care departments are essential members of the thoracic tumor boards. Fighting Lung Cancer through Conventional Therapies is the second volume of a saga entirely devoted to the treatment of lung cancer. In the age of targeted oncology, more than 90% of lung cancer patients are managed with conventional surgery, radiation, and chemotherapy only. Furthermore, 100% of them will need conventional treatments during the course of the disease. This volume updates indications, techniques, and applications of surgery, radiotherapy and chemotherapy in the treatment of lung cancer by an international team of experts. Included within these pages are: epidemiology and pathology; baseline and mediastinal staging; minimally invasive surgery, video-assisted thoracic surgery, and standard surgery in early-stage non-small cell lung cancer; radiation therapy for early non-small cell lung cancer; the management of locally advanced non-small cell cancer; applications of surgery to metastatic lung cancer; the new role of radiotherapy in metastatic non-small cell lung cancer; conventional chemotherapy as well as experimental therapies and combos with targeted therapies; the treatment of early and advanced small cell lung cancer; the role of palliative supportive care; and the integration of all those disciplines in multidisciplinary tumor boards are exhaustively reviewed.

**Head and Neck Cancer: Epidemiology, Management and Treatment Outcomes**

*Madison R. Hall*

In series: *Cancer Etiology, Diagnosis and Treatments* 2015. 176 pp.
Hardcover: 978-1-63482-113-1. $160.00.

Over 50,000 new cases of head and neck cancer are diagnosed each year in the United States. The majority of these are squamous cell carcinoma (HNSCC), associated with human papillomavirus infection and carcinogenic behaviors such as tobacco use and alcohol consumption. Although these are more common, there are several other causes that this book addresses. This book examines the epidemiology of head and neck cancer. It discusses the management of head neck cancer as well as treatment outcomes.
Horizons in Cancer Research. Volume 56
Hiroto S. Watanabe
In series: Horizons in Cancer Research
Hardcover: 978-1-63482-229-9. $190.00.
e-book: 978-1-63482-248-0. $190.00.
This book presents original results on the leading edge of cancer research. Topics discussed include malignancy-related ascites; targeting cathepsin b for cancer therapies; cancer stem cells; metallomics of brain tumors; hepatitis b virus and Hepatitis C virus infections and risk of pancreatic ductal adenocarcinoma; the risk and prognostic factors associated with undifferentiated nasopharyngeal carcinoma; widespread expressions of TCRs in cancer cells and the implications in cancer immunology; hormone therapy in young cancer survivors; and inhibitory effects of ribosome inactivating proteins and compounds on choriocarcinoma cells.

Horizons in Cancer Research. Volume 57
Hiroto S. Watanabe
In series: Horizons in Cancer Research
This book presents original results on the leading edge of cancer research. Topics discussed include the emerging roles of the Sirtuin family in cancer; coping with pain in children with leukemia; chemotherapy induced peripheral neurotoxicity; historical evolution of conservative surgery of breast cancer; peripheral neuropathies especially in cancer patients; the important pitfalls in the diagnosis of cancer in the oral cavity using 18F-FDG-PET-CT; anthracyclines and cardiotoxicity; current therapies and latest developments in cancer treatment; and the genetic and epigenetic changes in thyroid cancer.

Horizons in Cancer Research. Volume 58
Hiroto S. Watanabe
In series: Horizons in Cancer Research
Hardcover: 978-1-63482-627-3. $190.00.
e-book: 978-1-63482-628-0. $190.00.
This book presents original results on the leading edge of cancer research. Topics discussed include oral cancer cachexia; the immunological mechanisms of cachexia; research in gynecologic oncology today; advances in cellular understanding of muscle wasting in cachexia; and next generation sequencing developments in cancer research by bioinformatics approaches.

Horizons in Cancer Research. Volume 59
Hiroto S. Watanabe
In series: Horizons in Cancer Research
Hardcover: 978-1-63483-093-5. $190.00.
This book presents original results on the leading edge of cancer research. Topics discussed include imaging of chondrosarcoma; novel nutrient mixtures inhibiting chondrosarcoma invasion and metastasis parameters; defective estrogen signaling is the highest risk for breast cancer; review of the cancer genomic landscape; reprogramming of cancer stem cells like stem cells; promising natural products as anti-cancer agents against neuroblastoma; oncereceptivity; and molecular mechanisms involved in myelodysplastic syndromes.

Mantle Cell Lymphoma: Clinical Characteristics, Prevalence and Treatment Options
Charles L. Schmidt
In series: Cancer Etiology, Diagnosis and Treatments
Hardcover: 978-1-63482-363-0. $110.00.
Mantle cell lymphoma (MCL) is a subtype of Non-Hodgkin’s Lymphoma (NHL) with varying clinical presentations, ranging from indolent disease to highly aggressive symptoms. MCL represents approximately 3-10% of non-Hodgkin lymphomas, and has increased in incidence over the past several decades. The majority of patients respond to initial therapy, but remission duration is typically short. This book discusses the clinical characteristics of mantle cell lymphoma, as well as its prevalence and examines several treatment options available.

New Skin Toxicities for New Anticancer Therapies
Giulia Ganzetti, Anna Campanati and Annamaria Offidani (Dermatological Unit, Department of Clinical and Molecular Sciences, Polytechnic Marche University, Ancona, Italy)
In series: Dermatology - Laboratory and Clinical Research
Hardcover: 978-1-63482-224-4. $110.00.
Targeted cancer therapies have revolutionized the therapeutic management of many neoplasms, modifying patients’ prognosis and overall survival. These drugs block the cancer’s growth and spread by interfering with specific molecules which play a crucial role in the proliferation, differentiation and survival of cancer cells. Targeted therapies act selectively on specific molecular targets related to cancers, whereas most of the conventional chemotherapies act on all rapidly dividing normal and neoplastic cells. Moreover, targeted therapies are often cytostatic and non-cytotoxic as standard chemotherapies. Taken together, these aspects appear important in reducing systemic toxicity and ensuring an improved safety profile. The inhibition of epidermal growth factor receptor (EGFR), vascular growth factor (VEGF) and BRAF represents major achievements in research and development of solid tumors’ epithelial therapy. This class of biologics is currently widely used in the treatment of metastatic and unresponsive neoplasms of the colon, pancreas, lung, (NSCLC), breast, head and neck and melanoma. This book aims to emphasize skin toxicity associated with EGFR-, VEGF- and BRAF- inhibitors, focusing particularly on their clinical presentation, histopathological findings, and specific therapeutic options.

Palliative Radiation Therapy: Utilization of Advanced Technologies. Volume 1
Alysa M. Fairchild (Department of Radiation Oncology, Cross Cancer Institute, Edmonton, AB, Canada)
In series: Cancer Etiology, Diagnosis and Treatments
As the definition of palliative-intent radiation therapy (RT) continues to evolve, the application of advanced radiotherapeutic technologies, such as intensity-modulated RT, and techniques, such as image-guidance, are no longer the provision solely of the curative realm. Treatment options previously considered strictly palliative are expanding, with conventional RT being delivered in conjunction with other modalities such as highly conformal radiation, surgery or systemic therapy, or being bypassed entirely. Additionally, as the median survival rate for many primary cancer histologies improve, more and more patients are outliving the palliative benefit of their first course of RT, making reirradiation a commonly encountered scenario. Many factors should be taken into account when making RT treatment decisions, including those incorporating advanced technologies, such
as individualized considerations of symptom burden, extent of disease, life expectancy, performance status, comorbidities, toxicity, prior treatment, and patient wishes. However, while palliative RT should be appropriately customized for each patient, it should also have a convincing evidence base. To date, research investigating the optimal use of palliative RT has been strikingly underrepresented, especially considering it comprises up to 50% of a department’s workload. This book reviews state of the art in palliative radiation therapy across all disease sites, discussing available evidence supporting the use of advanced technologies and related clinical and dosimetric outcomes. Areas in which practice diverges from available evidence, as well as those in which no supporting evidence exists, are described. Many chapters include a historical overview highlighting lessons learned from past experience and techniques. Additionally, where specific palliative literature does not exist, generalizable excerpts from the curative setting are examined as well. Also, key practice points pertinent to management approaches and decisions, treatment planning and other clinical pearls are summarized by more than 60 international experts from three continents, often incorporating a multinational and/or multi-institutional perspective. A foundational chapter reviewing these technologies is complemented by sections on their use in each primary cancer site, along with chapters focusing on emerging techniques such as stereotactic radiation, clinical settings such as oligometastases, and patient-reported outcomes including quality of life and toxicity. Clinical trial methodology applicable to palliative RT, prognostication, health services research, and the interface of radiation oncology with palliative care in the 21st century are highlighted. Finally, a concluding chapter provides an overview of clinical contexts in which conventional radiation therapy or best supportive care may be favoured.

Palliative Radiation Therapy: Utilization of Advanced Technologies, Volume 2
Allysa M. Fairchild (Department of Radiation Oncology, Cross Cancer Institute, Edmonton, AB, Canada)
In series: Cancer Etiology, Diagnosis and Treatments
Hardcover: 978-1-63482-303-6. $190.00.
For survival patients, clinical settings such as the palliative intent radiation therapy (RT) continues to evolve, the application of advanced radiotherapeutic technologies, such as intensity-modulated RT, and technologies, such as image guidance, are no longer the provision solely of the curative realm. Treatment options previously considered strictly palliative are expanding, with conventional RT being delivered in conjunction with other modalities such as highly conformal radiation, surgery or systemic therapy, or being bypassed entirely. Additionally, as the median survival rate for many primary cancer histologies improve, more and more patients are outliving the palliative benefit of their first course of RT, making reinradiation a commonly encountered scenario. Many factors should be taken into account when making RT treatment decisions, including those incorporating advanced technologies, such as individualized considerations of symptom burden, extent of disease, life expectancy, performance status, comorbidities, toxicity, prior treatment, and patient wishes. However, while palliative RT should be appropriately customized for each patient, it should also have a convincing evidence base. To date, research investigating the optimal use of palliative RT has been strikingly underrepresented, especially considering it comprises up to 50% of a department’s workload. This book reviews state of the art in palliative radiation therapy across all disease sites, discussing available evidence supporting the use of advanced technologies and related clinical and dosimetric outcomes. Areas in which practice diverges from available evidence, as well as those in which no supporting evidence exists, are described. Many chapters include a historical overview highlighting lessons learned from past experience and techniques. Additionally, where specific palliative literature does not exist, generalizable excerpts from the curative setting are examined as well. Also, key practice points pertinent to management approaches and decisions, treatment planning and other clinical pearls are summarized by more than 60 international experts from three continents, often incorporating a multinational and/or multi-institutional perspective. A foundational chapter reviewing these technologies is complemented by sections on their use in each primary cancer site, along with chapters focusing on emerging techniques such as stereotactic radiation, clinical settings such as oligometastases, and patient-reported outcomes including quality of life and toxicity. Clinical trial methodology applicable to palliative RT, prognostication, health services research, and the interface of radiation oncology with palliative care in the 21st century are highlighted. Finally, a concluding chapter provides an overview of clinical contexts in which conventional radiation therapy or best supportive care may be favoured.

Photodynamic Therapy: Fundamentals, Applications and Health Outcomes
Adrian G. Hugo
In series: Cancer Etiology, Diagnosis and Treatments
Photodynamic therapy (PDT) is a well-established clinical modality for cancer, cardiovascular, ophthalmic, dermatological, and dental diseases. PDT is based on the activation of photosensitizer agents with specific wavelength of light, which results in energy transfer cascades that ultimately yield cytotoxic reactive oxygen species that can render cell death. This book discusses the fundamentals, applications and health outcomes of photodynamic therapy.

Prognostic and Predictive Response Therapy Factors in Cancer Disease (Colorectal, Breast, Liver, Lung, Gastric, Renal and Prostate Cancers)
Vincenzo Canzianieri and Massimiliano Berretta
(Division of Pathology, CRO Aviano National Cancer Institute, IRCCS Via Franco Gallini, Aviano, Italy)
In series: Cancer Etiology, Diagnosis and Treatments
Hardcover: 978-1-63463-545-5. $95.00.
e-book: 978-1-63463-553-0. $95.00.
Exploring prognostic and predictive response therapy factors in cancer disease is one of the most exciting issues of modern oncological science. Targeting intracellular signalling molecules is one of the novel approaches in which basic and translational researches meet clinical practice to define the best management of malignancies. The goal for target therapies is to identify agents that target tumor-specific molecules, thus sparing normal tissues. Those molecules are called biomarkers, and their identification is recommended for correct therapeutic planning. Hence, the contribution of clinical and surgical pathology to define cancer prognostic groups and treatment responsive tumors is essential not only for the efficacy of the cures, but also for ethical, economical, and social reasons. The promises of tailored (personalized) therapy are now almost certainly realistic and can give concrete hope to many cancer patients in the world. In this book, we have tried to describe the “state of art” in these fields of oncology, specifically considering prognostic and predictive response therapy factors in colorectal, breast, lung, gastric, renal, liver and prostate cancers.

Psychoneurocybernetic Conquest of Carcinogenesis and Cancers
Rudolf Klimek (Fertility Centre, Cracow, Poland)
In series: Cancer Etiology, Diagnosis and Treatments
Renal Cell Carcinoma

Jesus M Fernández-Gomez and Jorge Garcia-Rodriguez (Urologist, Department of Urology, Hospital Central of Asturias, Oviedo, Spain)

In series: Cancer Etiology, Diagnosis and Treatments


The book Psychoneurocybernetic Conquest of Carcinogenesis and Cancers is written to be understood by the informed layman as well as by scientists. It should be of special interest to physicians, health-care givers and laymen who want to know about the latest knowledge concerning the true cause of all cancers and their prevention, diagnosis and modern therapy. It will surely inform and entertain anyone who cares about ethics in medicine or the funding of medical research, including references to original scientific and popular literature. According to general (not only medical) knowledge, based upon personal experiences in conservative, surgical, thermo- and radiotherapy of neoplasms over many years, the authors have presented the dissipative nature of cancer so that everyone could understand the neoplastic diseases, the modern rules of psycho-oncology and the primary significance of one’s own lifestyle in the formation and progress of cancer along with importance of caring about the environment inhabited by people. They have summarized the public reactions to cancer and infertility in relation to the historic discovery of natural psychoneurocybernetic cause of cancer, mathematical interpretation of its cause, obstetrical prevention of human cancers and psycho-neuro-endocrine therapy of diseases, especially caused by baneful information.

Kidney cancer is the 10th most common cancer in Europe with overall mortality rates increasing until the late 1980s and early 1990s and thereafter, stabilized. Until recently, renal cell carcinoma (RCC) was thought to represent a monomorphic disease; however, modern genetic characterization has demonstrated different subtypes with specific cell types and molecular metabolism. Imaging diagnostic methods are basic for staging and for new treatment strategies. Moreover, tumor biopsy has been reintroduced in the diagnostic armamentarium, mainly in patients with small masses but also when disseminated tumors need to be treated with new target therapies. Although TNM stage, Fuhrman nephron sparing surgery. Conversely, cardiac bypass can be necessary for resection of tumors with thrombus extending into the inferior vena cava above the level of hepatic veins. With the advent of modern ablative energies (cryotherapy or radiofrequency) for renal tumors in selected patients with percutaneous or laparoscopic techniques, it is now possible to achieve long cancer specific survival with decreased morbidity. A need for standardization of follow-up after surgery with lifelong protocols has been recognized in last years. Finally, angiogenesis inhibitors have demonstrated a high probability of disease control in patients with metastatic renal carcinomas. Their indication as adjuvant in local advanced tumors as well as the role of nephrectomy in patients with metastatic disease is being evaluated in current clinical trials.

CARDIOLOGY

24 Hour Heart Rate Variability Analysis (HRV) in Childhood: Prognostic Significance, Risk Factors and Clinical Applications

Reiner Buchhorn (Department of Pediatrics, Caritas Krankenhaus Bad Mergentheim, Bad Mergentheim, Germany)

In series: Cardiology Research and Clinical Developments

2015. 139 pp.

Hardcover: 978-1-63463-825-8. $110.00.

Based upon the hypothesis that prognosis in childhood heart failure depends on autonomic dysfunction, the author introduced a new heart failure model and a medical therapy with beta-blockers in 1996. The author used the analysis of heart rate variability (HRV) in 24 hours Holter ECG’s for the understanding of the pathophysiology of childhood heart failure and for objective control of medical therapy. The success of this clinical model was the inspiration of a new approach to mental disease in childhood. In the last decades, an increase of new paediatric problems requiring medical care like eating disorders, behavioural and attention problems has been observed. All these diseases are related to autonomic dysfunction and have a high impact on cardiovascular prognosis. Based upon the hypothesis that behavioural problems are accompanied by changes in the autonomic nervous system, the author performed analysis of HRV in 24 hours Holter ECG’s in these patient groups: healthy children with respect to school affiliation; a historical control group from literature published in 1997; attention deficit disorder with and without hyperactivity; anorexia nervosa and obesity. This data was compared to children with an increased cardiovascular risk due to congenital heart disease. In order to analyse the effect of autonomic function on human growth, we measured HRV in children with growth failure. A new HRV Score was established for the comparison of autonomic function in different age groups. The author could demonstrate a decrease of vagal activity in healthy children in children of today and speculate that insufficient vagal maturation may be a reason for an increasing prevalence of mental and cardiovascular disease. Looking for the reason of this vagal shift, caloric over nutrition, omega-3-fatty acid deficiency, high intensity of information and communication technology usage and some environmental toxins reduce HRV in childhood.

Advances in Hemodynamics Research

Keiich Iitani M.D., Ph.D. (Project Associate Professor, Department of Hemodynamic Analysis, Department of Cardiovascular Surgery, Kitasato University School of Medicine, Kitasato, Minami-ku, Sagamihara, Kanagawa, Japan)

In series: Cardiology Research and Clinical Developments


Hardcover: 978-1-63483-187-1. $190.00.

Hemodynamics is the study of dynamics in the circulatory system. Hemodynamics has been essential in clinical practice pertaining to cardiovascular diseases from ancient days. Although it is essential because it is based on dynamics and physics, the understanding of hemodynamics is hard for all those concerned with cardiovascular diseases. In addition, with the rapid progress of recent imaging and computer technology, hemodynamics research has undergone an evolution that provides beautiful, colorful blood flow visualization. This kind of innovation contributes novel insights into the approach to the pathophysiology of cardiovascular diseases. This textbook includes
the comprehensive knowledge regarding hemodynamic research from basic physiology to recent clinical problems. This textbook has two parts: the first includes the basics of hemodynamics research and the second presents its clinical applications. This textbook covers all the current topics and all the important historical topics related to hemodynamics. In this edition, each chapter was written by professional authors regarding their respective topics. Careful attention was paid to make it appeal to a wide range of professionals including clinicians, engineers, physicians, and researchers. Each chapter is independent of the others, and this textbook was written both to be read through and to be used as a reference for any special topics. We hope this textbook will provide new perspectives to all those interested in the research regarding hemodynamics.

Cardiac Tamponade: Epidemiology, Causes and Management
Cameron L. Pittman
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-63482-787-4, $110.00.
Cardiac tamponade is a life threatening pericardial disease which is characterized by an obstruction of inflow of blood to the ventricles leading to a decrease of cardiac output as a result of the pressure around the heart caused by accumulation of fluid within the pericardial space in a sufficient quantity. In this book, the key elements of the anatomy and physiology of the pericardium are reviewed, and the pathophysiology, etiology, clinical features, diagnosis and management of cardiac tamponade are discussed. Regional blood flow and metabolic derangements reported in experimental models are reviewed as well. Other chapters examine the epidemiology, clinical presentation, diagnostic and therapeutic approaches of malignant pericardial effusion and a discussion of mood alteration (in particular, acute dysphoria) that is associated with cardiac tamponade, that which is widely mentioned in nursing and medical literature.

Circadian Cardiology with Focus on both Prevention and Intervention
Krasimira Hristova, Abdulla Shehab, Germaine Cornelissen and RB Singh (National Heart Hospital, Sofia, Bulgaria)
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-63463-956-9, $250.00.
e-book: 978-1-63463-999-6, $250.00.
Cardiovascular diseases have become a major cause of death in both middle and higher income countries despite significant increases in evidence-based drug therapy and interventions as well as cardiovascular surgery. It seems logical to educate the world about actual causes of cardiovascular diseases, which are important in the pathogenesis of these problems. The science of chronocardiology gives due consideration to our cardiovascular functions according to time structures which appear to be related to light and dark cycles of 24 hours, due to day and night.

Dietary Risk Factors of Cardiovascular Diseases
Wenbiao Wu (College of Food Science, Southwest University, Beibei, Chongqing, PRC)
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-63482-761-4, $160.00.
Although successful efforts have been greatly exerted to prevent and treat cardiovascular diseases (CVDs), it currently causes the most number of global deaths among all kinds of diseases. This book has comprehensively reviewed dietary risk factors for CVDs. There are several approved dietary risk factors for CVDs in our daily diets and foods. The dietary risk factors include toxicities caused by an over-consumption of cholesterol, energy, saturated fatty acids, saccharides (especially fructose), iron, sodium, alcohol, niacin, homocysteine, alkaloids (such as synephrines, caffeine, tyramine, dopamine, histamine, and cyanide), nucleic acids and trans-fatty acids. Other extensive factors include the metabolites of choline-containing compounds or L-carnitine, and environmental contaminants such as mercury and cadmium; the deficiencies of folate and vitamins D, B6, or B12; the toxicity or deficiency of magnesium; and the consumption of sweetened soft drinks. Underweight, or even normal weight individuals might not decrease the occurrence of cardiovascular diseases because the deficiency of some nutrients, and alkaloids in the above mentioned chapters that are able to control weight could also damage the cardiovascular system. It seems that the association of all these risk factors in blood with CVDs has been well established, though some controversial opinions on some risk factors exist. Therefore, it should be worth carrying out further studies on the correlation of these risk factors in foods with the occurrence of CVDs.

Heart Rate Variability (HRV): Prognostic Significance, Risk Factors and Clinical Applications
Shelby Walters
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-63463-736-7, $190.00.
e-book: 978-1-63463-772-5, $190.00.
Heart rate variability (HRV) has become a popular method to study autonomic modulation of the cardiovascular system. Cardiovascular health depends on the proper functioning of several physiological systems, including the autonomic nervous system, which exerts its function via a complex interaction between its two branches: sympathetic and parasympathetic. Additionally, heart rate variability has been widely applied in basic and clinical research studies for describing the extent of sinus arrhythmia, and for assessing the function of cardiac autonomic regulation quantitatively. In other words, it is a mirror of the balance of sympathetic and vagal activity. This book discusses the prognostic significance, risk factors and clinical applications of heart rate variability.

Horizons in World Cardiovascular Research. Volume 7
Eleanor H. Bennington
In series: Horizons in World Cardiovascular Research
Hardcover: 978-1-63463-861-6, $160.00.
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 genetic risk factors for abdominal aortic aneurysms; blood pressure monitoring in biological time structures seasonal variations in ordinary living with perioperative case and salt restriction/weight reduction; genetics and perinatal milieu affecting saline preference in hypertensive rats; the influence of apolipoproteins in cardiovascular diseases; and novel effects of macrolide on MMP-related cardiovascular remodeling.
Horizons in World Cardiovascular Research. Volume 8
Eleanor H. Bennington
In series: Horizons in World Cardiovascular Research
2015. 188 pp.
Hardcover: 978-1-63482-551-1. $160.00.
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 thrombus quantification in clinical practice; aspartate protease cathepsin D in liver and heart injury, pathophysiology and therapy; hypertension, arterial stiffness and cardiovascular outcomes; fractional flow reserve is an essential measure for the management of patients with stable coronary artery disease; arterial stiffness and vascular calcifications in chronic kidney disease patients; the clinical application of coronary flow velocity reserve by transthoracic Doppler echocardiography; management of right heart failure; short QT syndrome; new horizons in preventing graft arterial disease; and associations between cathepsin B and inflammation markers in elderly males and females.

New Developments in Myocardial Ischemia Research
Rosalinda Madonna, M.D., Ph.D. (Institute of Cardiology and Laboratory of Experimental Cardiology, Center of Excellence on Aging - CESI, "G. d'Annunzio" University - Chieti, Italy)
In series: Cardiology Research and Clinical Developments
Hardcover: 978-1-63482-802-4. $190.00.
e-book: 978-1-63482-855-0. $190.00.
Heart failure caused by atherosclerosis-associated myocardial ischemia is a major cause of morbidity and mortality in developed countries in spite of great progress in intervention and medications. Beta-blockers, angiotensin-converting enzyme (ACE), ventricular resynchronization therapy (biventricular pacing) and ventricular assist devices cannot fully prevent this disease. The research on possible alternative therapies, as well as novel strategies for non-invasive assessment of myocardial ischemia, continues actively in the 21st century and offers novel opportunities, some already in use through clinical practice. This book offers topics related to diagnosis and therapy of myocardial ischemia for a wide range of researchers in both academia and in the clinical field, for both undergraduate and graduate level students. Studies ranging from stem cell-based therapies to new promising biomarkers associated with coronary artery disease are discussed in depth. Non-invasive assessment of myocardial perfusion (Cardiac Magnetic Resonance), as well as diagnostic and prognostic role of cardiopulmonary stress test, are also covered. Leading experts give educated insight on myocardial ischemia in each chapter. It is envisioned that this book, with its proposition of diagnostic and therapeutic strategies for myocardial ischemia, will inspire a wide range of researchers and physicians towards new explorations and applications in the field of ischemic heart disease.

Pacemakers and ICD: Types, Potential Complications and Long-Term Health Effects
Riccardo Proietti and Vincenzo Russo (Consultant Cardiologist, Cardiac Electrophysiology Laboratory, Luigi Sacco Hospital Milan, Italy)
In series: Cardiology Research and Clinical Developments
Cardiac pacing is one of the most rapidly growing fields in medicine. This growth is stimulated by several challenges unique to this subspecialty: the high prevalence of diseases that require cardiac pacing; the wide range of age groups that undergo this therapy; the technological advancements that improve safety and feasibility of the procedure; the long-term performance of the devices implanted; and the potential long-term complications. Historically, the field of cardiac pacing was in the hands of cardiac surgeons and gradually absorbed into the specialty of cardiology. The need for a more specialized training to address the peculiarities of cardiac pacing brought about the formation of clinical electrophysiology as a subspeciality. In addition to clinical competence and knowledge, a basic understanding is required of cardiac pacing technologies and the science behind them. While there are many books on this topic, some comprehensive and others addressing specific issues, Pacemakers and ICD: Types, Potential Complications and Long-Term Health Effects is intended to occupy a middle ground. This book gathers information on a number of aspects not typically treated in detail in other books but of high clinical relevance. It follows the different stages of cardiac pacing from the surgical technique of the implant to the impact on long-term health after the procedure. Of particular interest are contributions from leading experts on alternative sites of pacing, less understood complications, psychological effects and fresh approaches to the clinical management of patients with implantable cardiac devices. Recent technologies and forecasts of the field, including leadless pacemakers and subcutaneous ICD are also discussed.

Role of Natural Herbs in Stroke Prevention and Treatment
Manzoor A. Mir (Department of Bioresources, Faculty of Biological Sciences, University of Kashmir, Srinagar, India)
In series: Cardiology Research and Clinical Developments
2015.
The field of stroke research continues to evolve, and better outcomes are possible and even likely. Over the last two decades, basic science research in the field of stroke has elucidated multiple pathways of cellular injury and repair after cerebral ischemia, resulting in the identification of several promising targets for neuroprotection. Prevention and treatment of cerebrovascular diseases has been one of the primary goals of neuroscience research but unfortunately, to date, no such safe preventive agents are available. There is an urgent need for agents that are pharmacologically safe, cost-effective, and immediately available with minimal side effects. Although a considerable amount of research has been invested into the development of novel treatments capable of protecting the brain from damage following stroke, but with limited success. Currently, the only drug approved for the treatment of ischemic stroke is recombinant tissue plasminogen activator (rtPA, alteplase), which has a limited time window for administration and increases the risk for subsequent hemorrhage. This book assesses the immunobiology of stroke, natural herbs and human brain interaction, current evidence for the efficacy of a range of readily available plant-based extracts and chemicals that
may improve brain function. They are discussed in terms of how an increased understanding of the relationship between their ecological roles and CNS effects might further the field of natural, phytochemical drug discovery. Numerous neuroprotective treatments have been identified that show great promise in animal models of stroke. In this book, we have also highlighted the promising targets of neuroprotection and the natural products from traditional medicinal herbs that exhibit protective effects on ischemic brain injury. Further the authors discuss the individual herbs, herbal cocktails and the components from herbs in neuroprotection. The book contains many diagrams and tables with highlighting the role of various herbs and their components in neuroprotection. A separate chapter has been included regarding polyphenols in neuroprotection.

**CHILDREN**

**Children's Health and Well-Being: Portraits at National, State, and Rural Levels**  
Valerie Romero  
In series: *Children's Issues, Laws and Programs*  
Hardcover: 978-1-63483-663-0, $210.00.  

Children in rural areas face particular risks to their health and well-being. Some risks relate to their demographic characteristics; rural children are more likely to live in poverty than those in urban areas. Some relate to their physical environment; the risks of injury and death from injury are greater among rural children. Since 2003, the National Survey of Children’s Health (NSCH) has presented in-depth National and State-level data on the health and well-being of children in their families and communities. The survey provides a snapshot of children’s physical, mental, and developmental health status; access to health care; activities at school, outside of school, and at home; and their safety and security in their neighborhoods and at school. The NSCH, supported and developed by the U.S. Department of Health and Human Services, Health Resources and Services Administration’s Maternal and Child Health Bureau and conducted by the National Center for Health Statistics of the Centers for Disease Control and Prevention, is the only nationally-representative survey that considers children’s health and well-being within the contexts of the family and community. This book presents indicators of the health and well-being of children, the supportive and risk factors in the family environment, and aspects of the neighborhood that may support or threaten families and children.

**DENTAL**

**Oral Health: Anesthetic Management, Social Determinants, Role of Nutrition and Impact on Quality of Life**  
Julia Renee Barnes  
In series: *Dental Science, Materials and Technology*  
Hardcover: 978-1-63482-832-1, $160.00.  

Biological, psychological, sociological and ecological features of life contribute and interact simultaneously in the development of an individual’s oral health. The chapters in this book review the effects of periodontal disease and its treatment on OHRQoL. (Oral Health-Related Quality of Life); the consequences of periodontal disease and patient perceptions of the impact of their gingival/periodontal health on their everyday lives; the link between nutritional factors and periodontal disease; a review of Charcot-Marie-Tooth Disease (CMTD), the most common sensitive and motor peripheral neuropathy; the influence of improved oral health literacy considering the circumstances in which a person has been born, lives and works, the microbiobiological mechanisms, and the public’s influence to improve oral health; the complexities related to oral care of people who experience mental disorders and the implications this may hold for their quality of life, practice, research and policy; determinants of oral health in schizophrenic patients; and an assessment of the PIDAQ (Psychosocial Impact of Dental Aesthetic Questionnaire), the only available tool designed specifically to assess malocclusions.

**Oral Pathology and Oral Medicine**  
Giuseppe Alessandro Scardina (Department of Oral Sciences, "G. Messina" University of Palermo, Italy)  
In series: *Dental Science, Materials and Technology*  
Hardcover: 978-1-63482-448-4, $230.00.  

This is a multidisciplinary publication for all fields of oral medicine. This book builds a bridge between basic and clinical sciences, promoting the exchange of information and the advancement of oral medicine for the benefit of patients and clinicians. It offers comprehensive coverage of new techniques, important developments, and innovative ideas in all fields of clinical dentistry.

**DERMATOLOGY**

**Advances in Dermatology Research**  
James P. Vega  
In series: *Dermatology - Laboratory and Clinical Research*  
Hardcover: 978-1-63482-226-8, $190.00.  
e-book: 978-1-63482-244-2, $190.00.

Advances in Dermatology Research presents original research results on the leading edge of dermatology. Each chapter has been carefully selected in an attempt to present substantial advances across a broad spectrum. Some topics discussed in this book include pemphigoid; cyanosis, and acne.

**Lichen Planus: Epidemiology, Symptoms and Treatment**  
Yvonne L. Summers  
In series: *Dermatology - Laboratory and Clinical Research*  
Softcover: 978-1-63483-541-1, $82.00.  
e-book: 978-1-63483-580-0, $82.00.

Lichen planus is a chronic inflammatory mucocutaneous disease of unknown cause, rarely observed in young individuals primarily affecting women between the fifth and sixth decades of life. Although its pathogenesis is unclear, several studies suggest this is a persistent immune disorder where the basal keratinocytes are probably attacked by T lymphocytes. This book examines the potential pathogenesis of oral lichen planus, the clinical and histopathological criteria that need to be taken into consideration of the diagnosis of OLP and the association of oral lichen planus with systemic diseases and amalgam restorations.
Skin Aging and Photoaging: Physiology, Clinical Aspects and Emerging Therapies
Emanuel Graham
In series: Dermatology - Laboratory and Clinical Research
Skin aging is the result of two distinct, biological processes which may occur concurrently: extrinsic and intrinsic aging. The first chapter of this book focuses on the anti-skin aging effects of natural products, such as polyphenols and terpenes using topical application and oral administration. Future prospects for this field of research will focus on natural products combined with molecular techniques to help maximize the desired anti-skin aging benefits. The second chapter provides a brief review of skin characteristics, skin aging mechanisms and dermal applications. The next chapter of the book reviews the types of pollution and external aggression that skin is exposed to and reviews recently published studies that report that cumulative exposure to the five daily environmental aggressors (pollution, sun, cold, heat and wind) increase this skin damage. The remaining chapters review the role of inflammation in regulation of skin aging; the relevant methods, the physiological structure and function of the Stratum Corneum, as well as the effects of intrinsic and extrinsic aging on these parameters; the physiology of skin photoaging and the emerging therapies for combating photoaging and photocarcinogenesis; and the biological effects and the latest findings on the role of macrophage migration inhibitory factors (MIF) in photoaging following UV exposure.

Sunscreens: Properties, Role in Skin Cancer Prevention and Health Effects
Sean Henry Sharp
In series: Dermatology - Laboratory and Clinical Research
Hardcover: 978-1-63482-160-5. $190.00.
e-book: 978-1-63482-204-6. $190.00.
The skin is composed of three layers of differentiated tissues. The most external layer is the epidermis, followed by the dermis and the hypodermis, which is the most internal layer of the skin. The increasing incidence of skin cancer has led international health authorities to recommend protection measures to prevent the harmful effects of skin exposure to UV-radiation. Such measures include avoidance of sun exposure, especially at times when disease-inducing wavelengths are more intense, wearing protective clothing and use of topical sunscreens. This book discusses the various properties of sunscreens, the role sunscreens play in skin cancer, and other health effects for individuals using sunscreens.

Superficial Mycoses - An Overview
Avner Shemer, Nicole Sakka and Sharon Baum
(Department of Dermatology, Chain Sheba Medical Center, Sackler School of Medicine, Tel Hashomer, Israel)
In series: Dermatology - Laboratory and Clinical Research
Hardcover: 978-1-63482-406-4. $190.00.
The book is an extensive overview in the topic of superficial mycoses. The book deliberates on human fungi kingdom, pathogenesis of different superficial mycological diseases, its classical clinical manifestations and the variants clinical forms, with an emphasis on the relevant differential diagnosis, which sometimes might be confused with superficial mycoses. The book is written in a very practical approach accompanied with images and relevant explanations. The book has two main goals. First, to provide broad information regarding superficial dermatomycological diseases. In addition, it gives emphasis on correct diagnosis, focusing on precise and relevant interpretation of mycological laboratory analysis in order to prevent over-diagnosis and misinterpretation of the disease. The clinical approach – practically – is necessary for having correct diagnosis. The final diagnosis will be supported by using the standard laboratory analysis. A unique chapter elaborates widely on laboratory analysis, combined with relevant interpretation of the mycological results. This is due to many different saprophytes fungi which are irrelevant to skin diseases and might be interpreted as relevant, by mistake. Other laboratories techniques are discussed widely as well. The different approaches for mycological analysis are elaborated including the interpretation of false positive and false negative results. Other skin disorders such as psoriasis, atopic dermatitis and /or many other nails disorders which could be accompanied with relevant or irrelevant different fungi are discussed widely accompanied with very impressive clinical pictures and explanations of how and when to suspect combined disorders. Topical and systemic anti fungi treatment is listed clearly, focusing on the different antifungal mechanisms of each antifungal family. Drug interactions/contra-indications between the antifungal drug/s and other common drugs are presented in detail as well as the possible side effects of the antifungal drugs. New different drugs and devices such as lasers, photo dynamic therapy (PDT), and drilling of the nails also are examined.

DIGESTIVE DISEASES

Intussusception and Bowel Obstruction: Symptoms, Diagnosis and Treatment Options
Rosie Miller
In series: Digestive Diseases - Research and Clinical Developments
Hardcover: 978-1-63482-703-4. $110.00.
Intussusception is the most frequent cause of bowel obstruction in infants and toddlers. In this book, the symptoms and clinical findings of intussusception are discussed. The clinical guidelines for the management of intussusceptions in children are discussed as well. Other chapters examine the diagnosis, etiology, pathophysiology and treatment modalities for both small bowel obstruction and intussusception of the small bowel, focusing on minimally invasive surgical options; the etiology of afferent loop obstruction; the treatment options for adhesive small bowel obstruction (SBO), a common complication typically caused by adhesions that form after abdominal surgery; a literature review of traditional medical treatment options and a discussion on the authors’ experiences in treating gynecological cancer patients with non-malignant bowel obstruction using manual physical therapy.

Surgery for Crohn’s Disease
Stephen M. Kavic, M.D. (University of Maryland School of Medicine, Baltimore, Maryland, USA)
In series: Digestive Diseases - Research and Clinical Developments
Crohn’s disease is a chronic illness that affects millions of patients worldwide. Despite its increasing recognition as a medical specialty within gastroenterology, there has been little attention devoted to
Crohn’s from a surgical perspective. This volume fills that void and acts as the first catalogue to address the surgical management of Crohn’s disease. The goal of this work was to provide surgeons with the latest medical and surgical information to manage patients with Crohn’s disease effectively. In this book, contributions from both gastroenterologists describe the history, diagnosis, nutrition, medical management, and surveillance of Crohn’s disease. Chapters from general and colorectal surgeons detail common clinical techniques, minimally invasive surgical approach and management of perianal disease. In addition, surgical complications specific to Crohn’s disease are also reviewed. This book provides all of the essential information needed in the surgical management of Crohn’s disease in one single volume. It aims to be a useful resource for practicing surgeons and surgical residents as well as gastroenterologists. The authors wish readers to understand the complex decision making and sophisticated surgical techniques that these patients often demand.

**Uncommon Gastrointestinal Disorders: Diagnosis and Management**

* Sachin B Ingle, B. D. Adgaonkar, C. R. Hinge and Siddiqui Saleha (MIMSR Medical College, Latur, Maharashtra, India)

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


Softcover: 978-1-63482-005-9. $82.00.
e-book: 978-1-63482-237-4. $82.00.

Uncommon gastrointestinal diseases are a worrisome and challenging problem for gastroenterologists and GI Pathologists. In this book, the authors present research in the study of the epidemiology, management and prevention of uncommon gastrointestinal diseases e.g. isolated gastroduodenal Crohn’s disease, primary lymphangiectasis of intestine, microscopic colitis, eosinophilic gastroenteritis, solitary rectal ulcer syndrome and primary splenic epithelial cysts. This book is definitely useful for gastroenterologists and GI pathologists for the diagnosis, treatment and prevention of these uncommon conditions.

**DRUGS**

**Prescription Drug Abuse: Reduction Efforts and Federal Role**

* Darla B. Greer*

In series: *Alcohol and Drug Abuse*


Hardcover: 978-1-63482-530-6. $120.00.
e-book: 978-1-63482-531-3. $120.00.

An estimated 6.5 million individuals currently abuse prescription drugs in the United States. Unlike policy on street drugs, federal policy on prescription drug abuse is complicated by the need to maintain access to prescription controlled substances (PCS) for legitimate medical use. Prescription drug abuse is not limited to addiction; it includes, for example, taking a medication for the purpose of getting high or taking a medication that was prescribed for someone else. This book discusses reduction efforts and the federal role in prescription drug abuse.

**Emergency Medicine**

**Abdominal Injuries: Risk Factors, Management and Prognosis**

* Chad L. Barrett*

In series: *Emergency and Intensive Care Medicine*


Hardcover: 978-1-63482-590-0. $110.00.

Severe trauma represents one of the biggest issues threatening modern healthcare systems across the globe. Traumatic injury is the leading cause of lost life years worldwide, responsible for an excess of 5 million deaths every year. The role of laparoscopy in trauma has not paralleled its popularity in other areas of general surgery for several reasons including the emergent nature of many of the operations, the lack of expertise and comfort level of some surgeons and the fear of missed injuries. In this book, the possible indications and pitfalls of integrating minimally invasive surgical techniques into the management of abdominal injuries are examined. Furthermore, post-traumatic haemorrhage is likely to represent the principle cause of preventable deaths amongst patients sustaining major traumatic injuries. Management of these patients and techniques (both old and emerging) are discussed, which may be able to more accurately identify early coagulopathy and enable goal-directed, targeted therapy. The third chapter of the book describes currently accepted classifications of pelvic trauma to examine the link between mechanism of injury and factors predictive of mortality. Recent advances made in services, protocols, imaging, instrumentation and management of pelvic trauma are examined, specifically looked at to determine whether any of it has served to improve the historically poor prognosis. Lastly, pancreatic injury in childhood is rare, constituting 0.3% to 0.7% of all trauma admissions at large pediatric trauma centers. Nonetheless, they do occur. The authors explore pancreatic duct ruptures in children, the subsequent diagnosis and treatment options, which usually require surgery or other interventional therapy and carry a significant risk of morbidity.

**Abdominal Trauma and Abdominal Aortic Aneurysms: Symptoms, Diagnostic Methods and Treatment Outcomes**

* Louise Santiago*

In series: *Emergency and Intensive Care Medicine*

2015. 130 pp.

Hardcover: 978-1-63483-482-7. $110.00.

In this book, the epidemiology, identification of and management of injuries sustained from blunt abdominal trauma (BAT) in childhood are discussed, with a focus on recent advances and future research. Open abdomen (OA), which refers to leaving abdominal incisions open after surgical procedures, and its management are presented as well. Also in this book, bacterial peritonitis and intra-abdominal abscesses, which are major complicated intra-abdominal infections post abdominal trauma are discussed. The severe abdominal consequences of failing, particularly among older adults, is reviewed as well. Finally, periodontitis is known to be a risk factor for abdominal aortic aneurysm (AAA). The authors focus on the role of specific periodontopathic bacteria in AAA and are able to conclude that periodontal pathogens play a major, critical role in AAA development.

**Critical Care Procedure Book**

* Sri Sujanthy Rajaram, MD, MPH (Critical Care Medicine, Hackensack University Hospital, Hackensack, JFK Medical Center, Edison, NJ, USA)*

In series: *Emergency and Intensive Care Medicine*


Hardcover: 978-1-63482-405-7. $160.00.

This book provides a comprehensive review, with illustrations and guidelines, of bed side procedures performed in critical care units. Critical care procedures are included in a step by step manner. They are easy to review and help perform procedures confidently at the bed side with minimal complications. It is a great review book of procedures for the board exams, and gives an excellent review of intensive care unit
procedures for clinicians and trainees. This book includes neuro-critical care, cardiothoracic and medical surgical intensive care unit procedures.

**Septic Shock: Risk Factors, Management and Prognosis**

_Benedict Graver_

In series: _Emergency and Intensive Care Medicine_  
Hardcover: 978-1-63463-916-3, $110.00.  

In a 2013 Healthcare Cost and Utilization Project Statistical Brief by the US Agency for Healthcare Research and Quality, septicemia was ranked as the number one most expensive national inpatient hospital cost. This ranking comes in spite of substantial advances in the clinical management of sepsis over the past fifteen years. While adherence with internationally established sepsis management protocols have demonstrated reduction in mortality and hospital/ICU length of stay, compliance with these protocols remains poor. This book discusses risk factors, management and prognosis of septic shock in individuals.

**The Conundrum of Toxic Epidermal Necrolysis**

_Gérard E. Piérard, Philippe Paquet, Serge Jannes and Claudine Franchimont_  
(University of Liege, Department of Dermatopathology, University Hospital, Liege, Belgium)

In series: _Emergency and Intensive Care Medicine_  
Hardcover: 978-1-63482-068-4, $160.00.  

Adverse drug reactions commonly affect the skin. In rare instances, they cause severe morbidity and possibly lead to drug-induced mortality. Toxic epidermal necrolysis (TEN) represents the archetype of such conditions. This book summarizes the recent advances in the field of TEN as a major life-threatening adverse drug reaction. Indeed, this dramatic condition remains a puzzling topic for both the clinician at the bedside and in the laboratory. This book is fully updated about the putative biomechanisms, the clinico-pathological correlations and recent treatment advances. The most damaging effects of TEN reside in the skin, eyes and oral mucosa. Physicians keen in intensive care medicine, dermatology and ophthalmology should find here stimulating concepts applicable to the patient with the hope of reducing the TEN fatalities.

**GENETICS**

**Advances in Genetics Research. Volume 14**

_Kevin V. Urbano_  
In series: _Advances in Genetics Research_  
Hardcover: 978-1-63482-739-3, $190.00.  
e-book: 978-1-63482-740-9, $190.00.

“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 mitochondrial gene diversity of the mega-herbivorous species of the genus Tapirus (tapiridae, perissodactyla) in South America and some insights on their genetics conservation, systematics and the pleistocene influence on their genetic characteristics; strategies for gene prospecting of plants in response to drought and salinity; clinical evidence and the genetic effects of traditional Chinese medicine for the management of proteinuria in patients with diabetic nephropathy; biochemistry and genetics of ansamycin antibiotics; BRCA gene mutations mediate particularly high TNBC risk by defective estrogen signaling; genotype-phenotype relationships in language processes in Rett syndrome; Marfan syndrome; Marfan syndrome and periodontitis; combined pectus correction and aortic valve sparing root replacement in Marfan patients; severe periodontitis in Marfan syndrome; and preimplantation genetic diagnosis for Marfan syndrome.

**Advances in Genetics Research. Volume 15**

_Kevin V. Urbano_  
In series: _Advances in Genetics Research_  

“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 patent roadmap for the biosensor space; avoidant/restrictive food intake disorder in a female patient affected by Marfan syndrome; optimizing oil production in B. napus by gene stacking; periodontitis; genomic imprinting and the brain: neuron-specific switching of gene expression at imprinting regions; and pharmacogenomics focusing on phase two metabolizing enzymes.

**Mathematical Genetics**

_Andrey Nikolaevich Volobuev_ (Samara State Medical University, Head of the Chair Physics, Russia)  
In series: _Genetics - Research and Issues_  
Hardcover: 978-1-63463-254-6, $160.00.  

In this book, mathematical aspects of a population genetics are considered. On the basis of the Hardy - Weinberg law, the standard approach to population genetics problems is stated. Along with the standard approach, the necessity of separate research of family tree genetics and population genetics, which represent set of the family trees, is shown. Family trees are investigated by methods of discrete mathematics in a discrete time scale which is defined by alternation of generations. It is necessary to transit to a continuous time scale, continuous functions, therefore the Hardy-Weinberg law is written down in the form of the differential equation of the second order. Transition to continuous functions has allowed us to receive new and certainly not trivial results in population genetics. In particular, a new approach to problems of a mutations occurrence under radiation is discussed, of a new growths occurrence, and migrations of populations under various conditions to reveal nonlinear character of inbreeding and natural selection. The book can be useful to geneticists, students-biologists, post-graduate students and everyone who is interested in problems of population genetics.

**Type I Collagen: Molecular Structure, Applications in Tissue Engineering and Role in Human Disorders**

_Gretchen Rivera_  
In series: _Genetics - Research and Issues_  
Hardcover: 978-1-63482-829-1, $110.00.  

In the human body, collagen is the most abundant structural protein, forming up to 35% of the entire protein content of the whole body. In this book, the preparation, characterization and applications in tissue regeneration of bovine type 1 collagen are reviewed. Furthermore, collagen is often used in regenerative medicine. In this book, the authors report on the helicity of collagen molecule in fibrils by circular dichroism spectroscopy and the thermograph of fibrils by differential scanning calorimetry (the structural aspects of collagen molecules). In
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HEALTH

Handbook of Hearing Disorders Research
Charlotte Hailee Atkinson
In series: Otolaryngology Research Advances
Hardcover: 978-1-63463-654-4, $190.00.
e-book: 978-1-63463-678-0, $190.00.
Deafness is one of the most widespread, costly and poorly understood disabilities in the world. Hearing impairment is a condition that involves medical, psychological and social aspects. According to the World Health Organization (WHO) about 250 million people have disabling hearing loss and two-thirds of them live in the developing world. Millions of people progressively lose their most important means of communication and became socially isolated, especially in the later years of their life. This handbook provides recent research on several different hearing disorders.

Hospital Emergency Departments: Background, Issues, and Trends
Daniel T. Lee
In series: Emergency and Intensive Care Medicine
Hardcover: 978-1-63482-170-4, $120.00.
Hospital-based Emergency Departments (EDs) are required to stabilize patients with emergent conditions regardless of the patients’ ability to pay as a requirement of the Emergency Medical Treatment and Active Labor Act (EMTALA). Given this requirement, EDs play an important part in the health care safety net by serving the uninsured, the underserved, and those enrolled in Medicaid. This book describes EDs and the role they play in the health care delivery system. It also discusses the federal role and interest in supporting emergency care.

Human Health and Nutrition: New Research
Sergej M. Ostojic, M.D., Ph.D. (Professor of Biology and Medicine, University of Novi Sad, Serbia)
In series: Food and Beverage Consumption and Health
Hardcover: 978-1-63482-823-9, $190.00.
e-book: 978-1-63482-853-6, $190.00.
Research on nutrition has grown into one of the most challenging and innovative health-related scientific disciplines during the past decade. New advances in basic and applied nutritional research help to emphasize several health challenges of the global population. In this book, authors present current research in the study of nutrition and human health. Topics discussed here include the correlation between obesity and iron deficiency anemia; the role of exercise, inflammation and chronic disease in zinc transport; protein supplementation in athletes and in patients with kidney disease; factors influencing fruit and vegetable consumption in adolescents; and novel perspectives in physical inactivity-related mechanisms of sarcopenia.

Mental and Holistic Health: Some International Perspectives
Joseph L. Calles Jr., Donald E Greydanus and Joav Merrick (Department of Psychiatry, Western Michigan University Homer Stryker MD School of Medicine, Kalamazoo, MI, USA)
In series: Health and Human Development
Edited by: Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
Hardcover: 978-1-63483-589-3, $190.00.
The search for optimal medications to support health has been part of human history since early times. One concept that was learned in early human civilizations was that medications can be harmful as well as potentially beneficial. Folklore and anecdotal information dominated human knowledge for more than 50,000 years until the work of the Chinese emperor, Shen-Nung (2737 BCE), who became a pristine, official, and erudite classifier of medicinal herbs. Pharmacologic management of human disease is clearly part of the 21st century medical armamentarium. Adolescents of the second decade of the 21st century and those adolescents soon to come will determine the outcome of our planet and life into the 22nd century. Pharmacology will remain an ever-growing part of clinicians’ efforts to improve their patients’ mental and medical health, but in this book, the authors have taken a holistic approach, which they hope will please and interest the reader.

Musculoskeletal Diseases: Types, Causes and Treatments
Greg Reed
In series: Musculoskeleton System - Anatomy, Functions and Injuries
Softcover: 978-1-63463-551-6, $82.00.
e-book: 978-1-63463-572-1, $82.00.
Musculoskeletal Disorders (MSD) are one of the leading classes of health effects and can be caused by various factors, work related and non-work related. MSD refers to health related problems of the locomotor apparatus, i.e. health problems of the skeleton, ligament, muscles, tendons, joints, nerves and cartilage. Rates of musculoskeletal disorders vary by population, their age groups, genders, socioeconomic aspects and other factors. These factors can affect our understanding of the prevalence, incidence, and costs of musculoskeletal disorders aside from the variability of actual prevalence or incidence rates due to etiologic issues or costs due to illness or injury severity or treatment response and recovery. This book provides an analysis of costs of musculoskeletal disorders of employed individuals. It also discusses the application of differential scanning calorimetry for the diagnosis of musculoskeletal disorders, and the effects of stretching and sensory motor training for older adults with musculoskeletal disorders.

Occurrences, Structure, Biosynthesis, and Health Benefits Based on Their Evidences of Medicinal Phytochemicals in Vegetables and Fruits. Volume 3
Noboru Motohashi (Meiji Pharmaceutical University, Tokyo, Japan)
In series: Food and Beverage Consumption and Health
Hardcover: 978-1-63482-710-2, $190.00.
e-book: 978-1-63482-734-8, $190.00.
Epidemiologically, nutritious values of vegetables and fruits have been the focus for daily health maintenance and disease prevention. Health phytochemicals such as carotenoids, flavonoids, anthocyanin,
betalains, vitamins, minerals as well as three major nutrients have been found in vegetables and fruits. Each chapter of Volume 3 describes these phytochemicals and their experimental facts and clinical applications.

**Occurrences, Structure, Biosynthesis, and Health Benefits Based on Their Evidences of Medicinal Phytochemicals in Vegetables and Fruits. Volume 4**  
*Noboru Motohashi (Meiji Pharmaceutical University, Tokyo, Japan)*  
In series: *Food and Beverage Consumption and Health*  
Hardcover: 978-1-63482-804-8, $160.00.  
Today, the vegetables and fruits humans ingest daily contain a multitude of compounds; these include polyphenols, dietary fibers, organosulfides, isothiocyanates, biomolecules protease inhibitors and other essential components. Almost all of these phytochemicals are beneficial components for the wellbeing of the human body. Each chapter of Volume 4 describes the phytochemicals and their experimental facts along with the clinical applications that will aid in understanding the purpose of this series.

**Pemphigus Vulgaris: Autoimmune Bullous Disease**  
*Danka Švečová, MD, PhD. (Professor of Dermatovenerology Comenius University, Faculty of Medicine, Bratislava, Slovakia)*  
In series: *Dermatology - Laboratory and Clinical Research*  
Hardcover: 978-1-63463-317-8, $170.00.  
Pemphigus vulgaris (PV) is the most frequent condition inside the pemphigus group, especially in Europe and North America. It is the prototype of a genetically mediated disease. The HLA alleles associated with PV are well-known. Recent studies found an association between disease severity and some HLA DRB1 and DQB1 alleles. The author of this book discusses the management of PV that should be started with an evaluation of disease severity.

**Primary and Secondary Glomerulonephritis: Signs, Symptoms and Treatment**  
*Foteini Lamprianou (Nephrology Department, General Hospital of Rhodes, Greece)*  
In series: *Renal and Urologic Disorders*  
Hardcover: 978-1-63463-541-7, $170.00.  
Glomerulonephritis is a term referring to direct injury of the glomeruli with resulting disturbances of normal glomerular function, progressively leading to renal failure. Glomerular diseases are classified as primary, where glomerular damage is the prime disturbance, with extrarenal manifestations as a result of renal impairment, and secondary, following systemic disorders, infections or exposure to certain drugs. Although noteworthy progress has been made in the past years in the symptomatic and specific treatment, therapy of both primary and secondary glomerulonephritics can be challenging. Management of these patients requires early diagnosis, expert knowledge of the immunosuppressive agents and other drugs currently available for the treatment of each glomerulonephritis, consideration of possible adverse reactions to these drugs, alternative therapeutic strategies in cases of hyporesponsiveness or non-responsiveness of the patient to the treatment, and possible relapses of the disease. This book reviews knowledge of the main primary and secondary glomerulonephritis, with emphasis on current therapeutic strategies and practical recommendations. Glomerulonephritis are grouped according the presence or absence of proliferative histological alternations into primary and secondary proliferative and non-proliferative types. Each chapter deals with etiopathogenesis, epidemiology, pathology, clinical manifestations, natural history and therapeutic options of the commonest primary and secondary glomerular diseases, with exception the last chapter that covers inherited diseases with renal involvement. An atlas of the pathology of the glomerular diseases discussed completes this work.

**Public Health and Harm Reduction: Principles, Perceptions and Programs**  
*Meredith B. Morris*  
In series: *Public Health in the 21st Century*  
2015. 159 pp.  
Hardcover: 978-1-63482-159-9, $110.00.  
Public health is a part of the health system whose researchers have tried to maintain its relevance over the years amidst unstable global conditions. Maintaining its tripartite objective of promoting health, preventing diseases and prolonging life is a major hurdle especially as these functions have to depend on the combined efforts of society. This book focuses on principles, perceptions and programs of public health. Some of the topics discussed in this book include school shootings; waste management and public health; and tobacco use.

**Rheumatism: Its History from Paleo-Pathology to the Advent of Experimental Science**  
*Thomas G. Benedek (University of Pittsburgh, School of Medicine, Pittsburgh, PA, USA)*  
In series: *Rheumatism and Musculoskeletal Disorders*  
Hardcover: 978-1-63482-712-6, $135.00.  
Beginning with paleo-pathologic evidence of diseases in ancient Egypt that now are considered rheumatologic, the history of the development of beliefs and concepts of “rheumatism” is traced from about 1000 BCE to the beginning of relevant experiment-based science in mid-19th century. An introduction traces the etymology and modern introduction of “rheum.” The main text is divided chronologically into five chapters, each with detailed references. These, as far as possible, come from primary sources, with an emphasis placed on historically revealing quotations. Chapter 1 describes paleo-pathology and the earliest written record to 800 CE; chapter 2 covers the “Dark Ages” to Renaissance (900 – mid 16th century). Chapter 3 discusses the beginning of scientific observations in the 17th century. Chapter 4 includes 18th to early 19th century shedding of ancient concepts to the beginning of modern quantitative science. Finally, chapter 5 chronicles the recognition of uric acid and its relationship to gout. This overlaps with chapter 4 and brings the gout part of the story to the late 20th century. A glossary of terms that may be unfamiliar to some readers is appended. While this pre-scientific history of medicine is focused on the development of the concept of rheumatism, the philosophic timeline is applicable to Western medicine in general.

**Therapeutic Physical Activities for People with Disability**  
*Li Li and Shuqi Zhang (Department of Health and Kinesiology, Georgia Southern University, Statesboro, GA, USA)*  
In series: *Disability and the Disabled - Issues, Laws and Programs*  
Hardcover: 978-1-63482-219-0, $230.00.  
Physical inactivity has been recognized as one of the common modifiable risk factors for non-communicable diseases such as heart disease, stroke, cancer, chronic respiratory diseases and diabetes. Increased level of physical activity is very effective for health maintenance. In this book, experts from all over the world present evidence for therapeutic physical activities illustrated by different cases. Physical activity can serve as both a preventive measure and a rehabilitation tool. The contents of this book cover the benefits of physical activity from young children with cerebral palsy to older adults with Parkinson’s disease. Some chapters focus on specific illness, such as asthma; others study more popular problems like lower back pain. Furthermore, fall risks increase with age. It is a growing problem among the elders, their family, the community, the governments, and the world at large. There is a chapter in this book discussing this issue specifically. Individuals with one of the impairments touched upon in this book, as well as their families, doctors and other health workers can benefit from its contents. The topics of this book include kidney disease, coronary or peripheral artery disease, asthma, vascular impairments, obstructive sleep apnea, cancer, lower back pain, Alzheimer’s disease, dementia, Parkinson’s disease, risk of falls, autism spectrum disorder, and cerebral palsy. Students and researchers can use this book as reference when they investigate the effects of physical activity as a preventive measure or therapeutic modality for other populations.

**Urolithiasis: Symptoms, Management and Prevention Strategies**

*Joseph Fletcher*

*In series: Renal and Urologic Disorders*


Hardcover: 978-1-63463-500-4. $110.00.

e-book: 978-1-63463-530-1. $110.00.

Urolithiasis is one of the oldest documented medical ailments with archeological evidence showing that humans have suffered from kidney and bladder stones for centuries. Urolithiasis is a common multifactorial problem with multi-effect on the patients’ quality of life and an economic burden on the individual and the health system of the country. Various intrinsic and extrinsic factors are associated with the risk for stone formation. Among intrinsic factors are race, sex, and genetics. Finding the cause of urolithiasis or establishing it early in life will reduce the consequence and complications of kidney stone disease and hence reduction of the cost in the treatment by establishing preventative measures in addition to patient education. Genetic factors play an important role in the etiology of urolithiasis as a polygenic (common) or monogenic (rare) forms, however its knowledge and early diagnosis is important for achieving the goals of reducing patient suffering as well as economic burdens that inevitably follow a diagnosis. This book discusses the symptoms, management and prevention strategies of urolithiasis.

**Health Care**

**Quality of Health Care: From Evidence to Implementation**

*Joel Rodriguez-Saldana, M.D. (Resultados Medicos, Desarrollo e Investigacion Inc, Mexico)*

*In series: Health Care in Transition*


Hardcover: 978-1-62808-711-6. $250.00.


The pursuit of quality has been a human endeavor since ancient times, which accelerated in the 20th Century in the industry through the vision and contributions of Shewart, Juran and Deming, who created the basis of disruptive innovations in science and technology, and contributed to the advance of industrial leadership in Japan. Quality became an essential component of industry, and has evolved with the emergence of new leaders like Feigenbaum, Crosby and Oakland. Garvin described that quality is measured from multiple perspectives, including manufacturers, payers and consumers. Albeit the practice of medicine has been considered an art beyond the scope of measurement or improvement, efforts to improve the quality of health care have also occurred. In the last three decades, a vibrant movement to improve the quality of health care has sprung up, under the leadership of the United States, Europe, Japan and Australia. This book delivers a comprehensive view, and an inviting approach to integrate its components and the challenges of measurement and innovative strategies of implementation, individual and social support.

**Immunology**

**Behçet’s Disease: Progress in Recent Years and Unmet Needs for the Future**

*Sunsei Hirohata, M.D. (Department of Rheumatology and Infectious Diseases, Kitasato University School of Medicine, Kitasato, Minami-ku, Sagamihara, Kanagawa, Japan)*

*In series: Immunology and Immune System Disorders*


Hardcover: 978-1-63482-893-2. $190.00.

e-book: 978-1-63482-941-0. $190.00.

Behçet’s disease is a chronic relapsing inflammatory disease of unknown etiology involving multiple organs. Along with blindness, other bodily functions are greatly affected by this disease; conditions of the vascular, intestinal and central nervous systems are usually life threatening and require aggressive therapy. Recently, significant progress has been made in several areas of this disease. The introduction of biological agents (such as anti-TNF) have had a positive impact on the effectiveness of treatments. However, there are still a number of unmet needs in various fields of this disease. Despite this, there remains a number of unaddressed issues concerning the treatments of this disease. Several genes have been shown to be associated with this disease, in addition to HLA-B51. Abnormalities in several subsets of T helper cells have been implicated in the pathogenesis of Behçet’s disease. Recent advances in the field of innate immunity have shed light on the new aspects of Behçet’s disease; that is, this disease has both autoimmunity and autoinflammatory aspects. On the other hand, there are still controversies as to the diagnosis and treatment of recalcitrant manifestations of the disease. This publication highlights the most recent understanding of Behçet’s disease and raises several unanswered questions in both basic to clinical treatment of this ailment. The contents of this book are primarily based on the most up-to-date results of research programs sponsored by the Japanese government as well as findings from Korean researchers. In particular, novel classification for neurological involvement (which has been discovered in Japan) led to the establishment of diagnostic criteria and treatment recommendation. Thus, this publication brings forth useful information for a variety of specialists who are involved in the management of this intractable disease.

**Medical General**

**Achilles Tendon and Ankle Injuries: Biomechanics, Management and Clinical Implications**

*Arthur Adams*

*In series: Muscular System - Anatomy, Functions and Injuries*

Adrenal Glands: From Pathophysiology to Clinical Evidence

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

In series: Endocrinology Research and Clinical Developments

E-book: 978-1-63483-570-1. $270.00.

The present book provides a state-of-the-art overview of the adrenal gland pathophysiology. It covers both up-to-date basic and clinical notions on adrenal glands. Amidst the molecular aspects, discussed by leading scientists in the field, there are ER stress, microRNA, hormone biosynthesis, and interactions with other organs. Clinical insights for students and physicians are also provided, from the imaging to the therapeutic management of common disorders of the gland, including adrenal failure, hyperaldosteronism, Cushing’s syndrome, neurologic disease, and cancer both in adults and pediatric patients. As mentioned above, chapter contributions are made by worldwide renowned experts, scientists and physicians, working in prestigious hospitals and universities including Brown, Oxford, Case Western Reserve University, Cleveland Clinic, Chinese University of Honk Kong, University of Tennessee, Indiana University School of Medicine, Monash Health in Clayton, Australia, University of Calgary, Northern Ontario School of Medicine and Laurentian University, Medical University of Gdańsk, Université Pierre et Marie Curie in Paris, France, University of Minho, Braga, Portugal, St. Vincent’s University Hospital in Dublin, Universities of LondoRNA, Athens, Sao Paulo, and Rio de Janeiro, Brazil. Throughout these chapters, the authors spotlight future avenues for research in basic pathophysiology and in therapy/prevention, in addition to thorough overviews of the current literature pertaining to the adrenal gland and its functional roles. The book also includes several color photographs, schemes and diagrams of molecular relationships, and tables that support and complement the text. The comprehensive and systematic overview provided within this book is expected to assist the reader in comprehending the importance of taking into account the functional roles of the adrenal gland and also to address questions and unresolved issues regarding the treatment of its disorders. Finally, the editor would like to express his sincere appreciation to all the contributors for their dedicated collaboration in this project. He would also like to thank Ms. Carra Feagaiga for her patient support. He sincerely hopes this book will enable readers to connect basic research principles with up-to-date clinical knowledge, thereby encouraging future discoveries and developments of new therapeutic strategies to treat disorders of the adrenal gland.

Age-Related Macular Degeneration: Prevalence, Risk Factors and Clinical Management

Melanie Carter

In series: Eye and Vision Research Developments


Hardcover: 978-1-63483-329-5. $110.00.

Age-related macular degeneration (AMD) is the leading cause of blindness in individuals older than 65 years of age. The authors of this book discuss the role of genetics, sunlight, diet, cardiovascular factors, smoking and alcohol as possible risk factors for AMD. Furthermore, the dry form is more common and accounts for about 85-90% of AMD patients in the USA, while Japanese AMD patients predominantly progress to wet-form or polypoidal choroidal vasculopathy (PCV). The function of a serine protein gene, HTRA1, in wet-form AMD patients is explored in detail. Conversely, the final chapter evaluates the therapeutic effects of high omega-3 fatty acids as anti-inflammatory agents in dry AMD patients. The preliminary findings indicate a promising therapeutic regime for dry AMD and perhaps for other retinopathies as well.

Arteriovenous Malformations: A Comprehensive Guide to Natural History, Diagnosis, and Management

Dale Ding (Resident Physician, University of Virginia, Department of Neurological Surgery, Charlottesville, Virginia, United States of America)

In series: Congenital Disorders - Laboratory and Clinical Research

2015. 221 pp.

Hardcover: 978-1-63483-189-5. $190.00.

Arteriovenous malformations (AVM) represent some of the most complex and challenging pathologies for the modern physician to properly diagnose and manage. In this comprehensive guide, we detail the natural history, diagnosis and management of AVMs. The first eight chapters are dedicated to brain AVMs. Chapter 1 describes the natural history of brain AVMs, the understanding of which is crucial to deciphering the relative risks and benefits of AVM treatment. Chapter 2 focuses on the surgical treatment of brain AVMs. Chapters 3 and 4 delineate the role of endovascular embolization in the management of brain AVMs. Chapter 5 analyzes the outcomes of stereotactic radiosurgery for Spetzler-Martin grade III AVMs, which are the most heterogeneous subgroup of AVMs. Chapter 6 describes the role of stereotactic radiosurgery for large brain AVMs, which are notoriously difficult to safely and effectively treat by any means. Chapter 7 focuses on heavily charged particle beam radiosurgery for brain AVMs. Chapter 8 puts it all together by analyzing the relationships and interactions among the different treatment modalities for brain AVMs; when utilized synergistically, the morbidity of each therapy is minimized while its maximum benefit is extracted. The last two chapters are dedicated to Osler-Weber-Rendu syndrome, also known as hereditary hemorrhagic telangiectasia (HHT). Chapter 9 describes the genetics, pathogenesis, and management of HHT, with a focus on the diagnosis of pulmonary AVMs. Chapter 10 evaluates the role of endovascular intervention in the treatment of pulmonary AVMs.

Beta-Lapachone: A Natural Cure

Jason Z. Li, Megan E. Kaufman, Zhenquan Jia and Y. Robert Li (University of Virginia, Charlottesville, VA, USA, Wofford College, Spartanburg, SC, USA)

In series: New Developments in Medical Research

2015. 100 pp.

Softcover: 978-1-63482-070-7. $62.00.
Beta-Lapachone is a natural quinone compound found in the lapacho tree bark. Studies over the past decades have demonstrated that this quinone compound possesses diverse biological activities. This book discusses the scientific findings regarding the role of beta-lapachone in treating a wide variety of human diseases in experimental models. These include cancer, cardiovascular disorders, and infectious diseases, among many others. It is hoped that this book would provide the reader an excellent example illustrating how a natural compound possesses such amazing capabilities to modulate the different aspects of cell biology to potentially impact the diverse human diseases.

**Brugada Syndrome: Clinical Manifestations, Diagnosis and Treatment**

*Hubert Shaw*

In series: *Congenital Disorders - Laboratory and Clinical Research*

2015. Softcover: 978-1-63483-691-3. $82.00.

e-book: 978-1-63483-709-5. $82.00.

Brugada Syndrome (BS) is a sudden cardiac death disease characterized by right bundle-branch block with ST segment elevation in the lead V1 and V2 in the absence of any structural diseases. This syndrome is highly associated with sudden cardiac death, especially in young adults. It is associated with a history of SCD in up to four first-degree family members. The authors of this book examine Brugada Syndrome (BS), and its possible link to arrhythmic cardiomyopathy. Furthermore, Type 1 ECG is considered a diagnostic sign for the Brugada Syndrome and its clinical significance is explored in this book. Lastly, the book presents the readers with a case report of a patient with Brugada syndrome characterized by an abnormal electrocardiogram (ECG).

**Bursitis of Major Joints**

*Alessandro Aprato (San Luigi Hospital of Orbassano, University of Turin, Torino, Italy)*

In series: *New Developments in Medical Research*


Hardcover: 978-1-63482-295-3. $110.00.


Inflammation or irritation of the bursa in the major joints is most often caused by repetitive, minor impact on the area, or from a sudden, more serious injury. It can also play a role in the joint injury. Work or play can also increase a person’s risk of bursitis. Incorrect posture at work or home and poor stretching or conditioning before exercise can also lead to bursitis. Anatomic deformities may also add stress on a bursa sac, causing bursitis. Stress or inflammation from other conditions, such as rheumatoid arthritis, gout, psoriatic arthritis, thyroid disorders, or unusual medication reactions may also increase a person’s risk. In addition, an infection can occasionally lead to inflammation of a bursa. The most common symptoms of bursitis are pain, stiffness and swelling. The pain may build up gradually or be sudden and severe, especially if calcium deposits are present. Bursitis diagnosis may occur after a clinical examination and it is usually confirmed by imaging such as with an ultrasound or MRI. X-ray images can’t positively establish the diagnosis of bursitis, but they can help to exclude other causes of your discomfort. Bursitis can be treated in a number of ways, including rest, nonsteroidal anti-inflammatory drugs, corticosteroids, injections of local anesthetic or corticosteroids, physical therapy and, in rare cases, surgery. The authors also discuss the treatment options for bursitis in this book.

**Campylobacter Infections: Epidemiology, Clinical Management and Prevention**

*Brittany A. Bertucci*

In series: *Allergies and Infectious Diseases*


Campylobacter jejuni is the leading cause of bacterial enteritis in the world and this zoonotic disease is principally transmitted by food and water. Campylobacter infections are characterized by several symptoms such as watery/bloody diarrhea, abdominal pain, fever, headache, nausea and vomiting which may persist for few days. Medical treatment may be conventional, often symptomatic, sometimes associated with the use of antibiotics in some severe cases. This book discusses the epidemiology, clinical management and prevention of Campylobacter infections.
Chapter 4, the authors present their research on acute limb compartment syndrome (LCS), which when left untreated, can result in muscle necrosis and limb loss, and in severe cases, death. Both the prevention and treatment of compartment syndrome in severe cases is examined in detail. Chapter 5 focuses on lower limb compartment syndrome, a clinical entity resulting from increased pressure in a non-expandable tissue space, which is associated with significant morbidity and mortality. Chapter 6 focuses on Paraspinal Compartment Syndrome (PSCS), resulting in the “Bourdon tube effect.” The last chapter, Chapter 8, reviews orbital compartment syndrome (OCS), a rare but treatable ophthalmic surgical emergency, caused most often by a retrobulbar hematoma, facial trauma being the most frequent etiological factor.

Complex Regional Pain Syndrome: Past, Present and Future
Nader D. Nader and Ognjen Visnjevac
(Anesthesiology and Pain Medicine, Dept. of Anesthesiology, SUNY-Buffalo, Buffalo, NY, USA)
In series: Pain and its Origins, Diagnosis and Treatments
Complex Regional Pain Syndrome (CRPS) is a chronic neuropathic pain disorder that involves one or more extremities with dystrophic changes of the skin, muscle, or bone. CRPS is characterized by constant regional neuropathic pain that does not follow the usual dermatomal distribution or nerve territory. In addition to neuropathic pain, patients suffer from sensory loss, autonomic dysfunction, vasculature changes and motor dysfunction in the region affected. As a debilitating disease with an unclear pathophysiology, patients suffering from this disorder often do not get the adequate level of care or treatment. Until recently, many clinicians believed CRPS was a purely psychiatric ailment and was lumped together with conditions such as conversion disorder. Recent strides in the understanding of response in both the nervous system and body to trauma has allowed researchers and clinicians to elucidate possible pathophysiology components for this disorder, as well as to better understand the CRPS patient. Currently, CRPS is viewed to be a multiple component disorder activated by the dysfunction of multiple systems. This includes local injury response, inflammatory response, central and peripheral nervous sensitization, abnormal vasculature changes and psychiatric component. Hence, not only are the pathophysiological mechanisms synthesized from current and past research discussed, but also the available pharmacological, intervention, and rehabilitative treatment modalities are reviewed in detail. From the neurophysiology of physical therapy and psychiatric interventions, to concepts in acupuncture, to evidence regarding peripheral and central nerve blocks and implantable devices, and to mechanisms involving supraspinal interventions used to directly manipulate brain circuitry, CRPS treatment options are examined in detail. Furthermore, as evidenced by the diverse and multimodal array of available and emerging treatment modalities, it is clear that CRPS management requires a truly interdisciplinary approach, highlighting this book as a central reference for multiple often-disconnected specialties. Furthermore, the mechanisms of action in each intervention strategy, current evidence base, and gaps in knowledge for management of CRPS are explored, with special emphasis on avenues for future research. CRPS is a pain syndrome that has seen an explosion of research in recent decades, due in part to the fairly recent development of internationally formalized diagnostic criteria. However, many questions remain; while some continue to build an evidence base for efficacy and safety of current therapies, others are delving into new pharmaceutical options, experimental therapies, and molecular-level strategies focused on epigenetic manipulation. Moreover, this plethora of emerging CRPS research will surely maintain this syndrome in the forefront of medical research and scientific discovery for the next several decades.

Contraception: Unmet Needs, Existing Options, and New Technologies
Alicia Y. Armstrong (M.H.S.C.R., Kensington, MD, USA)
In series: Obstetrics and Gynecology Advances
Hardcover: 978-1-63482-145-2. $110.00.
An estimated 41% of pregnancies are unintended. Globally, 86 million pregnancies are unintended. These unintended pregnancies resulted in 41 million abortions, 33 million unplanned births and 11 million miscarriages. Nearly half of all pregnancies in the U.S. are unintended, which is defined as any pregnancy either mistimed, unplanned or unwanted. Safe and effective contraception is clearly one of the most important areas of reproductive health for women. In this book, the authors review a number of topics in this important subject area. In the section on unmet needs, the authors review the unmet needs for contraception in the U.S., UK, Europe, Asia and the developing world as well as unmet needs in special populations such as adolescents, women with medical conditions and women living with HIV. The authors review the current options for contraception with special emphasis on efficacy, side effects and patient selection and identifies gaps in contraception options. Finally, the authors review some of the latest advances and innovations in contraceptive technology.

Current Status of Proinflammatory Cytokines in Periodontal Disease and During Periodontal Therapy
Nachiket Shah, M.L. Bhongade and Ritika Kriplani
(Periodontology and Implantology, Pune, India)
In series: New Developments in Medical Research
Hardcover: 978-1-63483-018-8. $110.00.
e-book: 978-1-63483-056-0. $110.00.
Periodontal diseases are chronic infectious diseases characterized by a destructive inflammatory process affecting the supporting tissues of the tooth. Numerous bacterial species have been isolated from subgingival plaque, which are closely associated with disease onset and progression. At the same time, there is strong evidence that destructive processes occurring as part of the host inflammatory response are responsible for the majority of the hard- and soft-tissue breakdown leading to the clinical signs of periodontitis. The characteristic clinical signs of chronic periodontitis occur mainly as a result of activation of host-derived immune and inflammatory defense mechanism. IL-1 and TNF induce expression of other mediators that amplify the inflammatory response, such as prostaglandins, and lead to production of lytic enzymes and stimulate the production of chemokines. Depending on its function, the cytokine have been classified into those which initiate and maintain inflammatory process, labelled as pro-inflammatory cytokines and those which exert an inhibitory effect on the immunologic response. These negative regulators, categorized as anti-inflammatory cytokines, include IL-4 and IL-10, inhibitors such as IL-1 receptor, antagonist soluble IL-1 and TNF receptors that act as a competitive blockers under pathologic conditions such as those that occur in periodontal disease. Noteworthy is the fact that cytokines which play an important role in inflammatory responses are also prominent regulators of normal tissue homeostasis. In fact, mRNA expression of cytokines that have been associated with periodontitis was constitutively detected, to some extent, in clinically healthy gingival tissues. The complex interaction of the cytokines at the molecular level is yet to be fully mapped. Additionally, further research pertaining to the other accessory arms of the cytokine network, such as the tissue metalloproteinases, the components involved in the acute phase of immunity as well as wound healing will augment the future of treating human periodontal disease via immunotherapy by modulating/controlling the key pro-inflammatory cytokines.
Endophthalmitis  
**Barbara Cole**  
In series: *Eye and Vision Research Research Developments*  
Hardcover: 978-1-63483-277-9, $110.00.  
Endophthalmitis refers to the inflammation of the intraocular tissues and fluids of the eye and can be non-infectious or caused by bacterial, fungal or parasitic infection. It can be classified as exogenous (post-operative, post-traumatic or as a complication of a corneal ulcer) or endogenous (secondary to hematogenous spread from another infected site). This book discusses the clinical manifestations, relevance of diagnosis, and involved species of fungal endophthalmitis. It also examines anti-vascular endothelial growth factor medications; prevention and treatment of postoperative endophthalmitis; and a pharmacokinetic review of antibiotics used in the treatment of endophthalmitis.

Environmental Toxicity and Alterations in Medicinal Plants  
**Bhupinder Dhir (Department of Genetics, University of Delhi South Campus, Benito Juarez Marg, New Delhi, India)**  
In series: *New Developments in Medical Research*  
Hardcover: 978-1-63483-097-3, $190.00.  
e-book: 978-1-63483-105-5, $190.00.  
Ever-changing environmental conditions and climatic transformations have affected each component of the environment. Increasing rates of soil, air and water pollution have altered the growth and production of vegetation to a greater extent and medicinal plants are also not spared from this. Medicinal plants form an important part of traditional and modern systems of medicine. The consumption of medicinal plants has increased over the last few decades. The present book provides detailed information on the topic with an emphasis on the effects of inorganic, organic (chemical), biological and other contaminants of medicinal plants. It provides a vast amount of information concerning the effects of various environmental factors on growth, productivity and secondary metabolite production in medicinal plants. The book also highlights the adverse effects of contaminants in plants and related toxicity of contaminated medicinal plants, with their possible effects on therapeutic efficiency and human health. The detailed information about the contamination and toxicity in medicinal plants will challenge the scientific community to find ways of countering many environmental adversities to protect, preserve and maintain many of the rare, highly valuable medicinal plants used in treating various diseases.

Evidence-Based Medicine and Practices: Principles, Implementation and Effectiveness  
**Ross T. Barnett**  
In series: *New Developments in Medical Research*  
In this book, an evidence-based approach to dietary and lifestyle medicine is taken. An approach known as "epidemiology-based health promotion," which compiles and presents available evidence that could help physicians, other healthcare professionals and members of the general public make wiser decision about healthcare, is also explored. Within this book, evidence-based practice (EBP) literature is reviewed, including literature on leadership and ethics in the field of internal medicine (compared to surgery) and how they affect the adoption of evidence-based medicine (EBM). A four-stage iterative model to identify procedures for implementing evidence based practices into applied settings is reviewed. The authors of the final chapter compare the cost-benefit and cost-effectiveness of all types of evidence-based medicine, both pharmaceuticals and non-drug complementary and alternative medicine (CAM) for all clinical conditions.

Eye Diseases Associated with Sleep Disorders  
**Mingwu Wang, M.D., Ph.D. (Department of Ophthalmology and Vision Science, University of Arizona College of Medicine, AZ, USA)**  
In series: *Eye and Vision Research Developments*  
Hardcover: 978-1-63482-894-9, $110.00.  
Sleep disorders are increasingly recognized to contribute to medical morbidities and mortality. More and more ocular diseases are linked to sleep disorders, among them in particular being obstructive sleep apnea. Management of these ocular diseases requires a good understanding of such association and often a collaborative approach with sleep disorder specialists. On the other hand, many patients with sleep disorders have concurrent ocular disorders. With this in mind, timely referral to ophthalmologists would greatly alleviate comorbidities and improve the quality of life in such patients. *Eye Diseases Associated with Sleep Disorders* emphasizes the underlying pathophysiology of each ocular disorder in the respective setting of sleep disorders. A typical case scenario is presented at the beginning of each chapter. The specific ocular disease is then described in reader-friendly terms to facilitate an overall understanding of the condition. The authors finally review the accumulated evidence regarding the association between ocular diseases and sleep disorders, from discussing possible underlying pathophysiology to the analysis of clinical study data. With a good understanding of the pathogenesis, this book helps bring together primary care clinicians with eye care specialists for managing patient morbidities in an easily digestible figure-rich format.

Geriatric Psychodermatology: Psychocutaneous Disorders in the Elderly  
**Mohammad Jafferany and Katlein França (College of Medicine, Department of Psychiatry, Central Michigan University, Saginaw, MI, USA)**  
In series: *Geriatrics, Gerontology and Elderly Issues*  
Hardcover: 978-1-63463-853-1, $170.00.  
The interaction between mind and skin diseases is the focus in psychodermatology. This important subspecialty is the result of the merging of two major medical specialties: psychiatry and dermatology. Research and existing publications in this field are mainly focused on the general population. The increase in life expectation and the increasing number of elderly individuals worldwide is making the geriatrics specialty more and more important. "Geriatric psychodermatology" is a combination of three medical specialties: Geriatrics, Psychiatry and Dermatology. The natural aging changes that occur in the skin can be a psychological challenge for many individuals, as well as various psychodermatological disorders pertaining to the elderly population, causing significant psychological and physical distress and impacting quality of life. This is the first book ever published about this unexplored and eminent topic. This book presents a new perspective of known psychodermatological diseases in elderly populations. Psychological implications, impact on quality of life and holistic and integrated management of psychocutaneous diseases are the main focus of this book. The authors invite you to explore the geriatric psychodermatology field.
Heterotopic Ossification: Basic Science, General Principles, and Clinical Correlates in Orthopedic Surgery
Bryan M. Saltzman (Rush University Medical Center, Chicago, IL, USA)
In series: Rheumatism and Musculoskeletal Disorders
Hardcover: 978-1-63482-899-4. $190.00.
Heterotopic Ossification: Basic Science, General Principles, and Clinical Correlates in Orthopedic Surgery is a comprehensive, informative approach to understanding the basics through the detailed complexities of heterotopic ossification (HO). The chapters in this book are structured into three main sections: (1) general principles of heterotopic ossification; (2) heterotopic ossification in major anatomic joints; and (3) additional topics and specifics of heterotopic ossification. Each individual chapter is a contribution from a leading expert in the respective subtopic of HO. As a cohesive unit, this book provides a complete reference for students, scientists, clinicians and orthopedic surgeons who find interest in HO or encounter it in the course of patient care.

Histone Deacetylase Inhibitors (HDIs): Pharmacology, Uses and Health Effects
Beverly D. Carson
In series: Recent Advances in Hematology Research
2015. 120 pp.
Hardcover: 978-1-63463-835-7. $110.00.
Histone deacetylase inhibitors (HDIs) are good anti-cancer targets. Histone acetyltransferases (HATs) and HDIs play opposite roles in the regulation of gene expression via an epigenetic mechanism. HATs catalyze the acetylation of lysine residues in histone tails, facilitating and sustaining gene transcription. HDIs remove the acetyl moieties from the epsilon-amine of lysine residues of histone tails, leading to a more condensed form of chromatin and preventing gene transcription. This book focuses on the use of HDIs for the treatment of lymphoid malignancies; myeloid malignancies; and breast cancer.

Hypospadias: Risk Factors, Epidemiology and Surgical Outcomes
Daniel H. Preston
In series: Renal and Urologic Disorders
Hardcover: 978-1-63482-023-3. $110.00.
Hypospadias is recognized as one of the most common congenital malformations in male newborns, resulting in an abnormal opening of the urethral meatus. It is regarded as a multifactorial disorder in which interactions between genetics, maternal and environmental factors lead to hypoplastic development of the ventral side of the penis, either dependently or in an interaction with other factors. This book discusses the risk factors of hypospadias. It also examines the epidemiology and surgical outcomes of hypospadias.

Impaired Glucose Tolerance and Insulin Resistance: Risk Factors, Management and Health Implications
Sandra Wagner
In series: Endocrinology Research and Clinical Developments
Softcover: 978-1-63483-085-0. $82.00.
The prevalence of type 2 diabetes mellitus (T2DM) has been increasing worldwide, and it is becoming a public health concern. In this book, the pathophysiological risk factors of progression from normoglycemia to prediabetes and the lifestyle modifications and pharmacological interventions for preventing or delaying the development of glucose intolerance is examined. Furthermore, the insulin signaling pathway regulates the cellular uptake of glucose and wholebody metabolic homeostasis in mammals. This book explores the improvement of estrogen signaling in preventing the comorbidities of insulin resistance. The next chapter focuses on nutritional management during the perioperative period, focusing on glucose metabolism and insulin sensitivity. There are three major problems for nutritional management during the perioperative period. These problems are addressed and suggestions are made on how to alleviate them. Finally, Cystic Fibrosis (CF) is the most common lethal inherited disorder in Caucasians, affecting 1 in 2,500 - 2,800 live births. The last chapter examines impaired glucose tolerance in cystic fibrosis.

Leg Ulcers and Chronic Wounds: Symptoms, Treatment and Prevention
Simon Green
In series: New Developments in Medical Research
A leg ulceration is a common, chronic, recurring condition. The majority of leg ulcers are due to venous and/or arterial disease. In this book, the future trends in the management of leg ulcers are discussed. The prognostic factors and risk factors are examined as well. Other chapters present a review on the impact of drugs commonly prescribed in clinical practices, and discuss their beneficial or detrimental role in chronic leg ulcers; a papain-based gel for the treatment of leg ulcers (papain is known for treating wounds of various etiologies and in several healing stages); compression therapy and ultrasound as therapy for leg ulcer treatment; an examination of the main antibiotics and antiseptics that are available for the therapeutic management of chronic leg ulcers, chronic wounds and the limitations of their use; and finally, the chapter provides the readers with a modulation of the foreign body response to treat chronic wounds.

Neutropenia: Causes, Signs, Symptoms and Treatment
Mojtaba Akhtari, Ihab El-Hemaidi and Kam Newman (Jane Anne Nohl Division of Hematology and Center for the Study of Blood Diseases, University of Southern California (USC)/Norris Cancer Center, Los Angeles, CA, USA)
In series: Recent Advances in Hematology Research
Hardcover: 978-1-63482-105-6. $95.00.
This book discusses different aspects of neutropenia including drug-induced neutropenia, which is quite common, and neutropenia in chemotherapy-treated patients. The authors offer an all-encompassing approach to the pathobiology and treatment of neutropenic disorders. This book reviews current information concerning neutropenia. There have been significant advances in medicine; however, bacterial infections continue to contribute significantly to morbidity and mortality in patients with neutropenia particularly cancer patients who develop chemotherapy-induced neutropenia. In this setting, it is important to understand pathophysiology of neutropenia and have a logical approach in diagnosis and treatment of neutropenia. Gathering all this information in one book will be of immense benefit for healthcare workers including physicians, pharmacists, physician assistants, nurse practitioners and nurses and this in turn will help them improve the care of their patients. It will also be of benefit for
pharmacists as a source of clinical and pharmacological knowledge. For researchers undertaking research in the field of hemato- oncology or pharmacology, this will be a useful starting point for reviewing the literature. The editors have tried to allow information in book chapters to show different aspects and various view points on related issues.

Novel Challenges in Myasthenia Gravis
Tommaso Claudio Mineo, M.D. (Professor and Head Dept. of Thoracic Surgery, Policlinico Tor Vergata University, Rome, Italy)
In series: Muscular System - Anatomy, Functions and Injuries
Myasthenia gravis is a complex subject, multidisciplinary and challenging in terms of its clinical, therapeutic and evolutionary aspects. This is evident in the gradual changes over time and in the variety of clinical presentations, the mutable therapeutic responses and the difficulties to standardize the evaluation of results. It is remarkable that myasthenia gravis is a disease of many advances in the field of myasthenia gravis. This book is proof of considerable progress made and of the fact that new knowledge today is acquired in shorter time than in the past. This acceleration is a signal of many successful technological advances in clinical and laboratory research. Even in myasthenia gravis, as in other research areas, researchers expect more from new achievements in rapid growing disciplines such as with immunology and genetics. To this, the authors' wanted to draw the attention of the readers.

Obstructive and Central Sleep Apnea
Joan McCormick
In series: Otolaryngology Research Advances
Softcover: 978-1-63483-335-6. $82.00.
e-book: 978-1-63483-360-8. $82.00.
The spectrum of sleep-disordered breathing ranges from primary snoring at one end to obstructive sleep apnea and central sleep apnea at the other end. The first chapter in this book provides current state of knowledge about the mechanisms of obstructive sleep apnea and central sleep apnea and reviews emerging therapies for these disorders. Furthermore, sleep apnea usually has multifactorial causes and affects multiple organic systems resulting in increased cardiovascular morbidity, disturbing sleep quality, metabolic balance, glucose and cholesterol levels, arterial hypertension and thus increasing cardiopulmonary and vascular morbidity. The second chapter summarizes the main findings in literature and provides a brief and concise differential diagnosis. The authors of the third chapter expose and discuss current evidence of neurosurgical conditions and their role in the genesis and progression of sleep apnea. They emphasize the adequate treatment and future perspectives. The following chapter examine the effect of obstructive sleep apnea syndrome (OSAS) on the eye. Different ophthalmologic disorders are associated with OSAS including floppy eyelid syndrome, retinal vein occlusion, and central serious retinopathy. The last chapter in this book is focused on QT dispersion in patients with obstructive sleep apnea, with increased QT dispersion potentially reflecting disturbed myocardial repolarization and predisposition to cardiac arrhythmias.

Pain and Pain Relief
Kyung-Hoon Kim, M.D., Ph.D. (Professor, Department of Anesthesia and Pain Medicine, School of Medicine, Pusan National University, Pusan, Korea)
In series: Pain Management - Research and Technology
2015. 298 pp.

Physical Exercises: An Important Tool for Physical Therapy
Cleber Ferraresi (Federal University of São Carlos, Rodovia Washington Luís, São Carlos, São Paulo, Brazil)
In series: Physical Medicine and Rehabilitation
When people think about physical exercise, they imagine athletic competitions and sculpted bodies. More than simply a way to achieve the best performance or a beautiful shape, physical exercise can promote and reestablish health. Physical therapy is a specific area of the health sciences specialized in treating and recovering the human body impaired by illness, an accident or surgeries. In order to restore the human body’s functionality, physical therapy has several different techniques and resources that include physical exercises as an important tool used in rehabilitation programs. Throughout this book, you will encounter different physical exercises used in physical therapy to evaluate and establish rehabilitation programs. These are aimed at revitalizing the body’s function in five different areas: cardiorespiratory, orthopedics, neurology, gynecology and gerontology. In the cardiorespiratory section, you will understand the importance of oxygen provision during postural challenges a dynamic exercises. In addition, this same section explains the beneficial effects of physical exercises for patients with coronary artery disease and how physical exercises are used for pulmonary rehabilitation. The orthopedics section has very important concepts about how physical exercises are used to treat patellofemoral pain, knee osteoarthritis and shoulder dysfunctions. The neurology section brings actual concepts about the use of gait training for neurological rehabilitation; it explains the importance of strength training applied to neurorehabilitation and how physical exercises can be used to treat children with cerebral palsy. The gerontology section demonstrates the importance of motivation and adherence to physical exercises by elderly adults and also their dropout. Finally, the gynecology section brings concepts and physical exercises to evaluate and rehabilitate the pelvic floor muscles. It also brings to light the effects of physical activity on these muscles in pregnant women. After reading this book, you will increase your knowledge about how physical exercise can assess, treat and promote health for the life of your patients and your own life.
Principles of Renal Medical Procedures
Ioannis Griveas (Consultant Nephrologist, Medical Director of Nephrology Department 401 Army Hospital of Athens, Greece)
In series: Nephrology Research and Clinical Developments
2015. 121 pp.
Hardcover: 978-1-63483-222-9. $110.00.
e-book: 978-1-63483-254-0. $110.00.

The field of interventional nephrology needs to be viewed as a new road towards improving the diagnostic methods and the dialysis access care provided to chronic kidney disease patients across the world. The above issues remain a weak link in the training of young nephrologists and a major hurdle both in the planning and maintenance phase of renal replacement therapy, as well as in the accuracy and safety of diagnosing renal impairment causation. Traditionally, the procedural aspect of care has been left in many cases to surgeons and/or radiologists. The above facts lead in many cases to patient inconvenience and high health care cost. The aim of this book is not only learning the necessary skills to perform renal medical procedures, but for nephrologists to assume leadership roles in coordinating a team to provide the best possible care. Mostly, this book is focused on details and “secrets” that can make the results better than we expect. Introducing renal physicians to the insertion of tunneled lines, medical insertion of peritoneal catheters and kidney biopsies (native and transplant) from the nephrologist’s view is a great need in renal society. The primary focus of this book is to generate interest and awareness of the scope of interventional nephrology. The nephrology community across the world needs to evaluate the available resources to discuss the role of various team members and strive to improve patient care. Editors’ and authors experiences are exposed in the book, which tends to help the growth and progress of this subspecialty. The trend is also seen as a recruiting tool to train the nephrology workforce in the future.

Pulmonary Arterial Hypertension and Nifedipine: Pathogenesis and Management
Victoria Estrada
In series: New Developments in Medical Research
2015. 146 pp.
Hardcover: 978-1-63482-594-8. $110.00.

Pulmonary arterial hypertension (PAH) is a progressive, fatal syndrome characterized by increased vascular resistance that leads to right-ventricular hypertrophy and heart failure, eventually leading to death. The chapters of this book describe the molecular mechanisms and cellular events regulating vascular remodeling in PAH; the various animal models and drugs currently being used in various laboratories to study mechanisms leading to pulmonary arterial hypertension; and nifedipine, its pharmacology and its role in the management of pulmonary hypertension and some of the drawbacks concerning its use. The authors also discuss drug delivery systems that can lead to different crystallization forms of the immobilized drug which can lead to better solubility and bioavailability.

Quality of Life in Endocrine Diseases
Erika Cesar de Oliveira Naliato (Coordinator of the Ricardo A.T. Castilho Center of Studies of the Teresopolis Medical Association, Brazil)
In series: Endocrinology Research and Clinical Developments
Hardcover: 978-1-63463-911-8. $95.00.
e-book: 978-1-63463-936-1. $95.00.

Studies have shown that low quality of life is a risk factor for increased hospitalization, diminished adherence to treatment, and increased morbidity and mortality. Recently, quality of life has been an area of interest in endocrinology. Studies have demonstrated that it is reduced in disturbances such as diabetes mellitus, obesity, thyroid diseases, Cushing’s disease, and pituitary tumors. This book aims at reviewing recently published data on quality of life in endocrine diseases. It presents the available data on quality of life in non-functioning pituitary tumors, prolactinomas, acromegaly, GH deficiency, Cushing’s syndrome, hypo- and hyperthyroidism, hypogonadism, diabetes mellitus, and obesity.

Sarcoidosis: Clinical Manifestations, Diagnostic Methods and Management Strategies
Darren Harper
In series: New Developments in Medical Research
Hardcover: 978-1-63482-891-8. $110.00.

Sarcoidosis is a multisystem granulomatous disease of unknown etiology. It can occur at all ages, with the incidence peaking at 20 to 40 years. This book reviews the epidemiology, etiology, pathology, clinical manifestations, diagnosis and management strategies of sarcoidosis, while highlighting recent studies that have provided new insights into this unique and debilitating disease. The authors also specifically point out the urological manifestations of sarcoidosis to avoid misdiagnoses and to provide early intervention.

Sarcoplasmic Reticulum: Structure, Development, Roles and Evolution
Rigers Baku (Department of Agriculture and Fisheries, Faculty of Agriculture and Environment, Agricultural University of Tirana, Lecturer, Researcher and Head, Aquaculture and Fisheries Research Group, Albania)
In series: Muscular System - Anatomy, Functions and Injuries
Hardcover: 978-1-63482-839-0. $110.00.

Muscle cells, including cardiomyocytes, contain a specialized smooth endoplasmic reticulum (ER), sarcoplasmic reticulum (SR) calcium ions (Ca2+) release and reuptake by the sarcoplasmic reticulum trigger the contraction and relaxation of the myofibrils, respectively. This book examines the control and modulation of the SR and how this may vary among skeletal and cardiac muscle without bypassing the smooth muscle. It presents new and exciting work in this area and identifies the advances in this relatively unexplored field, offering new insights into the role of SR communication with other organelles and the new concepts about ER stress. Generally, this scientific book brings together contributions from key workers—both in basic and clinical sciences—whose studies range from physiological to pathological and molecular to whole animal. In this book, the authors provide insights into the evolution of SR design and function.

Self-Fragmentation and Self-Integration in People with Schizophrenia. Volume 1: A Multi-dimensional Interpretation and Recovery
Kam-shing Yip (Department of Applied Social Sciences, The Honk Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong)
In series: Mental Illnesses and Treatments
Schizophrenia has long been regarded as the most important mental problem since the twentieth century. Apart from the biochemical and genetic models, there are many psychosocial theories including psychodynamic, cognitive behavioral, phenomenological, existential, biochemical as well as social construction perspectives in explaining the cause and recovery of schizophrenia. Under the domination of biochemical and genetic models, the treatment, services and recovery work for clients with schizophrenia are undermined. Professionals may follow the recovery orientation and focus on hospitalization as the sole concern in recovery and treatment. However in doing so, they fail to connect with the rich and solid foundation of related theories in schizophrenia in past centuries. In addition, the subjective experiences of people with schizophrenia are severely ignored and neglected by related parties. This book serves to bridge this theoretical gap by a profound revisit of different perspectives and concepts in self-fragmentation of persons with schizophrenia. Within phenomenological, psychodynamic, sociological and existential perspectives, clients with schizophrenia harbor an intense urge for an integrated self-system and ontological existence behind their fragmented psychotic experiences. Within the self-fragmentation and self-integration dilemma, three dynamic forces are identified. They are self-splitting versus self-cohesions, self-concealment versus self-visibility, and self-destruction versus self-preservation. This integration, when it occurs, can finally lead to a full mental health recovery. That includes three positive forces: self-cohesion, self-visibility and self-preservation, which enable the individual with schizophrenia to restore a normal integration system with a normal life and social functioning within an integrated and supportive community.

Sickle Cell Disease: Genetics, Management and Prognosis
Marily E. Lewis
In series: Recent Advances in Hematology Research
Hardcover: 978-1-63482-828-4. $110.00.
Sickle cell disease (SCD) is a genetic disorder caused by an abnormality of hemoglobin. The disease is characterized by a chronic hemolytic anemia. The search for affordable and accessible medicines mainly from plants and having various modes of actions for managing SCD is a priority in Africa where the disease is endemic. The first chapter in this book reviews children with Sickle Cell Disease (SCD). The authors also present their research that shows that clinically, children with SCD behave differently regarding their genetics. The second chapter gives an overview of the current progress in research in calcium handling in red blood cells of sickle cell disease patients, followed by an outlook into the potential use of blockers of the cation channels for therapy of SCD patients. The third chapter reviews and validates the pharmacological relevance of "Gardenia ternifolia" and sustains the use of this herbal medicine in the management of SCD in traditional medical systems. The fourth chapter reviews the search and the development of antickicking herbal drugs in Africa, where Sickle cell disease (SCD) is an endemic. The last chapter reviews SCD and its impact on sexual functioning as well as relationship dynamics. Conclusions support the importance of social support and its far-reaching impact into the coping mechanisms of patients with chronic illness as well as quality of life.

Sun Exposure: Risk Factors, Protection Practices and Health Effects
Collin P. Raines
In series: Dermatology - Laboratory and Clinical Research
Hardcover: 978-1-63482-087-5. $110.00.
Sun protection practices play a prominent role in dermatology in terms of photaging, photocarcinogenesis, and photodermatoses. This book begins by outlining the various methods of sun protection. It continues to discuss risk factors for sun exposure during spring break among college students; the role sun exposure plays in skin aging; and protection habits and vitamin D levels in children and adolescents with a history of malignancy.

Telemedicine: Emerging Technologies, Applications and Impact on Health Care Outcomes
Haider Raad Khaleel (University Professor, Electrical Engineering, California State University, Sonoma, CA, USA)
In series: New Developments in Medical Research
Hardcover: 978-1-63483-435-3. $190.00.
While the history of telemedicine dates back to the invention of the telephone about a hundred and fifty years ago where medical consultations were provided by physicians over the telephone, breakthrough technological advancements over the past couple of decades brought medical care to nearly all corners of the world. Considering the impact on the medical care sector, telemedicine has become a growing interdisciplinary field, which will undoubtedly be able to improve access to affordable health care and bypass space and time barriers. However, successful deployment of this vision is not only determined by innovative telemedicine applications but also on continuous technology support. Moreover, in practice, new social, economic, and political challenges are continuously emerging, which require serious attention. This book, organized into ten chapters, reviews the emerging technologies, applications, and current trends in teledmedicine. Moreover, it introduces new research findings, case studies, and continental experiences in this exciting field. The book is primarily intended for readers ranging from health management professionals, medical doctors, nurses, biomedical engineers, to scientists in areas of research and development, as well as university professors. Moreover, the book potentially serves as a reference for graduate students working on relevant telemedicine topics.

The Development of the Human Trophoblast
Alberto Rossi (University Hospital of Udine, Udine, Italy)
In series: Obstetrics and Gynecology Advances
Softcover: 978-1-63482-296-1. $82.00.
e-book: 978-1-63482-320-3. $82.00.
Trophoblasts (from Greek trephain: to feed, and blastos: germinator) constitute a particular population of cells forming the outer layer of the blastocyst, providing the embryo with nutrients and giving rise to the outer chorionic sac and the fetal component of the placenta. The trophoblast facilitates embryonic implantation via its inner layer of mononuclear cytotrophoblasts and its outer layer of multinuclear cytoplasm, the syncytiotrophoblasts, forming the early connections between the embryo and the maternal endometrium. The cells of the trophoblast have many qualities, exhibit important functions and have an important role in the development of the placenta; also, they work as a regulator during early growth of the embryo. This volume provides a detailed summary of knowledge regarding the development of the trophoblast during the First Trimester of Pregnancy, the process of placenta apoptosis and the factors causing aging of the placenta. The pathology of trophoblast can manifest itself in several clinical conditions during pregnancy such as intrauterine fetal growth restriction (IUGR), gestational trophoblastic disease and pre-eclampsia. The analysis of the pathogenetic mechanisms involved in these critical conditions are discussed in this book. These aspects are analyzed with scientific methodology on the basis of updated studies. "Development
of Human Trophoblast” can be considered a reference book for every pathologist, obstetrician and resident.

The Fundamental Role of Muscle Contractions in Musculoskeletal Diseases: An Introduction to Brachymyotherapy
Jan Polak, M.D. (President of the International Brachymyotherapy Society, Labarthe, France)
In series: Muscular System - Anatomy, Functions and Injuries
Hardcover: 978-1-63482-301-2. $190.00.
e-book: 978-1-63482-324-1. $190.00.
In the explanation of musculoskeletal disorders, the skeleton is usually put forward, and the muscles tend to be forgotten. This seems to be a mistake, and leads to some common misunderstandings, like osteoarthritis being the cause of joint pain, rheumatoid arthritis being an auto-immune disease, disc herniation as the cause of low back pain, meniscal injury as the cause of knee pain, etc. This in turn will lead to inappropriate treatments like painkillers - which sometimes kill the patient, and anyway never treat the root of the pain - or conversely, can often to avoidable surgery. Misunderstanding the role of muscle contractions in other ailments like scoliosis or migraine has not allowed so far a disease-modifying treatment. All the above-mentioned disorders can however be cured, in most cases, by manually treating the causal muscle contractions, which is rather simple. This book explains the origin, the mechanism and the consequences of muscle contractions, as well as the pathomechanisms of joint pains, scoliosis, migraine, and several other diseases, and the principles of their treatment. We will present several research studies showing the efficiency of a simple manual treatment of the contractured muscles that are the prime movers of these diseases.

The Ophthalmology Clinical Trials Handbook
Laura Vickers, and M. Tariq Bhatti (Ophthalmology and Neurology, Duke Eye Center, Durham, North Carolina, USA)
In series: Eye and Vision Research Developments
The field of ophthalmology has advanced considerably in the past several decades in terms of surgical and technical advancements, understanding the mechanism of diseases and treating conditions that were once considered untreatable. As is the case with so many other specialties in medicine, ophthalmology is guided by “evidence based medicine,” based on the results of randomized controlled trials (RCTs). To put this powerful information in the hands of clinicians, this handbook was developed to provide a succinct yet comprehensive review of the most essential evidence-based medicine in ophthalmology. This essential text forms a framework for the evidence-based clinical practice of ophthalmic technicians, residents, academic and private practitioners of ophthalmology as well as researchers, optometrists and others. It also serves as a core review text for tests such as the OKAP and ophthalmology board exams, which emphasize knowledge based out in the outcomes of major RCTs. This text covers the major research carried out in all of the subspecialties of ophthalmology including cornea, medical and surgical retina, glaucoma, ocularplastics, neuro-ophthalmology, and pediatric ophthalmology. Each chapter has been carefully edited by top academic faculty at the Duke University Eye Center, who have an intimate understanding of the essential knowledge contained within the current ophthalmic literature and have contributed commentary on the results. This book therefore is not only a convenient review of the vital knowledge in ophthalmology, but also provides a keen analysis by world experts of the most up-to-date research in their respective fields.

In short, this book promises to change the way eye care professionals use RCTs in clinical practice by putting this powerful information conveniently in their hands.

The Origin of Diseases
Yun-Chul Hong (Daehakno, Chongno-Gu, Seoul, South Korea)
In series: Pain and its Origins, Diagnosis and Treatments
While covering human history, civilization, and diseases to reveal why humans are sick with many ailments, this book provides the answers to the questions: “When, why, and how did humans contract all kinds of infectious and chronic diseases?” The increasing occurrence of chronic diseases such as obesity, diabetes mellitus, asthma and cancer does not simply denote increment in the incidence of diseases, but a pathological phenomenon that reflects the condition of humanity’s current environment. With humanity’s graduation from the era of hunter-gatherers, infectious diseases and nutritional disorders started to appear at the beginning of the agricultural revolution. Humanity then shifted to an age of chronic diseases such as obesity, diabetes mellitus, asthma, and cancer, as they entered the era of affluence in the wake of the industrial revolution. Moreover, the disease pattern characterized by such chronic diseases is expected to change again soon to a new trend characterized by neurodegenerative diseases such as Alzheimer’s disease and Parkinson’s disease. When contemplating the path of disease development and transition, we should simultaneously consider two aspects of humanity: as a biological being who adapts to his or her surrounding environment, and as a cultural creator who transforms and recreates the environment, because the changes in human behavior have as much impact on the direction of disease transition as our genes and environment do. Therefore, only after we appropriately understand the history, environment, and disease development of humanity will we be able to establish an adequate strategy for coping with diseases. We would have the upper hand if we have a better understanding of the origin of diseases. In five sections, this book shows how to understand such diseases through the intertwined process within the wide framework of human history.

Thyroid Nodules: Risk Factors, Diagnosis and Management
Marsha Vasquez
In series: Endocrinology Research and Clinical Developments
Hardcover: 978-1-63483-592-3. $110.00.
Thyroid nodules are commonly diagnosed in adults, although they are rare in children affecting only 1% - 2% of this population. Since the late 1960’s, ultrasound (US) has become essential in the examination of the thyroid gland as a non-invasive, rapid and easily reproducible imaging study. This book provides the reader with a framework from which to develop a differential diagnosis, risk factors and evaluation plan for both children and adults presented with thyroid nodules. Risk factors and management of a thyroidectomy are presented as well, and the challenges it poses for the surgeon who undertakes endocrine surgery. The final chapter evaluates the association between Hashimoto’s thyroiditis and differentiated thyroid cancer.
MEDICINE

Advances in Medicine and Biology. Volume 84
Leon V. Berhardt
In series: Advances in Medicine and Biology
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 documenting and describing the methods and value of medical therapy management programs; immune reconstitution inflammatory syndrome in cryptococcal meningitis; growth hormone deficiency in children; the barrier function of retinal pigment epithelium; the use of lateral access in lumbar spondylolisthesis; clinical effects of Yokukansan for tension-type headaches; myocardial hypertrophy and periodontal disease; evaluation of national drug policy in Sudan; mucosally restricted rheumatoid arthritis in the old and new world; results of pharmacist’s intervention in a geriatric outpatient clinics based on potentially inappropriate prescribing criteria; results in patients treated surgically with osteodesis vs bloodless treated with plaster; and a short commentary on an ethical analysis of banning free pharmaceutical samples.

Advances in Medicine and Biology. Volume 85
Leon V. Berhardt
In series: Advances in Medicine and Biology
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 the pathogenesis of inclusion body myositis; the coexistence of outbreak of vibrio parahaemolyticus and acyl derived from OA-group toxins in shellfish from southern Chile; the antral ovarian follicle population and its application to fertility and livestock breeding; current achievements in the ovarian follicular reserve; large-scale in vitro embryo production as a tool to improve animal breeding; physio-pathological roles of sirtuins and their therapeutic significance; and xenopus as model animals for studying larval to adult tissue remodeling and adult organ formation.

Advances in Medicine and Biology. Volume 86
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-63482-966-3. $190.00.
This book presents the latest developments in medicine and biology. Chapters include research on environmental risk factors for diabetic nephropathy; inter-endothelial management of patients with hematuria; the benefits of early diagnosis, halo fixation and/or ventral stabilization of dens-fractures in correspondence to age of the patient and fracture type; a discussion on how and to which extent heart rate variability (HRV) is acutely changed in diabetic ketoacidosis (DKA) or in hyperglycemic hyperosmolar syndrome (HHS); an evaluation of the anatomical, refractive and functional results of an innovative technique of deep anterior lamellar keratoplasty; the physical, emotional and quality of life aspects of patients with Cervical Dystonia; the current issues in medical literature regarding androgen use during menopause; an overall report on the benefits and limitations of human milk oligosaccharides (HMOs) mass spectrometry (MS) analysis; the classification methods of the X-ray cerebral angiograms; and the diagnosis and management of intraoperatively necrotizing fasciitis of the breast.

Advances in Medicine and Biology. Volume 87
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-63482-972-4. $190.00.
This book presents the latest developments in medicine and biology. Chapters include research on trends in the birth prevalence of boys with isolated hypospadias and undescended testis in Hungary during the last 50 years; alleviating premenstrual syndrome (PMS) symptoms using a natural factor; neutralization-enhancing RF antibodies; advances in the diagnosis, assessment, management and outcome of Takayasu's arteritis; macronutrients and premenstrual syndrome; pressurized intraperitoneal aerosol chemotherapy (PIPAC); the control of MAO expression; and what we know about iMAO.

Advances in Medicine and Biology. Volume 88
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-63483-338-7. $190.00.
This book presents the latest developments in medicine and biology. Chapters include research on the management of Paget's disease of the breast; extended gastric myotomy for achalasia; bisphosphonate treatment in Paget's disease of bone; hernial sac medical advancements; thermoluminescence detection of Γ-ray irradiated herbs; metabolic acidosis; quality of life in overweight and obese patients; hydroxycinnamic acids; drug policies; and the role of the clinical chemistry laboratory in the diagnosis and management of metabolic acidosis.

Advances in Medicine and Biology. Volume 89
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-63483-478-0. $190.00.
In this next edition of “Advances in Medicine and Biology,” chapters include research on the link between inflammatory disorders and cardiovascular disease, with recent data indicating that the suppression of inflammation may reduce the risk of CV morbidity and mortality; recommended treatment options for non-alcoholic fatty liver disease (NAFLD); the regulation of testicular glucose metabolism in prediabetes, an intermediate state and a reversible condition, as well as its potential impact on male reproductive health; the use of near-infrared spectroscopy (NIRS) as a method of measuring respiratory muscle oxygenation changes; the incidence, prognosis and management of common retinal injuries; factors that affect elimination disorders and its outcomes; the potential complications that radiofrequency ablation (RFA) can have on thermal skin injuries (skin burns); the use of grasshopper in the process of wound healing, specifically the use of grasshopper's abdominal secretion in wound healing; and finally, the use of fish collagen as a substitute for mammalian collagen, in food products which also has various health implications.

Advances in Medicine and Biology. Volume 90
Leon V. Berhardt
In series: Advances in Medicine and Biology
Hardcover: 978-1-63483-643-2. $190.00.
In this next edition of "Advances in Medicine and Biology," chapters include research on the obesity prevention programs for elementary school-age children; foreign body ingestion in children; the use of fluorescent tracer retrograde labeling to identify somatosensory dorsal root ganglia neurons; the contribution of PGE2 induced nociceptor sensitization and potentiation to chronic pain conditions; ultrasounds for trigeminal neuralgia; postoperative monitoring after free tissue transfers; the mobilization, collection and transfusion of granulocytes; the defects of granulocytes and granulopoiesis; near infrared spectroscopy in neonatal clinical monitoring and in the food and pharmaceutical industries; and Sarco(endo)Plasmic Reticulum Calcium-ATPases (SERCs) and MicroRNAs.

Bicuspid Aortic Valve: Diagnosis, Surgical Treatment and Complications
Anthony Chapman
In series: Congenital Disorders - Laboratory and Clinical Research
2015. 100 pp.
Softcover: 978-1-63482-786-7. $82.00.
e-book: 978-1-63482-809-3. $82.00.
Bicuspid aortic valve (BAV) is the most common congenital pathology of the aortic valve occurring in 0.5-2% of the general population and frequently requiring surgical management after the fourth decade of life. From the etiology to the surgical management of BAV is analyzed. Other chapters review genome-wide association studies, linkage analyses and next-generation sequencing studies, which are beginning to build a more comprehensive picture of the genetic bases of BAV. The prospects for developing tools for genetic screening of families and for risk stratification are explored as well, including the future steps which are necessary for the creation of an individualized approach to managing BAV. The last chapter is a review of the present understanding of ascending thoracic aortic aneurysm pathogenesis. The genetic basis and basic pathology underlying BAV and ascending thoracic aortic aneurysms are discussed as well, and are compared to known mechanisms underlying other aortopathologies.

Botulinum Toxin in Dermatology: A Clinical Overview
Anna Campanati, M.D., and Annamaria Offidani
(Dermatological Unit, Department of Clinical and Molecular Sciences, Politecnica Marche University, Ancona, Italy)
In series: Dermatology - Laboratory and Clinical Research
Even those clinicians who feel themselves far from esthetic dermatology now recognize that BoNT-A is an extraordinary tool in their therapeutic armamentarium for treating complex disorders such as focal idiopathic hyperhidrosis. This has opened a therapeutic scenario for a group of patients very difficult to treat previously. Since the introduction of BoNT-A in the dermatological therapeutic armamentarium, in 1990, things have changed to the point that any dermatologist should now have knowledge of BoNT-A basics, and the practicalities of BoNT-A vial reconstitution and injection. Moreover, in the last years, a widespread availability of multiple different commercially available forms of BoNT-A has been for sale, thus the clinicians must now really know and consider the advantages and disadvantages of the different available products. These would include dosing/duration, immunogenicity, and spread of effect. What has not changed over the years is the safety profile of BoNT-A. The knowledge regarding its side effects and complications have greatly increased, confirming that, despite the attempts of some individuals to assert otherwise, BoNT-A remains one of the safest forms of treatment available to us as physicians. This edited collection provides a comprehensive practical guide on the use of botulinum toxin in several dermatological disorders, including focal idiopathic, axillary, palmar and plantar, craniofacial or segmental hyperhidrosis, chrono-aging, hidradenitis, and gives some suggestion on the use of BoNT-A for the treatment of several orphan skin diseases, not responding to conventional treatments like benign Hailey-Hilkey disease, lichen simplex, osmidrosis. Using clear explanations, simple line drawings, diagrams and clinical pictures, it provides suggestions to improve practical knowledge on the use of BTX-A in dermatology. Hot topics include practical information for clinicians regarding the correct counseling of the patients to be treated; methods and ready to use tests to select patients to be treated; the optimal dosage and dilution according to the site of injection and the indication of use; the relevant injection sites for each condition; the correct technique of injection in the different areas of body surface; comparative dosage tables for the various formulations of toxin used; how to manage and prevent side effects related to the use of BoNT-A; common pitfalls and how to optimize outcomes; timing for the follow-up of treated patients. The authors hope that this book may be a starting point for the use of a drug that is still growing, and a useful tool for those clinicians who want to improve their knowledge about the use of BoNT-A in dermatology.

Botulinum Toxins and Botulism
Charlotte Reynolds
In series: New Developments in Medical Research
Hardcover: 978-1-63483-384-4. $110.00.
Botulinum toxins are widely used for the treatment of medical and aesthetic disorders. They are considered the gold standard for the treatment of muscular spasticity and facial dynamics wrinkles. The authors of this book discuss botulinum toxin resistance in medical and aesthetic arenas; recommendations of dilutions for treatment applications (general recommendations were to inject the toxin diluted, because highly concentrated toxins were believed to be more toxic and dangerous); a novel methodology of transdermal delivery of botulinum toxin with the aid of a dermic pen for hyperhidrosis; emerging treatment options for lower urinary tract symptoms that involve a bladder neck injection of a botulinum toxin; and a discussion on the cases of botulism that arise from consuming certain foods particularly in the Arctic regions.

Cervical Spine Injuries: Epidemiology, Long-Term Outcomes and Complications
Joseph S. Butler Ph.D. FRCS (Tr & Orth), (Department of Spinal Surgery, Royal National Orthopaedic Hospital, Stanmore, UK)
In series: Muscular System - Anatomy, Functions and Injuries
Hardcover: 978-1-63463-598-1. $170.00.
Spinal cord injury (SCI), and in particular cervical SCI, remains a devastating and catastrophic event for patients, their families and society, often producing severe and permanent disability. Moreover, the emotional and psychological consequences of coping with a disabling injury can be profound. SCIs are very often permanent, yet potentially preventable. Despite significant medical and technological advances in recent years the overall mortality for spinal injury patients remains largely unchanged. Understanding the epidemiology, aetiology, medical and psychological factors associated with cervical spinal cord injury remains crucial in order to advance our knowledge on the identification of such devastating injuries, their possible prevention and ultimately on how to best manage the widespread physical, social and psychological effects of SCI at an individual and societal level. This book endeavors to describe the epidemiology of
cervical spinal cord injury and to summarize some of the primary outcomes associated with this type of injury. We devote chapters to such key topics as: Operative and non-operative outcomes following SCI; whiplash injury; neurological, respiratory, gastrointestinal and urinary complications post cervical SCI and the psychological impact of cervical SCI; among others. This book does not provide an exhaustive background on the area of cervical spinal cord injury but rather compiles key information on the most commonly associated comorbid issues accompanying cervical spinal cord injury and encapsulates it to provide an accessible account of some principal topics relating to this particular type of SCI.

Collection of Cases on Orthopaedic Surgery: A 14 Year Experience
Thisara Chamupathie Weerasuriya (Department of Trauma and Orthopaedics, Ayr University Hospital, United Kingdom)
In series: Muscular System - Anatomy, Functions and Injuries
2015. 139 pp.
Hardcover: 978-1-63482-470-5, $110.00.
This is a collection of cases that will definitely interest every reader with or without a surgical background. These surgical cases are stories the author encountered during his brief stint in orthopaedics in Sri Lanka during the past 14 years. The collection includes some stories of rare orthopaedic conditions and some major trauma situations. Please note that some of the photographs can be disturbing.

Dermatology Research Advances. Volume 2
(Autoinflammatory/Autoimmune/Neoplastic/Paraneoplastic/Systemic/Genetic Skin Diseases)
Yan-Hua Liang (P.R. China)
In series: Dermatology - Laboratory and Clinical Research
Hardcover: 978-1-63463-306-2, $250.00.
In the 21st century, there has been a vast explosion in new information relating to the art and science of dermatology, as well as fundamental cutaneous biology. Furthermore, this information is no longer exclusive to the interests of the small, but growing specialty of dermatology. Clinicians and scientists from a wide variety of disciplines have recognized the broad implications of cutaneous lesions in systemic diseases. At present, there is a multidisciplinary and worldwide interest in the progress of dermatology. It is difficult for most fully-booked physicians to spend too much time on searching secondary data for the textbook mentioned; this kind of literature-searching job is very time-consuming and remains somewhat incomplete. It should be very helpful to have textbook-matched handbooks with expanded information from topic-oriented experts. With these factors in mind, we have undertaken this series of books which are specifically oriented toward the advances of dermatology. The scope of the series is purposely broad, with books ranging from pure basic science to practical, applied and clinical dermatology. Thus, while there is something for everyone, all volumes in the series will ultimately prove to be valuable additions to a dermatologist’s library. The book consists of 18 chapters prepared by authors from nine countries between five continents. The organization of this international editorial group has ensured global opinions, avoided regional bias and racial preferences. The topics covered in this book are the core of dermatology: from the fundamental changes of skin biology to newly developed technologies and treatments. What makes this book quite unique is the inclusion of Chinese medicine, telemedicine, biologics, and skin disorders newly categorized as autoinflammatory, such as Still’s Disease and Sweet’s syndrome.

Duchenne Muscular Dystrophy: Symptoms, Management and Prognosis
Samuel Alexandre Almeida Honório (School of Health Sciences, Polytechnic Institute of Leiria, Portugal)
In series: Neuroscience Research Progress
2015. 201 pp.
Hardcover: 978-1-63482-153-7, $190.00.
e-book: 978-1-63482-197-1, $190.00.
A child with Duchenne Muscular Dystrophy (DMD) faces a childhood and adolescence with a disability that develops gradually. This book intends to expose the problems of children with DMD. The authors discuss situations related to the disease in an attempt to provide some quality and improvement of life for those affected since DMD is a degenerative disease which affects muscle. This book offers a historical study of muscular dystrophy. It also shows some profiles of excellent clinicians and scientists that have contributed to this book with a description of muscular dystrophy from the clinical picture, to the latest techniques in genetics. Also included in the chapters are resolutions of several approaches to DMD, like scales, in order to anticipate how to manage the disease. This book relates some techniques of moderate exercise, like Yoga and water exercises, that are compliant with some advantages in mobility. The book concludes with some current trends and what can be done in the future. This book can be a good read to everyone that is interested in DMD, and also for the ones who know or provide care for those with this terrible disease.

Ebola: Essentials, Response Efforts, and Prevention Issues
MaryAnn Cole
In series: Virology Research Progress
Hardcover: 978-1-63482-253-4, $120.00.
The Ebola virus is named after the Ebola River, near where the virus was discovered in 1976 in Zaire, now known as the Democratic Republic of the Congo (DRC). It is in the filovirus family, so called because of its filamentous shape. EVD is also known as Ebola hemorrhagic fever. The disease sometimes causes hemorrhage (i.e., bleeding) from body openings, but this symptom is not consistent. Five strains of Ebola virus have been identified. This book discusses the essentials, response efforts, and prevention issues involved with the Ebola virus.

Endocrine Emergencies, Endocrinology in Intensive Care and Preoperative Care
Mustafa Sahin, M.D. (Ankara University School of Medicine, Endocrinology and Metabolism Department, Ankara, Turkey)
In series: Endocrinology Research and Clinical Developments
Hardcover: 978-1-63463-745-9, $95.00.
e-book: 978-1-63463-764-0, $95.00.
Descriptions of endocrinology will change in the years to come. Endocrinology is not only concerned about the diseases of the known endocrine organs. We know now organs that were not previously recognized as endocrine organs such as the heart and skin are in fact endocrine organs. Endocrinology is a science of knowledge transfer in the human body. Endocrine diseases like diabetes, metabolic syndrome, obesity, polycystic ovary syndrome, hypertension and thyroid disorders are so common in the population. Each exceeds 10% of the total population. Endocrinologic evaluation of whole diseases of emergency situations and critical care situations are important, as well as known endocrine organ diseases in these units. Also, preoperative,
perioperative, postoperative evaluation and management of endocrine diseases are very important. This book is the written first edition of a work that may be beneficial for endocrinology and internal medicine residents, surgeons, and medical students. The book purpose is to cover the up-to-date practical endocrine emergencies, perioperative evaluation and endocrine aspects of critical care. If you send us your comments, feedback and chapter headline suggestions, we can make changes in the new edition of this book according to suggestions.

Flow in the Health Sciences for Disease Prevention and Health Promotion
Kazuki Hirao (Department of Occupational Therapy, School of Health Science and Social Welfare, Kibi International University, Iga-machi Takahashi, Okayama, Japan)
In series: New Developments in Medical Research
This book explores the connection between flow (or the mental state of becoming fully immersed in an activity) with a diverse range of physical and mental conditions. It begins with an introduction to the theory of flow and previous research on its social role and health benefits. It then provides an overview of the neurological functions underlying flow as well as instruments and methods for measuring it. The remainder of the book outlines, through a critical discussion of recent clinical research, the relationships between flow and emotional issues such as guilt, shyness, stress, and optimism. The study shows that the promotion of flow can benefit those suffering from negative emotional conditions. This work is significant because it shows areas in which promotion of flow can potentially provide clinical benefits.

Handbook of Diabetes for General Practitioners
Anil K. Mandal (Fullbright Scholar, Founder of Mandal Diabetes Research Foundation, Consultant in Nephrology Putnam Community Medical Center, Palatka, Florida, USA)
In series: Endocrinology Research and Clinical Developments
2015.
Softcover: 978-1-63482-821-5. $82.00. e-book: 978-1-63483-211-3. $82.00.
Diabetes is a prevalent disorder throughout the world; it has become a universal topic for conversation superseding topics like heart disease or cancer. Self-care and taking responsibility for the illness are integrally important in diabetes so that the patient stays healthy and complications do not develop. Self-care consists of the following: a prescribed diabetes diet, indulging in daily physical activities and taking prescribed doses of insulin. Self-care is promoted through repeated education by doctors and allied health professionals who are knowledgeable in diabetes, pathophysiology and clinical diabetes care. The Handbook of Diabetes for General Practitioners is written for doctors to apprise the fundamentals of diabetes including its recognition as an entity, the discovery of insulin for the treatment of diabetes, pathophysiology of diabetes, and the development and progression of diabetic complications and how to minimize or prevent the complications. Also, several chapters are written to focus on the common flaws in the diagnosis and improper treatment of diabetes. Incorrect diagnosis and treatment of drug-induced hyperglycemia leads to the development of overt diabetes with a range of complications. Diabetic complications are serious, disabling and economically disastrous for healthcare providers. By reading this book, doctors and allied health professionals will be better prepared to deal with the adversities of diabetes to ultimately help their patients live a complication-free life.

Hepatotoxicity: Symptoms, Management and Health Implications
Senthilkumar Rajagopal, Ph.D. and Sengottuvelan Murugan, Ph.D. (Department of Zoology, Nizam College, Hyderabad, Telangana, India, and Endocrine Research Facility, Department of Animal Sciences, Rutgers University, NJ, USA)
In series: Hepatology Research and Clinical Developments
Over the past few years, epidemiological studies have revealed that there is an increase of liver disease worldwide. It becomes increasingly clear that developments in this field are moving so rapidly toward the creation of new drugs against these maladies. Numerous research articles and books have been published on various aspects of toxicities, symptoms, management and health implications of the liver. Consequently, a catalogue of collective information of toxicities, various features of natural products, and remedies for the prevention of toxicities is needed. This book deals with the toxicities in organs like the liver and the role natural products have in preventing these ailments. It also analyzes trends in the processing of natural products by using nanotechnology and their health implications. The main purpose of this book is to exhibit relevant, modern information on hepatotoxicity, its symptoms, and treatments presented by internationally recognized experts in the field. Therefore, it is our belief that this book has covered some of the most interesting aspects of research in liver diseases and provides a trustworthy source of current information in this area of research which should prove useful to the scientists interested in this discipline throughout the world. This collection will interest a variety of other scientific disciplines including toxicology, genetics, medicine and pharmacology, as well as drug and food sciences. We hope that our readers will find this volume to be a delightful addition to their personal libraries, laboratories and offices. Additionally, it can be used as a required or recommended text for related courses taught at colleges and universities levels.

Inguinal Hernia: Risk Factors, Prognosis and Management
Donald C. Hansen
In series: New Developments in Medical Research
A hernia is defined as a protrusion or projection of an organ or a part of an organ through the body wall that normally contains it. The risk for inguinal hernia is highest among Caucasian males. Other risk factors include a history of another hernia, advanced age, abdominal wall injury, history of abdominal aortic aneurysm and smoking. Inguinal hernias have a variety of clinical presentations ranging from a finding of a painless bulge in the groin region on routine physical examination to emergent, life-threatening presentations due to bowel strangulation. Most hernias can be diagnosed on physical examination as a bulge in the groin while coughing or straining. The definitive treatment of all hernias, regardless of their origin or type, is surgical repair. The authors of this book examine the risk factors, prognosis and management options for inguinal hernia.

Ki or Psi - Anomalous Remote Effects of Mind-Body System: Biophysical Approach to Unknown Power
Hideyuki Kokubo (Research Director, International Research Institute (IRI), Japan)
In series: Alternative Medicine, Health and Wellness
Kyphosis: Causes, Methods of Treatment and Potential Complications

Janice Newton

In series: Rheumatism and Musculoskeletal Disorders

2015. 120 pp.
Hardcover: 978-1-63483-224-3. $110.00.

Kyphosis is an abnormal increased forward angulation of the spine which results in a minimal to severe spinal deformity producing a slouching posture. Patients may present with progressive deformity accompanied by associated consequences including neck pain, neurologic dysfunction, postural instability, and marked decline in health-related quality of life. This book discusses what may be the cause of kyphosis, the methods of treatment available and other potential complications it leads to.

Medicine Research Summaries. Volume 4

Zhongwen Liáng and Bibao Zhang

In series: Medicine Research Summaries

Hardcover: 978-1-63463-794-7. $270.00.

This book is a continuation of the book Medicine Researcher Biographical Sketches and Research Summaries which compiles biographical sketches of top professionals in the field of medicinal research, as well as research summaries from a number of different focuses in this important field.
research, as well as research summaries from a number of different focuses in this important field.

**Medicine Research Summaries. Volume 11**

**Zhongwen Liáng and Bibao Zhang**

In series: *Medicine Research Summaries*


This book is a continuation of the book Medicine Researcher Biographical Sketches and Research Summaries which compiles research summaries from a number of different focuses in this important field.

**Menorrhagia and Dysmenorrhea: Risk Factors, Diagnosis and Management**

**Timothy M. Welch**

In series: *Obstetrics and Gynecology Advances*

2015. 102 pp.

Softcover: 978-1-63482-552-8. $82.00.
e-book: 978-1-63482-583-2. $82.00.

Menorrhagia is defined as heavy menstrual loss. Its main determinant of management is the impact of menorrhagia on the woman's quality of life. This book examines the history of menorrhagia, which should elucidate the temporal aspects of the heavy menstrual blood loss and may shed light on the etiology of menorrhagia. The authors further provide instructions on how to examine and treat women with menorrhagia. Furthermore, the book outlines a diagnostic approach and concentrates on different therapies like combined oral contraceptive pills in contrast with surgical management. With an effective treatment management, it is possible to better achieve the diagnostics of heavy menstrual bleeding (HMB) although areas that need further research are highlighted. The clinical use of NF-kappaB (NF-kB) inhibitors, which play an important role in the regulation of the amount of menstrual bleeding and pain are also explored. In addition to menorrhagia, the authors of this book examine dysmenorrhea, pain associated with menstruation. It is also the most prevalent symptom in women with the painful condition of endometriosis. Ilaria Erasmo and Simone Ferrero examine the types of therapy for endometriosis-related dysmenorrhea and the various hormonal treatments shown to effectively and safely relieve pain, which they argue should be based on the preference of the patients, on the incidence of adverse effects and on the costs of treatment.

**New Developments in Knee Prosthesis Research**

**Janice Stewart**

In series: *Medical Procedures, Testing and Technology*


Hardcover: 978-1-63482-700-3. $110.00.

In this book, the complete development of an external intelligent knee prosthesis created by the Mechatronics Research Group (MRG) was presented. This project brought out several advances in the prosthetic field which the authors discuss in detail. The second chapter examines the use of finite element modeling for understanding knee prosthesis biomechanics, fundamental to answering clinical question in the field. Also looked at are the basic characteristics of knee prostheses that must be complied with in order to provide a safe and biomechanical performance to its users during walking. Other chapters present the main results from a project whose main focus was to evaluate the tibial inserts wear and to obtain the possibility to control the total knee prosthesis (TKPs) wear process; whether screening and decolonization (S&D) is effective in reducing the rate of postoperative infection after elective knee joint arthroplasty and whether it’s cost-effective; and finally, a review of the current literature, as well as some personal experiences, on assessing the reliability of patient specific instrument system in total knee arthroplasty (TKA).

**Perioperative Practice in Trauma and Orthopaedic Surgery**

**Wasim S. Khan** (Clinical Lecturer, University College London Institute of Orthopaedics and Musculoskeletal Sciences, Royal National Orthopaedic Hospital, Stanmore, Middlesex, UK)

In series: *Rheumatism and Musculoskeletal Disorders*


There has been a shift in the delivery of trauma and orthopaedic services from the specialised to the sub-specialised, while being coupled with a greater multidisciplinary involvement. There are many healthcare professionals involved in the care of trauma and orthopaedic patients, ranging from surgeons, other medical specialities, ward and nursing staff, as well as podiatrists, orthotists, physiotherapists, occupational therapists and social workers. As a result, there is no other up-to-date book available that adequately covers the generality of trauma and orthopaedics, and at the same time appreciates the multidisciplinary approach. This book provides a platform allowing all disciplines to learn about the multifaceted care of these patients with an aim to enhance understanding, promote collaboration and allow the optimisation of care for trauma and orthopaedic patients. The book is aimed at doctors, nursing staff, physiotherapists, occupational therapists and all other staff involved in the care of trauma and orthopaedic patients.
Retinopathy of Prematurity (ROP): Classification, Risk Factors and Treatment
Elmira Aguilar
In series: Eye and Vision Research Developments
Hardcover: 978-1-63482-644-0. $110.00.

Retinopathy of prematurity is a disease caused by abnormal vessel regression of the retinal vasculature that affects premature infants with low birth weights. Despite significant improvements in screening guidelines and treatment modalities, ROP is still the leading cause of reversible paediatric blindness worldwide. The authors of this book explore the possibility of applying the concept of fractal analysis to images of retinal blood vessels for morphometric analysis and classification; the quality of life for children with retinopathy of prematurity; the differences in ethnicity and socioeconomic status that influence the prevalence, risks, outcome and management of ROP; the outcome and prognostic factors of the intravitreal administration of bevacizumab for ROP; the outcomes of transscleral diode laser photocoagulation for ROP; new therapeutic strategies for treating ROP and late complications that can develop and persistent into later childhood and even adult life (for example, long-term refractive errors, amblyopia, strabismus and optic nerve abnormalities).

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
Hardcover: 978-1-63117-385-1. $150.00.
Softcover: 978-1-63483-419-3. $79.00.

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.

TOXICOLOGY: The Past, Present, and Future of Basic, Clinical and Forensic Medicine. Volume 1
Rajat Sethi, Chandra Kolli and Delwar Hussain (California Health Sciences University, Clovis, California, USA)
In series: New Developments in Medical Research

This book offers readers an overview of the field of toxicology while incorporating historical context with present day advances. The chapters, written in a style that facilitates the reader’s connection of past developments with the present state-of-the-art practices in specific fields of toxicology, provide a detailed coverage of diverse areas in toxicology. The areas of chapters chosen for detailed discussion are characteristic of the overall field and helps to reinforce the basic principles of toxicology. As such, this book will be a valuable resource not only for those scientists in the field of toxicology, but also for those in related fields (e.g., pharmacology, physiology, microbiology, biochemistry, immunology and others). Additionally, this book will be a valuable resource for teaching graduate students in not only toxicology, but also in the related fields above. While this book is not primarily intended as an introductory text for undergraduate students’ first exposure to the field of toxicology, it would serve very useful as a text for an advanced undergraduate level biology or chemistry course. The chapters are filled with appropriate tables and figures which help illustrate and reinforce the information in each chapter. The referencing of material cited is carefully prepared and provides links to additional information that will aid the reader in understanding and appreciating the information within the text. The reader will find this book to be of significant depth and breadth so as to meet the needs of many groups of students and established scientists.

NEUROLOGIC DISORDERS

Asperger Syndrome: Risk Factors, Cognitive-Behavioral Characteristics and Management Strategies
Michael F. Shaughnessy (Eastern New Mexico University, School of Education, Portales, New Mexico)
In series: Neurology - Laboratory and Clinical Research Developments
Hardcover: 978-1-63463-810-4. $190.00.
e-book: 978-1-63463-818-0. $190.00.

A condition which has received much attention since its initial “discovery” or labeling has been that of Asberger's Syndrome. Some find it mysterious, others label it as “odd, bizarre, idiosyncratic” behavior, and yet others have mocked and ridiculed the behaviors and oddities. There have even been television shows and movies extolling this condition, and bringing awareness to the general public. A recent development has been the elimination of Asberger's from the Diagnostic and Statistical Manual of the American Psychiatric Association. It should be noted that this text is used for diagnostic purposes in America, but is often referenced in other parts of the world. There are obvious ramifications and repercussions to this recent event. Some see this as a travesty. Others believe it to be a more sublime organization of the phenomenon called “Autism.” In any event, this book examines and explores this condition from both a positive perspective and perhaps negative perspective from the point of view of management strategies, cognitive-behavioral differences and difficulties. This is the most current, comprehensive book available on this topic and it is hoped that the book will provide some guidance to parents, teachers and clinicians as well as researchers and scholars in the field.

Glioblastoma Multiforme: Symptoms, Diagnosis, Therapeutic Management and Outcome
Isabelle M. Germano (Professor Neurosurgery, Neurology, Oncological Sciences, Director, Comprehensive Brain Tumor Program, Co-Director, Radiosurgery Program, Department of Neurosurgery, The Mount Sinai Medical Center, New York, NY, USA)
In series: Neurology - Laboratory and Clinical Research Developments
Hardcover: 978-1-63483-273-1. $190.00.

This book provides basic researchers and clinicians with a contemporary review of personalized medicine for the diagnosis and treatment of Glioblastoma Multiforme (GBM), the most common and
most aggressive type of brain tumor. Over the past decade, there has been an explosion of basic and clinical research revolving around GBM, resulting in improved outcomes and, most importantly, significant advances in our ability to better understand this disease to formulate personalized medical treatment for each patient. It is important to note that the word multiforme means “of many forms or appearances”, implying that “one treatment will not fit all.” Data from a variety of sources show that medical decisions and interventions must be tailored to the individual patient to obtain the greatest outcome. In this book, the diagnostic techniques and treatment options for patients with GBM are reviewed in state-of-the-art chapters written by expert researchers and clinicians in the field focusing on molecular genetic classification, surgical management, chemotherapy, radiation, nutrition, immune-therapy, and more. Many new therapeutic options are described and reviewed, confirming that not only does each patient needs to have personalized treatment, but also that a single treatment alone will not be sufficient; multiple mechanisms are involved and tumor biology changes over time. Hopefully, this book will educate and stimulate readers’ knowledge and lead to new avenues of investigation and therapeutic success.

Human Lyme Neuroborreliosis
David S. Younger
In series: Public Health in the 21st Century
Hardcover: 978-1-63482-704-1. $160.00.
Lyme neuroborreliosis is a disorder of immense magnitude and importance. This volume on Lyme neuroborreliosis, authored by David S. Younger, provides up-to-date insight into the history, epidemiology, experimental animal models, blood brain barrier, clinical, serological and treatment aspects of this disorder in children and adults. This scholarly work on Lyme neuroborreliosis should appeal to neurologists, infectious disease specialists, hospital and office-based physicians who care for patients as well as academic investigators in the field of Lyme disease and pharmaceutical development. It is hoped that with the coming of tick season that brings cases of Lyme disease to the forefront, that health care providers in endemic regions for Lyme disease will be ready to diagnose the most difficult patients and avert the most dreaded complications, notably those of the nervous system.

Molecular Aspects of the Psychosomatic-Metabolic Axis and Stress
Alfred Bennun, Ph.D. (Rutgers University, New York, NY, USA)
In series: Neurology - Laboratory and Clinical Research Developments
2015. 239 pp.
Hardcover: 978-1-63463-912-5. $125.00.
The fight-or-flight response could be characterized as a discretionary capability of choice, conditioned by learning that allows evolution to go beyond instinct. This book seeks to enlighten readers about the fight-or-flight response that is coupled by the body metabolic parameter of connectivity.

Neuroinflammation in Disease: Risk Factors, Management and Outcomes
Rebecca K. Dawson
In series: Neuroscience Research Progress
Softcover: 978-1-63483-389-9. $82.00.
e-book: 978-1-63483-414-8. $82.00.
In this book, the link between the modifiable risk factors of neurodegenerative diseases and chronic neuroinflammation are examined, thus highlighting that controlling risk factors is a valid approach for managing neurodegenerative diseases in which neuroinflammation contributes to the disease progression. The mechanisms of inhibition of neuroinflammation by EST and ERAs are discussed, as well as the neuroprotective roles of EST and ERAs in multiple sclerosis, Alzheimer's disease, Parkinson’s disease and epilepsy. The final chapter focuses on the dynamics of progression in MS patients, and the disease process within contexts of proinflammatory reactivity and interactivity.

Progressive Multifocal Leukoencephalopathy: Risk Factors, Management Strategies and Prognosis
Denise S. Coleman
In series: Neurology - Laboratory and Clinical Research Developments
Hardcover: 978-1-63482-889-5. $110.00.
e-book: 978-1-63482-920-5. $110.00.
Progressive multifocal leukoencephalopathy (PML) is a rare, disabling and potentially fatal brain infection of the central nervous system (CNS) caused by reactivation of the John Cunningham virus (JCV). The most important risk factor for PML is immunosuppression associated with HIV/AIDS or therapy. Approximately 60 to 80% of the adult population has JC antibodies, but PML is rarely diagnosed. The chapters in this book include research on the pathologic features of PML, the diagnosis, risk factors, pathogenesis, and management strategies.

Rett Syndrome and Other Communication Disorders: Symptoms, Treatment and Prognosis
Daniel L. Kolby
In series: Neurology - Laboratory and Clinical Research Developments
Hardcover: 978-1-63463-920-0. $110.00.
Rett syndrome is a X-linked neurodevelopmental disorder that affects 1 in 10,000 females. It presents itself clinically with developmental regression at 6-18 months of age, with loss of acquired language and motor skills, leading to a complex lifelong syndrome characterised by intellectual disability; behavioural and neuropsychiatric disturbances; social withdrawal; hand stereotypes; epilepsy; autonomic dysfunction causing breathing irregularities and cardiac arrhythmias; muscle tone abnormalities leading to orthopaedic deformities such as scoliosis; and motor incoordination that causes gait disturbance and feeding difficulties which, along with a number of gastrointestinal problems, leads to growth failure and nutritional deficiencies. This book discusses symptoms, treatment and prognosis of Rett Syndrome, as well as other related communication disorders.

The Prion Phenomena in Neurodegenerative Diseases: New Frontiers in Neuroscience
Giuseppe Legname and Gabriele Giachin (SISSA, Trieste, Italy)
In series: Neurodegenerative Diseases - Laboratory and Clinical Research
The most fascinating and unique feature of prion diseases is that they are caused almost exclusively by a proteinaceous and infectious particle termed prions by the Nobel Prize laureate S.B. Prusiner, who discovered this class of pathogens. In the latter part of the 1990s, mad- cow disease, a disease caused by prions acquired through foodborne transmission, raised unprecedented public concern due to the concrete possibility that prions in animals could be transmitted to humans.
through the food chain. For roughly two decades, prions were under intense scrutiny and many studies were undertaken worldwide. These investigations have led our community to a better risk assessment and management of prion diseases in humans and in animals, substantially limiting the possibility of new prion epidemics. Nowadays, prions have been brought once again to the foreground after the discovery that a variety of neurodegenerative diseases, in particular Alzheimer’s disease, Parkinson’s disease and amyotrophic lateral sclerosis, share fundamental features with prions, including protein misfolding and aggregation in the brain, cell-to-cell transmission and in vivo infectivity. Therefore, studying prions might help to understand the pathological mechanism of these disorders. The Prion Phenomena In Neurodegenerative Diseases: New Frontiers in Neuroscience is a book that benefits from the contribution of leading scientists in different fields of neuroscience, including Gian Luigi Zanusso, Holger Wille, Fabrizio Tagliavini, Andrew F. Hill, Jerson L. Silva, Vladimir N. Uversky, Henrike Heise, David W. Colby, Neil R. Cashman and the Nobel Prize laureate Eric R. Kandel. This chapter collection discusses the development of prions and their various diseases, and provides a detailed overview about the state of the art of the novel prion phenomena observed in other fatally damaging protein misfolding disorders. This book represents an up-to-date review of different protein-misfolding diseases, serving as an invaluable tool for both specialized researchers working in the field of neurodegeneration and for a broad spectrum of academic readers that wish to learn more about the prion phenomena.

NEUROSCIENCE

Advances in Visual Perception Research
Thomas Heinen (University of Hildesheim, Germany)
In series: Neuroscience Research Progress
2015. 343 pp.
This book provides a state-of-the-art discussion forum for topics that are of high interest in the field of visual perception research. Experts from different countries and different scientific disciplines, such as medicine, psychology, neuroscience, sport and movement science, provide a number of significant contributions, covering recent theoretical developments, innovative methodical developments, current research evidence, as well as implications for practical applications in the field of visual perception. Topics discussed in the book include the role of importance in visual perception, accuracy and bias in emotion perception, automated vector-based gaze analysis, visual-vestibular interactions when performing complex skills, variability of fixation durations in healthy participants, gaze behavior in subjects with attention deficit hyperactivity disorder, perception of moving objects in real life, controlling posture in differing perceptual information situations, orientation matching in perceptual space, error correction on the basis of visual information in sports, visual perceptual learning in cytopathology, visuomotor behavior in virtual reality situations, role of augmented visual feedback in motor learning, informational domains in integrating information from different sensory sources, and the role of visual inputs in sensorimotor integration. Given the wide range of topics and scientific disciplines, the book “Advances in Visual Perception Research” may be an important source of information for graduate students, researchers and practitioners that study and work in the field of visual perception.

Attention Deficit Hyperactivity Disorder (ADHD): Epidemiology, Treatment and Prevention
Francisco López-Muñoz and Cecilio Alamo González (Camilo Jose Cela University, Madrid, Spain)
In series: Neurodevelopmental Diseases - Laboratory and Clinical Research
Hardcover: 978-1-63483-128-4. $270.00.
e-book: 978-1-63483-155-0. $270.00.
Attention-deficit/hyperactivity disorder (ADHD) is a common neurodevelopmental disorder with underlying brain anatomical and functional measures, as well as familial/genetic factors that are major foci of neuropsychiatric research. In recent years, ADHD is one of the neuropsychiatric diseases receiving more attention in scientific literature. During this decade, numerous studies were published on the implementation of diagnostic criteria and assessment tools for clinical research and the social impact of the disease, which continued to discuss genetic and neurobiological aspects. Psychostimulants are highly effective medications for the treatment of ADHD, and the development of long-acting stimulant formulations has greatly expanded the treatment options for individuals with ADHD. However, despite the established efficacy of the stimulants in ADHD, 10-30% of the adolescent population with ADHD does not respond to stimulants or may not tolerate them due to side effects. The potential for abuse and the stigma of a controlled medication are reasons to consider alternatives to stimulants in children and adolescents with ADHD.
Traditionally, ADHD is regarded as a childhood disorder, but it is now clear that ADHD affects both children and adults. Many adults with ADHD are undiagnosed and untreated. Thus, the negative outcomes reported by most follow-up studies may be a consequence of untreated symptoms. The diagnosis of ADHD is broad and heterogeneous, with multiple causes being of neurological, paediatric and psycho-social nature. With this in mind, it must always be done rigorously by a multidisciplinary team. This book, from its multidisciplinary and international background (31 authors from four different countries), contributes to relieving readers from uncertainties and worries they may have towards ADHD.

Autism Spectrum Disorders: Early Signs, Intervention Options and Family Impact
Arlene Valdez
In series: Neuroscience Research Progress
Hardcover: 978-1-63482-547-4. $160.00.
Autism spectrum disorders (ASD) is a neurodevelopmental disorder characterized by impairments in communication and social skills, and marked by restricted and repetitive behaviors. In recent years, there has been an increasing growth in the prevalence of ASD with 1 in 68 children in the USA diagnosed with the disorder. The authors examine the practices for identifying early markers for ASD and in turn diagnosing the disorder. Furthermore, the interactions between genes and environments are now regarded as the most probable explanation for autism spectrum disorders (ASDs). This book includes research on the principal role infantile zinc- and manganese-deficiency and/or toxic metal burdens play as environmental factors in the pathogenesis of autism spectrum disorders. Other chapters include research on the Family-Centered Transition Planning (FTCP) approach for ASD and the results that have been achieved by students and families; the experiences of adults with autism spectrum disorders with a focus on their social relationships; cognitive behavior therapy (CBT) in adults with high functioning ASD and ways to enhance school-based interventions for children with high-functioning autism spectrum disorders (HFASD).
Catatonia on the Consultation Liaison Service and Other Clinical Settings
Brendan T. Carroll, M.D. (Ohio University Heritage College of Osteopathic Medicine, Athens, Ohio, USA) and David R. Spiegel, M.D. (Professor of Psychiatry and Behavioral Sciences Director, Consultation-Liaison Services Eastern Virginia Medical School)
In series: Neuroscience Research Progress
2015. 139 pp.
Hardcover: 978-1-63463-809-8. $110.00.
Catatonia is an interesting neuropsychiatric syndrome. It resides at the intersection of psychiatry and neurology. For far too long it has been a curious subtype of schizophrenia or an infrequent observation; but catatonia is not rare. It can be found within the clinical domains of many branches of medicine. Catatonia is misunderstood. Catatonic signs and symptoms are often interpreted as volitional when they are not. These patients are given attention because they often respond favorably to treatment. It can be found in historical cohorts, Catatonia liaison settings, developmental disorder clinics and medical units. Now with the advent of DSM-5, Catatonia has a home of its own. DSM-5 and ICD-10 now identify Catatonia as a primary psychiatric disorder and the primary medical disorder and the primary presentation of a long list of psychiatric, neurological and medical conditions. The screening and identification of catatonia is very important in consultation liaison and other clinical settings. This book offers new methods to detect and diagnose Catatonia. The authors have brought together researchers, clinicians and trainees from a variety of clinical disciplines to contribute to this book. In fact, this book is not a perfunctory review of catatonia. It brings forth new ideas: the screening of Catatonia, new cases of Catatonia and new ways of conceptualizing Catatonia in DSM-5 and ICD-10. This is the theme presented for a fresh approach to the diagnosis and treatment of Catatonia in non-psychiatric settings for the clinical syndrome that has been described since antiquity. This book is recommended to any clinician, nurse, research student or team member who will encounter patients with Catatonia. This includes most of those working in emergency rooms, medical and surgical units, child and adolescent clinics and nursing homes. The authors think that the reader will find this book intriguing, straightforward and offering promise to the care of patients with Catatonia.

Crisis and Renewal of Civilizations: The 21st Century Crisis of Ideas and Character
Marek J. Celinski (Private Practice, Toronto, Canada)
In series: Focus on Civilizations and Cultures
This book expands on the primary assumption that the human brain is a sense and purpose producing organ; we use it to understand and guide us through chaotic realities in order to impact the course of events and ourselves. Humanity’s future will be a direct result of what our brains permit us to do, and this is the reason why understanding how the brain functions is so important to promote its best utilization. We need to learn how to better benefit from the human brain’s innate tendency to establish new connections, which could promote flights of creativity and imagination. A unique feature of the human brain is that it is both diversified and unified, allowing for a variety of sensory and expressive functions and, at the same time, for cohesive and purposeful behavior. Our mind’s cohesiveness breaks down in the brain’s pathological conditions, or in conditions of severe stress and deprivation. Examples of crisis observed throughout history can be understood as a projection by our collective mind of pathological states on reality. Put simply, the human mind is unable to make sense of circumstances to assure stability and continuity. It is obvious that we struggle both to separate and unify ourselves, and that every war or social disruption ultimately ends in peace and the temporary restoration of order and stability.

Decision Making in Degenerative Spinal Surgery: A Case Based Approach
Kern Singh and Sheeraz Qureshi (Department of Orthopaedic Surgery, Rush University Medical Center, Chicago, IL, USA)
In series: Neuroscience Research Progress
Hardcover: 978-1-63482-094-3. $170.00.
e-book: 978-1-63482-095-0. $170.00.
This book is a compilation of surgical techniques and pearls for the management of cervical, thoracic, and lumbar spinal pathology from some of the world’s most prominent figures in spine surgery. The chapters are organized by case vignettes to reflect commonly encountered spinal diseases such as cervical disc herniation, cervical myelopathy, lumbar disc herniation, lumbar spinal stenosis, degenerative spondylolisthesis, degenerative disc disease, and deformity as well as conditions including cervical pseudoarthrosis and thoracic disc herniation. The surgical approaches include disc replacement, fusion, decompression, and laminoplasty as performed by expert spine surgeons as they lend their know-how on both minimally invasive and open techniques for the surgical management of spinal pathology. This book will enable spine surgeons, neurosurgeons, orthopaedic surgeons, fellows, residents, physicists, pain management professionals, and medical students to gain valuable insight into the typical presentations, appropriate evaluation, surgical techniques, benefits, complications, and the pearls and pitfalls in the treatment of spinal diseases.

Deep Brain Stimulation
Raja Mehanna (Assistant Professor of Neurology, Movement Disorders Specialist, University of Texas Health Science Center, Houston, TX, USA)
In series: Neuroscience Research Progress
Deep Brain Stimulation is a comprehensive, yet practical guide for any physician interested in this life changing therapy for patients with Parkinson’s disease, tremor, dystonia or obsessive-compulsive disorders. Written by experts in the field from different world renowned institutions, this book gives a unique and comprehensive insight into the universe of deep brain stimulation. Filled with tables and colored figures, this book covers all the aspects of deep brain stimulation, including a historical review, the underlying neurophysiologic mechanism of treatment, intra-operative details from the neurosurgical and the neurophysiologic standpoint, a review of the evidence supporting the use of deep brain stimulation for each disorder, algorithms for patient selection, programming strategies, as well as troubleshooting and prospective indications. It will be useful to residents and fellows, as well as neurologists and psychiatrists already managing or looking into managing the care of patients with deep brain stimulation.

Default Mode Network (DMN): Structural Connectivity, Impairments and Role in Daily Activities
Dennis Ramirez
In series: Neuroscience Research Progress
Hardcover: 978-1-63482-903-8. $110.00.
e-book: 978-1-63482-914-4. $110.00.
The default mode network (DMN) typically comprises the posterior cingulate cortex (PCC), precuneus, inferior parietal, hippocampus and medial prefrontal cortex (MPFC) nodes. These regions are commonly reported more active during rest or during a task with little cognitive demand. DMN is active when individuals are engaged in internally focused tasks including autobiographical memory retrieval, envisioning the future and conceiving the perspectives of others. This book examines the importance of DMN in evaluating brain development, neurological and neurodevelopmental disorders. The authors' also review how DMN is disrupted in neuropsychiatric disorders in relation to cognitive-behavior dysfunctions, such as attention and memory (for example, with ADHD) and explores the connectivity between DMN's nodes, which change with age and may continue changing into adulthood.

Endocannabinoids: Chemical Structure, Role in Physiological Processes and Therapeutic Effects

Terry Garza

In series: Neuroscience Research Progress


The endocannabinoid system (ECS) was discovered when CB1 and CB2 receptors were found, the first of them in the central nervous system of pigs, and the second one in the periphery nervous system. The endocannabinoid system is involved in multiple physiological functions. These situations indicate that the ECS is a promising tool for the development of future drugs to treat several diseases including cancer and multiple sclerosis. In the first chapter, the chronobiology of ECS is discussed. The authors of the second chapter focus on anandamide, a type of endocannabinoid, as a fast retrograde signaling molecule in neural circuits. In Chapter 3, the authors summarize their experimental data on neuroprotective effects of amide neurolipids and their structural analogues. In the final chapter, recent advances in terms of assay validation, instrument configurations and matrix interference for anandamide determination in biological matrices are explored.

Experimental Models in Glioblastoma Research

Felix Mircea Brehar and Mircea R. Gorgan

(Neurosurgery Clinic "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania)

In series: New Developments in Medical Research


Hardcover: 978-1-63321-924-3. $110.00.

This book covers the basic experimental models in glioblastoma research. It starts with a description in the first two chapters of general clinical, neuroimaging and genetic data about glioblastoma (WHO grade IV glioma), which is the most frequent and the most malignant primary tumor in adults. Despite the complex treatment which includes neurosurgery, radiotherapy and chemotherapy, survival of the patients usually is between 9 and 12 months. Moreover, the surgery is not able to cure the disease due to the specific infiltrative growth pattern of glioblastoma. Therefore, laboratory research is essential in order to find new molecular and cellular therapies for this lethal disease. After shortly reviewing the modern hypothesis regarding the origin of glioblastoma in the third chapter, namely the cancer stem cells hypothesis, the author describes step-by-step in the following chapters (Chapters 4-8) the most important in vitro and in vivo models of research in glioblastoma. Chapter 4 is dedicated to the first and the essential step in any research project on glioblastoma: how to obtain good quality glioblastoma samples, how to prepare the samples and how to store the samples long-term for subsequent research. Open surgery and the image-guided stereotactic technique are also described in this chapter. After obtaining the tumor samples, the next step is to initiate the primary cells cultures. These in vitro techniques (either serum conditioning cell cultures and tumor stem cells cultures) will be discussed in detail in Chapters 5 and 6. Usually the new molecules with antitumor activity are tested in vitro on both primary glioblastoma cells cultures but also on glioblastoma cells lines in order to obtain a better standardized results. The next chapter, Chapter 7 is dedicated to in vivo techniques, which are required for testing the anti-tumoral effect of the new molecules before starting with the clinical trials. The author describes in detail the techniques of stereotactic intracranial inoculation of glioblastoma cells (either glioblastoma cell lines or glioblastoma-derived tumor stem cells) and the main growth patterns of the intracranial glioblastoma xenografts obtained using these techniques. Another technique very useful for exploring in real time the migratory glioblastoma cells is the organotypic brain slice cultures which is described in the last chapter of the book.

Horizons in Neuroscience Research. Volume 17

Andres Costa and Eugenio Villalba

In series: Horizons in Neuroscience Research


Hardcover: 978-1-63482-022-6. $190.00.
e-book: 978-1-63482-037-0. $190.00.

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 the effects of b vitamins on behavior and neurochemistry; the human hippocampus; advantages and limitations of functional magnetic resonance imaging (FMRI) of the human visual brain; reaction times as a dependent variable of memory; processing speed and memory; lateral skull base; cognitive impairment in Asperger Syndrome; assessment of proprioception; processing speed and memory; and body weight changes with antiepileptic medications.

Horizons in Neuroscience Research. Volume 18

Andres Costa and Eugenio Villalba

In series: Horizons in Neuroscience Research

2015. 192 pp.

Hardcover: 978-1-63482-368-5. $160.00.

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 major depressive disorder and white matter alterations as evaluated by recent neuroimaging techniques; the discussion of neuremodulation of the postero-lateral hypothalamus has been effective in the treatment of chronic cluster headaches; comparative quantitative neuropathology of the sporadic and variant subtypes of Creutzfeldt-Jakob disease; dizziness in the elderly; morphosyntactic difficulties in the language of persons with Down Syndrome; innovations in stroke rehabilitation; akinet-ic-rigid and tremor-dominant Parkinson’s disease; prescription characteristics of methylphenidate in a pediatric practices; and novel portable electroencephalograph for monitoring human brain activity prior to anxiety with balloon popping stimuli.

Horizons in Neuroscience Research. Volume 19

Andres Costa and Eugenio Villalba

In series: Horizons in Neuroscience Research


Hardcover: 978-1-63482-631-0. $190.00.

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 is research on the symptoms, causes and treatment options of allostudia; the role of environmental toxins in amyotrophic lateral sclerosis (ALS); the prevalence estimates from the national ALS registry of ALS in the United States; pharmacological management of akathisia; increasing serum sodium concentration in...
the acute phase of traumatic brain injury; medial prefrontal cortex alterations induced by drugs of abuse; study updates on drugs for CNS disorders; characterization of cytoarchitecture of dendrites and fiber neurons using the Golgi-cox method; unusual alldynia associated with cluster headache; and calculating consciousness correlates at multiple scales of neocortical interactions.

Horizons in Neuroscience Research. Volume 20
Andres Costa and Eugenio Villalba
In series: Horizons in Neuroscience Research
Hardcover: 978-1-63482-792-8. $190.00.
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 is research on holographic memory; epilepsy and psychiatric co-morbidities; emotional modulation of prepulse inhibition of the startle response in humans; neuroimaging and electrophysiology efficacy in measuring acute effects and long-term sequelae following sports-related concussion; children with writing disabilities; neuroimmune connections in the posterior nasopharyngeal cavity; pulse attraction-repulsion; autism spectrum disorders in children and adolescents with neurofibromatosis type 1; avidity of autoantibodies against antigens in nervous tissue; epidemiological study of childhood epilepsy using the newly classification proposed by the international league against epilepsy; and the role of neuromuscular ultrasound in the diagnostic of the multifocal motor neuropathy.

Horizons in Neuroscience Research. Volume 21
Andres Costa and Eugenio Villalba
In series: Horizons in Neuroscience Research
Hardcover: 978-1-63482-967-0. $190.00.
e-book: 978-1-63483-014-0. $190.00.
The authors’ of this book discuss the most recent advances in neuroscience research. The chapters include updated information on clinical and technical implementation of digital subtraction angiography (DSA) in stroke imaging; association between word display and executive functioning; the connectivity between the cerebellum and inferior frontal gyrus (IFG); the identification and validation of EEG, MRI and SPECT biomarkers for diagnosing, monitoring progression and predicting the onset of Alzheimer’s disease; the language of the pons and medulla; the role of immunosuppression in the treatment of chronic obstructive pulmonary disease (COPD); the role of microglia in the pathogenesis of multiple sclerosis; the role of microglia in the pathogenesis of idiopathic intracranial hypertension; and the role of microglia in the pathogenesis of idiopathic intracranial hypertension and intracranial hypotension syndrome; the causes, treatment and clinical outcomes of idiopathic intracranial hypertension and intracranial hypotension; and the crisis of incommensurability in mathematics/music.

Memory Consolidation
Manabu Sakakibara (Professor of Tokai University, Shizuoka, Japan) and Etsuro Ito (Professor of Tokushima Bunri University, Kagawa, Japan)
In series: Neuroscience Research Progress
Learning and memory are necessary, fundamental functions that animals need in order to survive and adapt to any environment. The ability to learn and form memory depends on changes occurring in neuronal circuits. These changes occur at both the synaptic level and at the level of changes in intrinsic membrane properties of neurons. Such changes involve physical, structural changes (including growth of new processes as well as retractions of other processes.) Some of these changes may persist throughout the life of the organism while others last for relatively short times. While learning and memory are related, they are separate processes with their own ‘rules and regulations’. Longer lasting memories involve changes in protein synthesis as well as gene activity. The molecular changes that occur in neurons and glia that underlie learning and memory result in structural and biophysical changes in single neurons and neuronal circuits. Some of the chapters in this book present the authors’ findings from specific model systems while other chapters present research concerned with memory consolidation in humans, which can be referred to the process by which the changes in neuronal functioning that occur as a result of learning (i.e. new behavior).

Microglia: Physiology, Regulation and Health Implications
Erica R. Giffard
In series: Neuroscience Research Progress
Hardcover: 978-1-63463-986-6. $190.00.
Microglia are the resident brain immune cells of the central nervous system (CNS). These glial cells have an essential role in the CNS development and homeostasis, as well as in several diseases through the production of proinflammatory cytokines, trophic factors and reactive oxygen species, among other elements. Microglia cells are one of the most intrinsically plastic cell types of the human body, possessing the ability to learn and form memory and the ability to learn and form memory. This book discusses the physiology, regulation and health implications of microglia.

Motor Imagery: Emerging Practices, Role in Physical Therapy and Clinical Implications
Brandon M. Garcia
In series: Neuroscience Research Progress
Softcover: 978-1-63483-125-3. $110.00.
Motor imagery, the mental rehearsal of a motor act without overt movement, has been shown to improve motor performance in healthy subjects. It is well known that motor imagery has the potential to promote greater insight to the development of action planning, because of that, it is now considered a fundamental topic of study in the field of motor behavior. This book addresses emerging practices, the role of motor imagery in physical therapy, and clinical implications of motor imagery as well.
Myotonic Dystrophies: Epidemiology, Diagnosis and Therapeutic Challenges
Sandra Jenkins
In series: Neuroscience Research Progress
Hardcover: 978-1-63482-905-2. $160.00.
Myotonic dystrophy is a multisystemic disorder. The epidemiology of DM is examined in the first chapter of this book as well as potential therapeutic strategies. The authors then go on to review the various involvement of the endocrine system in myotonic dystrophy and therapeutic strategies are proposed. The fourth chapter gives an overview on the diagnostic assessment and management of distinct clinical manifestations of CNS (Central Nervous System) involvement in DM patients, and the main topics regarding its pathogenesis are explored. The next chapter focuses on the strategy of neuromuscular blockage for patients with myotonic dystrophy, especially focusing on premedication, induction of anaesthesia, response to muscle relaxants, the crucial points of safe anaesthesiological care and other perioperative triggers. The development of biomarkers is of high importance in the diagnosis and monitoring of diseases and thus is examined with relation to DM1 (myotonic dystrophy type 1) patients. Other chapters summarize the different rehabilitative approaches that have been proposed in this disease; the novel, interesting findings of therapeutic potential to target DM1 with small molecule kinase inhibitors and the promises his may provide to this devastating disorder; the controversial, phenotypical consequences of the interrupted alleles on DM1 patients; and the sleep disorders associated with myotonic dystrophies.

Neural Network Learning in Humans
Giselher Schalow (Dr.med.habil.,Dr.rer.nat.,Dipl.Ing. Untere Kirchmatte, Nottwil, Switzerland)
In series: Neuroscience Research Progress
2015. 343 pp.
Based on human neurophysiology, it has been shown that the human brain and spinal cord can partly be repaired by movement-based learning. It seems that even to a very limited extent, new nerve cells can be built anew in the human central nervous system. Neural network learning starts with the knowledge of basic human neural network functions and their communication with the outside world. Neural network functions can only be explored thoroughly if it is partly known what impulse patterns run into and out of the networks. Even though the gained knowledge is rudimentary, it has immediate consequences for learning and the repair of the human central nervous system. This book discusses the theory of neural network learning. It provides research on neural network learning rates in healthy patients and patients with central nervous system injuries; neural network learning for coma patients; improving health in geriatric and cancer patients; and improving mental functions in patients with depression and anxiety.

Neurogenesis: Cell Biology, Regulation and Role in Disease
Alicia Moreno
In series: Neuroscience Research Progress
2015.
Hardcover: 978-1-63483-687-6. $160.00.
In the first chapter of this fascinating book, the authors present an overview of the evidence that implicates a compromised neurogenic function in the neuropathology of AD, PD and HD and discuss whether treatments aimed at restoring adult neurogenesis might have therapeutic relevance for the treatment of these disorders. In the second chapter, the authors focus on some of the important biological properties of neural stem cells (NSC) in the health and disease brain, addressing the role of ABC transporters in the regulation of NSC behavior. The authors of the third chapter review the effect of prenatal stress on offspring development from the behavioral and neurobiological perspectives, including neurogenesis in the hippocampus. In the last chapter of the book, the author examine the neurogenic properties of melatonin, a major indoleamine of the pineal gland.

Neurorestoratology. Volume 1: Theories and Techniques of Neurorestoratology
Hongyun Huang, Geoffrey Raisman, Paul R. Sanberg and Hari S. Sharma (Lab of Cerebrovascular Research, Dept of Surgical Sciences, Anaesthesiology & Intensive Care Medicine, Univ Hospital, Uppsala Univ, Sweden) Associate Editor: Lin Chen
In series: Neuroscience Research Progress
Neurorestoratology is one of the most important disciplines in modern medicine and is also the most important discipline in neuroscience. Its core aim is to restore, promote and maintain the integrity of impaired or lost neuronal functions and/or structures by using novel cell-based comprehensive neurorestorative strategies. This book is the first and a unique one that systematically expounds the main aspects of neurorestoratology, which includes three sections with 22 chapters in two volumes. It systematically elaborates CNS neurorestorable theory and neurorestorative mechanisms. It firstly comprehends the Neurorestoratorative Process as a whole and Neurorestoratorative law. It fully describes all neurorestorative strategies and their continuing clinical progresses and achievements, especially the cell-based comprehensive neurorestorative strategies.

Neurorestoratology. Volume 2: Clinical Progress of Neurorestoratology
Hongyun Huang, Geoffrey Raisman, Paul R. Sanberg and Hari S. Sharma (Lab of Cerebrovascular Research, Dept of Surgical Sciences, Anaesthesiology & Intensive Care Medicine, Univ Hospital, Uppsala Univ, Sweden) Associate Editor: Lin Chen
In series: Neuroscience Research Progress
Hardcover: 978-1-63463-600-1. $180.00.
Neurorestoratology is one of the most important disciplines in modern medicine and is also the most important discipline in neuroscience. Its core aim is to restore, promote and maintain the integrity of impaired or lost neuronal functions and/or structures by using novel cell-based comprehensive neurorestorative strategies. This book is the first and a unique one that systematically expounds the main aspects of neurorestoratology, which includes three sections with 22 chapters in two volumes. It systematically elaborates CNS neurorestorable theory and neurorestorative mechanisms. It firstly comprehends the Neurorestoratorative Process as a whole and Neurorestoratorative law. It fully describes all neurorestorative strategies and their continuing clinical progresses and achievements, especially the cell-based comprehensive neurorestorative strategies.

New Developments in Serotonin Research
Ming D. Li (Jean and Ronald Butcher Distinguished Professor Head, Section of Neurobiology, Vice Chair
of Research Department of Psychiatry and Neurobehavioral Sciences, Charlottesville, VA, USA)
In series: Neuroscience Research Progress
Hardcover: 978-1-63482-220-6. $110.00.
The primary objective of this book is to provide readers with up-to-date knowledge of recent advances in serotonergic research across different fields. The research topics include the following aspects: The first chapter provides novel evidence supporting the involvement of genetic variants in the serotonin transporter and receptor genes in the etiology of nicotine dependence and alcoholism through gene-by-gene interaction. The second chapter provides an update on genes and genetic variants in the serotonergic network that have been implicated in sudden infant death syndrome. The third chapter discusses how aggressive social stress such as absence of electricity, cold weather, shortage of food, and social isolation influence the development of chronic stress, pathological aggression, and formation of killer and self-killer organisms and how the distribution and concentration of serotonin in the brain are changed along with these physiological and pathological conditions. Chapter Four shows that serotonin signaling influences many developmental processes both in the central nervous system and in the peripheral organs, and Chapter Five reviews new evidence on the involvement of the brain’s serotonergic system in the regulation of food intake, digestion, and metabolism in fish. The last two chapters describe the identification and purification of a novel serotonin-modulating anticonsortiation protein and show how this protein is involved in memory formation and suppression of drug addiction and epileptic seizures in Chapter 6 and in regulation of mutagenesis and adaptation in Chapter 7. Collectively, this book provides a broad view of recent advances in serotonin research in different species of animals. It is our hope that the book will provide readers with a deeper understanding of these new developments in serotonin research across different disciplines.

Oligodendrocytes: Biology, Functions and Role in the Pathology of Diseases
Dana Swanson
In series: Neuroscience Research Progress
Hardcover: 978-1-63483-330-1. $160.00.
Oligodendrocytes have multiple functions in the central nervous system including mechanical support of neurons, production of myelin sheaths and uptake and inactivation of chemical neurotransmitters released by neurons. Consequently, oligodendrocytes could be involved in the pathology of a number of neurodegenerative diseases. The first chapter of this book examines the range of disorders in which oligodendrocytes play a significant role. In the second chapter, the authors review the effects of microglia on oligodendrocytes in both physiological and pathological conditions. The third chapter focuses on cell transplantation for myelination of axons in spinal cord repair. In the fourth chapter, the authors review data showing the induction of some plasticity of oligodendrocytes (OL) by growth factors and axon proteins in vitro. Finally, the last chapter is an examination of the potential uses of anti-S100B therapies to treat myelin-related disorders in order to reduce damage and improve recovery, as well as the quality of life of these patients.

Paraplegia: Clinical Characteristics, Prevalence and Treatment Outcomes
Agnes A. Holloway
In series: Neuroscience Research Progress
Hardcover: 978-1-63482-465-1. $110.00.
In the last 20 years, fundamental research to repair the spinal cord has yielded positive results and today, there is real hope that a cure might be found for the treatment of spinal injuries. This has only been possible because in the last 70 years, patients with a traumatic injury of the spinal cord have been kept alive through conservative forms of treatment and returned to useful independent lives. It is salutary at this stage to look at how this conservative treatment developed. This book begins by providing a history of the treatment of spinal cord injuries and continues by examining the pertinent epidemiology, injury characteristics, and outcomes of spinal cord injury in children. It also discusses anaesthetic management of patients with chronic spinal cord injury; morphological changes of toenails in hemiplegia; and spasticity.

Perioperative Neurosciences
Ehab Farag, Edward Manno, and Maged Argalious (Cleveland Clinic Lerner College of Medicine, Cleveland, OH, USA)
In series: Neuroscience Research Progress
The perioperative neurosciences is a specialty that is continuously evolving. This specialty depends on the integration of neuroanesthesiology, neurology, neurointensive care, neuroradiology, neurointerventional radiology and neurosurgery. This book provides in-depth information for the most recent evidence-based advances in perioperative neurosciences. It includes research on postoperative cognitive dysfunctions, the effect of anesthetics on the growing brain, the new theories for the development of cerebral aneurysm and cerebral vasospasm, and many more. A unique feature of the book is the world-renowned authorities in anesthesiology, neurosurgery, neurointensive care, neurology, and neuroradiology and neurointerventional radiology who helped compile it. Consequently, this book will give the reader a unique opportunity to have in-depth coverage for the most recent advances in this very important specialty.

Repair of the Human Brain and Spinal Cord
Giselher Schalow (Switzerland)
In series: Neuroscience Research Progress
With the single-nerve fiber action potential recording method and the single-motor unit electromyography, the functioning of the human central nervous system (CNS) is analyzed at the single-neuron level under physiologic conditions following injury, malformation and degeneration. It is shown that the self-organization of the neuronal networks of the human CNS by phase and frequency coordination becomes impaired following all nervous system diseases. Out of the differences between the functioning of the healthy and pathologically functioning CNS, a repair treatment is developed called Coordination Dynamics Therapy (CDT). This movement-based learning therapy is able to improve almost every nervous system in its functioning by functional and structural repair for all ages including premature born babies and in aging. The therapy progress with CDT can be quantified by using the System Theory of Pattern Formation. By pattern change, given by a special CDT device, a single value is obtained for the quality of CNS functioning. Especially the tremor in Parkinson’s disease and the urinary bladder repair in spinal cord injury are analyzed in detail by the human neurophysiologic recording methods and clinical assessments. The repair of the human nervous system is shown in cross-sectional and longitudinal studies in mild and severe traumatic brain and spinal cord injuries. By applying CDT, CNS functioning can also be improved in Parkinson’s disease and in aging. The rate of improvement/repair by learning is measured in the healthy and the diseased nervous systems. It is emphasized that the efficacy of movement-based learning therapies may differ by a factor of 100. A
powerful tool in learning is the learning transfer. By training integrative movements, including automatisms, not only the trained movements can be improved, but also the vegetative and higher mental functions can be repaired as, for example, continence, speech and cardiovascular performance.

Subarachnoid Hemorrhage: Epidemiology, Management and Long-Term Health Effects
Linda R. Gray
In series: Neuroscience Research Progress
Hardcover: 978-1-63463-492-2. $190.00.
Subarachnoid hemorrhage (SAH) can be classified as spontaneous or traumatic bleeding into the subarachnoid space. It is usually followed by a head injury or due to an aneurysmal rupture. Aneurysmal SAH is often a devastating occurrence that usually affects the younger population and is associated with high morbidity and mortality. Chronic smoking, heavy alcoholism, hypertension, atherosclerosis, late pregnancy are well-documented risk factors for subarachnoid hemorrhage. This book discusses the epidemiology, management and long-term health effects of subarachnoid hemorrhages.

Synaptic Fundamentals of Memory Performance
Ignacio González-Burgos (Centro de Investigación Biomédica de Occidente, Instituto Mexicano del Seguro Social, Guadalajara, Jal. México)
In series: Neuroscience Research Progress
Hardcover: 978-1-63483-279-3. $190.00.
e-book: 978-1-63483-296-0. $190.00.
Memory could be conceptualized as the capability to encode, store and retrieve information to guide behavior. Memory may be stored in different manners depending on synaptic characteristics for information processing, which may modulate synchronization of firing of neuronal assemblies. This book focuses on some of the mechanisms that modulate the synaptic activity underlying both the organization and expression of memory. Thus, memory is viewed from the point of view of its synaptic determinants. This book is the integrated compilation of a large body of experimental evidence related to some cellular and subcellular events underlying plastic changes of neural circuits forming the memory traces related to some memory systems. Moreover, this view of memory is considered from both a normal viewpoint and from that of some atypical situations.

NUTRITION
Genistein and Daidzein: Food Sources, Biological Activity and Health Benefits
Masayoshi Yamaguchi (Department of Hematology and Medical Oncology, Emory University School of Medicine, Atlanta, USA)
In series: Nutrition and Diet Research Progress
Soybeans are greatly used in many foods, such as tofu, soy milk and yogurt, and it plays an important role as a functional food in the health and prevention of various diseases. Soybeans contain rich isoflavones including genistein, daidzein and glycitein, and both genistein and daidzein occur at higher concentrations. Isoflavones are structurally and functionally similar to 17β-estradiol. Isoflavones are found to bind to estrogen receptors and the peroxisome proliferator-activated receptor (PPAR) family and aryl hydrocarbon receptors. Moreover, isoflavones affect activity of tyrosine kinases, histones, transcription factors, adenosine mono phosphate pathways, RNA expression and other intracellular regulators. Thus, isoflavones play a multifunctional role in cell regulation. This book focuses on recent advances in the food sources, biological activity and health benefits of genistein and daidzein.

PEDIATRICS
A Pediatric Resident Pocket Guide: Making the Most of Morning Report
Arthur N. Feinberg (Department of Pediatric and Adolescent Medicine, Western Michigan University School of Medicine, Kalamazoo, MI, USA)
In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
2015. 103 pp.
Softcover: 978-1-63482-141-4. $82.00.
e-book: 978-1-63482-186-5. $82.00.
The author's main goal in this book is to introduce the beginning student or pediatric resident to a systematic method of medical decision making. This book is divided into three basic sections: history-taking; physical examination; and medical reasoning. It is important to note that the purpose of this book is NOT to teach everything there is to know about every possible medical diagnosis, but rather to establish a framework for reasoning out a problem. The author assumes that as the learners read about and experience many more encounters over their training period they will be able to apply the facts to this basic framework. Thus, it is important to note that the history-taking and physical examination, first and second sections specifically do NOT mention any diagnoses. Their main purpose is to present the full array of data that needs to be gathered. Note the insertion of several clinical tricks of the trade to help gain accurate data. The third section, medical reasoning will take the reader through the thought process of arriving at a diagnosis. It addresses sifting and winnowing through large amounts of data: interpretation of history, what questions to ask, what questions may or may not be pertinent to the situation at hand, making initial hypotheses and testing them with information from a physical examination. We discuss what to examine based on the history, interpreting the remaining data, re-evaluating hypotheses, re-thinking them and narrowing them further, ideally (but not always) into a unifying hypothesis. If necessary, the author discusses the use of laboratory and imaging as further means to test hypotheses. The author then discusses making treatment plans with the idea forefront in the mind that the hypothesis still may indeed be wrong and have to be revised. The narrowing-down process is critical and necessary for the rational practice of medicine and the techniques are often referred to as “heuristics” (short-cuts). They are most helpful, but are certainly not infallible. The author therefore discusses pitfalls in clinical diagnosis in order to keep the reader keenly aware of the fact that hypotheses are in need of constant review and revision if necessary. This book presents two illustrative and simple cases as journeys through the medical reasoning process. As the learner progresses, he/she will learn to navigate through more difficult cases. However, the more simple cases provide the tools to use for the more complex ones. It is the author’s hope that early on in medical training the learners will appreciate the importance of good histories and physical examinations and how to interpret them. They will find that much of the information gathered in this manner will serve them well and lead to more judicious and appropriate usage of technology to arrive at diagnoses.
Behavioral Pediatrics, 4th Edition
Donald E Greydanus, Dilip R Patel, Helen D Pratt, Joseph L Calles Jr., Ahsan Nazeer and Joav Merrick (Dept. of Pediatric and Adolescent Medicine, Western Michigan University, Homer Stryker MD School of Medicine, Kalamazoo, MI, USA)
In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
Hardcover: 978-1-63483-027-0, $310.00.

This book is designed to provide primary care clinicians with a practical guide to the significant problems that increasingly affect the emotional health of children and adolescents. This book is written in clear, concise language by experts in developmental-behavioral pediatrics, neurodevelopmental pediatrics, adolescent medicine, psychology, and child/adolescent psychiatry. We present a comprehensive coverage of normal and pathological behaviors based on principles of child and adolescent development. The editors are nationally and internationally known experts and educators in the normal and abnormal behavior of children and youth. With the information available in this book, clinicians who care for children and adolescents will be better equipped to meet the complex needs of this fascinating and ever-changing population.

Caribbean Adolescents: Some Public Health Concerns
Cecilia Hegamin-Younger, Ph.D. and Joav Merrick, M.D. (Department of Public Health and Preventive Medicine, St George’s University, Grenada, West Indies)
In series: Pediatrics, Child and Adolescent Health
Edited by: Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
Hardcover: 978-1-63483-341-7, $160.00.

In the Caribbean, sexuality is omnipresent; that is, it is seen but not heard. The Caribbean region can be characterized as a dualistic society. On the one side, sexuality is embraced and highly visible, manifesting itself in the culture of the music, dance, and the popular Carnival. The other side presents a society that is conservative and inhibiting, one that is heavily influenced by religion. There is a lack of communication regarding sexuality, both within schools and homes, making it very challenging for parents to be open with their children on the subject matter. Let’s face it, many parents do not feel comfortable talking to their children about sexuality for a variety of reasons. In this respect, sexual education offered in schools helps open the discussion. However, it is not a panacea. Parents should not leave this important topic to the schools. Rather, parents should work together with the schools and the information that is disseminated to ensure the values and beliefs of the family, community and society are integrated. In this book, we present recent research on sexuality, alcohol, drugs and violence from the Caribbean region.

Disability, Chronic Disease and Human Development
Joav Merrick, M.D. (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 (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)

Disability is part of human life and most of us will, at some time during our lifetime, experience an impairment or difficulty in our functioning, either by disease or in our old age. Once upon a time, disability in a person resulted in many kinds of disadvantages and shunning from society as a whole, but in our time society has changed attitudes toward this part of our population. The idea today is to transform a disability into an ability and to support and help this population in any way possible via treatment, interventions or new technology to make a better quality of life and an optimal functioning, despite the disability or chronic disease. Chronic disease for example is a long lasting condition that can be somehow controlled, but not cured. This lifespan approach to chronic diseases was the topic of the Gerry Schwartz and Heather Reisman 4th International Conference on Pediatric Chronic Diseases, Disability and Human Development held in Jerusalem, Israel during January 21-23, 2015 and in this book you will find the abstracts from the conference.

Orthopedic Management of Children with Cerebral Palsy: A Comprehensive Approach
Federico Canavese and Jacques Deslandes (Department of Pediatric Surgery, University Hospital Estaing, Service de Chirurgie Infantile, Clermont Ferrand, France)
In series: Pediatrics - Laboratory and Clinical Research
Hardcover: 978-1-63483-318-9, $310.00.

Each child with cerebral palsy is absolutely unique and the professionals looking after the child must provide an evaluation of his or her specific situation. In publishing this book, the editors and authors have followed a well-defined theme: even if the initial focus is orthopedics, it is aimed towards a comprehensive approach to understanding children with cerebral palsy. The reader who is aware of the orthopedic problems encountered in cerebral palsy will find the most recent data regarding various aspects of the pathology enlightening. It will also give them the opportunity to find answers to questions professionals regularly ask themselves: what are the necessary checks-ups to be done in other areas, what other measures need to be planned (whether medical, paramedical, school-related, family or socially-oriented), and how to fit all of these in with orthopedics. This book offers an approach by a group of cerebral palsy specialists who are culturally open to the worldwide community, but whom also hold on to their specific disciplines and origins as well as their differences as source of cultural wealth. This book focuses on the comprehensive approach to understanding children with cerebral palsy and beyond, to the care extended to their families, to the patient’s educational life as well as to their very unique being and identity.

Paediatric Pulmonary Function Testing: Indications and Interpretation
Charis Katsardis, A. Koumbourlis, Michael Anthracopoulos and E. Paraskakis (General Hospital of Athens, "Elpis," Amarousion, Athens, Greece)
In series: Pediatrics - Laboratory and Clinical Research
2015.
Hardcover: 978-1-63483-492-6, $210.00.
The textbook “Paediatric Pulmonary Function Testing: Indications and Interpretation” is a comprehensive and up-to-date overview of the latest lung function techniques for infants and children addressed to
paediatric respiratory medical practitioners. Experienced European and North American authorities in the field of pediatric pulmonology provide an essential tool for fellows, paediatricians and paediatric pulmonologists caring for patients with pulmonary diseases. This book is extensive, comprehensive and practical for the clinical setting as it: 

• Covers all lung function tests with extended analysis of reference equations and Z-score evaluation 

• Provides practical guidance on the interpretation of functional pulmonary tests and evaluation examples, demonstrating what information is critical for everyday clinical application 

• Introduces novel techniques such as ventilation inhomogeneity, while details such as exhaled nitric oxide and exhaled breath condensates are comprehensively analysed 

• Includes indications and interpretations of analyses of blood gases, hemoglobin saturation, capnography and acid-base balance 

• Contains a chapter on the selection and use of each pulmonary function test as applied in the clinical investigation of patients with respiratory problems. 

Pediatric Diabetic Ketoacidosis: Risk Factors and Pathophysiology, Management Strategies and Outcomes

Stephen C. Duck and Joseph R. Hageman (Pediatric Endocrinologist, Department of Pediatrics, NorthShore University HealthSystem, Evanston, IL, USA)


The future of persons with Type 1 Diabetes Mellitus is continuing to "look brighter" with the advent of biomedical technology. Nevertheless, the acute consequences of this disease remains a significant threat. Diabetic ketoacidosis (DKA) remains the most serious challenge for primary care physicians and subspecialists caring for children and young persons with Diabetes Mellitus. Its prevention is possible only among those already diagnosed. Awareness of the etiology and clinical presenting signs among children of all ages is requisite for primary care and emergency department staff [Chapter 1]. While more likely to occur among those with Type 1 diabetes, a significant proportion of children with Type 2 diabetes are also at risk [Chapter 3]. Once diagnosed, the physician team must understand not only what biochemical imbalances must be corrected, but also what life-threatening complications must be avoided [Chapter 1]. The path through that “maze” is not yet fully interpreted; many choices remain as options, but each must be carefully evaluated. Diagnosis among the very young is a challenge because of their lack self-awareness and clarity of signs and symptoms [Chapter 2]. Education of the primary care staff is critical and able to alter the incidence of DKA at the time of diagnosis. Institutions that treat children and adolescents with DKA need an informed Emergency Department as well as Pediatric Intensive Care Facilities. Access to appropriate consultations, such as pediatric endocrinology, cardiology, neurology and neurosurgery are crucial. The initiation of care is critical, and occurs invariably in the Emergency Department [Chapter 4]. Meticulous documentation of fluid composition and volume, insulin administration, vital signs and neurological state of well-being is essential. These will facilitate the transition to the appropriate in-patient service, whose task is to understand the biological impact of fluid rehydration and fluid flux, as well as hypoxacnea, hyperglycemia and cranial perfusion [Chapter 5]. The current standards of care all but prevent most of the varied biochemical complications of “appropriate” care for persons with DKA. However, awareness of these possibilities is crucial [Chapter 6]. Yet, one complication remains unexplained and too often unpredicted, and it is devastating to the pediatric patient: cerebral edema. This complication, its prevention and treatment are discussed [Chapter 6]. Type 2 diabetes mellitus is continuing to increase in incidence and prevalence around all ages. Once thought to be “non-ketosis prone” diabetes, now persons undiagnosed or previously diagnosed do obtain DKA. They, however, have other unique medical requirements that must be applied to their treatment [Chapter 3]. Hyperglycemic hyperosmolar state is a complication no longer limited to adults with diabetes or children with Type 2 diabetes mellitus. While the incidence is fortunately lower than that of DKA, its outcome is potentially direr. Appreciation of the unique treatment requirements and guidelines are discussed [Chapter 7]. This monograph provides a comprehensive compendium to those caring for children of all ages with diabetic ketoacidosis, its related disorders and associated conditions.


Richard R. Roach, Donald E. Greydanus, Dilip R. Patel and Joav Merrick (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


Tropical medicine is a branch of medicine focusing on disorders usually found in subtropical and tropical areas of the world, while 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. This second revised and enlarged edition highlights selective concepts of tropical pediatrics that are of importance to clinicians caring for children and adolescents. It is dedicated to clinicians around the world who care for these precious patients growing up in remote corners of globe. It should always be remembered that sometimes these issues become important to developed corners of the world as well.

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


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 subspecialities, 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 reno-protection.

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.
Softcover: 978-1-63482-931-1. $62.00.
The number of uninsured individuals and the rising cost of health insurance have been long-standing issues. The Patient Protection and Affordable Care Act (PPACA) mandated that most individuals have health insurance that provides minimum essential coverage or pay a tax penalty. To make health insurance more affordable and expand access, PPACA created the advance premium tax credit (APTC) to subsidize the cost of exchange plans’ premiums for those eligible. This book examines what is known about the effects of the APTC and the extent to which affordable health benefits plans are available and individuals are able to maintain minimum essential coverage. Furthermore, new federal tax credits, authorized under the PPACA, first became available in 2014 to help certain individuals pay for health insurance. The tax credits apply toward premiums for private health plans offered through exchanges (also referred to as health insurance marketplaces). This book provides examples of hypothetical individuals and families that qualify for the premium credits and describes the eligibility criteria applicable to the premium tax credits and cost-sharing subsidies, and the calculation method for the credit and subsidy amounts. It also highlights selected issues addressed in the final regulation and guidance on premium credits and indicates the status of implementation, where relevant data is available.

Adenosine Signaling Mechanisms: Pharmacology, Functions and Therapeutic Aspects
Vickram Ramkumar and Roberto Paes de Carvalho (Department of Pharmacology, SIU School of Medicine, Springfield, IL, USA)
In series: Pharmacology - Research, Safety Testing and Regulation
Hardcover: 978-1-63483-186-4. $270.00.
The role of adenosine and adenosine receptors in normal cell physiology and in diseases has been an area of active research over the last several decades. The field has advanced from the use of limited tools to examine receptor signaling and function to the use of various molecular and receptor knockout techniques to examine the details of the expression and functions and regulation of these receptors. This book highlights important milestones in adenosine receptor research and reviews recent findings from experts in different research areas. Several research areas, ranging from cardiovascular, cancer, and central nervous system research are discussed. Several of the chapters describe how understanding the basic cellular mechanisms regulated by adenosine could lead to the development of important therapeutics. The editors, Vickram Ramkumar and Roberto Paes-de-Carvalho, have published extensively on adenosine receptors for more than two decades and are still active in this field of research. It is our hope that this book provides an excellent synopsis of the current status of adenosine receptor research which would be valuable for researchers in the field and as a reference source for clinicians and others interested in this area.

Antihypertensive Drugs: Pharmacology, Medical Uses and Potential Side Effects
Scott Caldwell
In series: Pharmacology - Research, Safety Testing and Regulation
Pulmonary arterial hypertension (PAH) is a progressive, fatal syndrome characterized by increased pulmonary vascular resistance that leads to right-ventricular hypertrophy and heart failure, eventually leading to premature death. Arterial hypertension is one of the most important preventable contributors to disease and death and is commonly treated with antihypertensive drugs combined with appropriate changes in lifestyle. Most of the drugs used in the hypertension treatment are administered orally in solid form and therefore they can crystallize in different crystalline forms. There are many classes of antihypertensive drugs which decrease blood pressure by different mechanisms. This book discusses the pharmacology, medical uses and potential side effects of antihypertensive drugs.

Coenzyme Q10: From Fact to Fiction
Iain P. Hargreaves, Ph.D. (Neurometabolic Unit, National Hospital, Queen Square, London, UK)
Assistant Editor: April K. Hargreaves, Ph.D. (Trinity University, Dublin, Ireland)
In series: Pharmacology - Research, Safety Testing and Regulation
There is a growing interest in coenzyme Q10 (CoQ10) and its involvement in many aspects of daily living including physical and mental health, energy, aging, stress, skin care and exercise. This book aims to highlight our current understanding of CoQ10 in each of these areas by presenting a selection of topics that clearly illustrates its role in both health and disease. Each chapter provides a specialist’s insight into the subject whilst being written in a manner that is accessible to the non-CoQ10 expert. Is CoQ10 deficiency a contributor to heart disease, depression or migraines? Can taking CoQ10 supplements reduce symptoms of menopause, increase exercise tolerance or make our skin look younger? What is known about the genetics of CoQ10 biosynthesis? These are just some of the questions addressed in this book: which of them is fact and which is fiction?

Commonly Used Drugs - Uses, Side Effects, Bioavailability and Approaches to Improve It
Rafik Karaman (College of Pharmacy, Al-Quds University, Jerusalem)
In series: Pharmacology - Research, Safety Testing and Regulation
Corticosteroids and Steroid Therapy: New Research

Carmen Adkins

In series: Pharmacology - Research, Safety Testing and Regulation
Hardcover: 978-1-63482-308-1. $110.00.

Corticosteroids (CS) are naturally occurring biomolecules produced in the adrenal cortex and have a multitude of roles which includes metabolism, inflammation and regulation of water, electrolyte etc. Based on their functions, steroids are classified as glucocorticoids and/or mineralocorticoids, and only the addition of pharmacokinetics coverage, ways to improve the bioavailability of commonly used drugs and sections on therapeutics that will help readers identify with diseases and drug treatments, this book provides better preparation of researchers in the basics of pharmacology.

Cyclophosphamide: Clinical Pharmacology, Uses and Potential Adverse Effects

Maher Salamoun, M.D. (Breast Cancer Department, Al-Bairouni University Cancer Center, Damascus, Syria)

In series: Pharmacology - Research, Safety Testing and Regulation

This text contains seven chapters, five of which are original articles. One of them deals with the invention and development of cyclophosphamide, mechanisms of action and side effects while a separate chapter deals with the management of hemorrhagic cystitis, the most important and serious side effect after using the drug at high doses. Other chapters cover the clinical application in metastatic breast cancer and the role of cyclophosphamide in improving breast cancer microenvironment through mobilization of mesenchymal stem cells from bone marrow. The idea of metronomic chemotherapy in combination with Aromatase inhibitors (AI) in breast cancer with bone metastasis is also explained in this book. Cyclophosphamide may replace Ifosfamide in case of an Ifosfamide shortage in metastatic soft tissue sarcoma. Finally, the drug that forms one of the backbones of the ACEP protocol used to treat the aggressive Peripheral T-cell non-Hodgkin’s lymphoma is described by the authors.

Fluoxetine: Pharmacology, Mechanisms of Action and Potential Side Effects

Graziano Pinna (University of Illinois at Chicago, Psychiatric Institute, Chicago, Illinois, USA)

In series: Pharmacology - Research, Safety Testing and Regulation

Fluoxetine, best known by the trade name Prozac®, unlike other psychotropic drugs whose effects were serendipitously stumbled upon, was the first developed for a precise mechanism of action, that is, the ability to selectively inhibit serotonin reuptake, based upon the theory that increasing the availability of serotonin would treat major depression. Once approved by the FDA in 1987, fluoxetine quickly became the most prescribed psychotropic drug worldwide and its success in improving mood disorders has triggered the development of a large number of congener molecules, commonly known as SSRIs after their purported mechanism of action. However, a quarter of a century after its development, the idea that fluoxetine asserts its positive behavioral effect through inhibition of serotonergic reuptake is not firmly established. This book reviews several preclinical and clinical reports suggesting that the pharmacological effects of fluoxetine may be mediated by means other than the regulation of serotonin, including the regulation of gene expression, modifying epigenetic mechanisms as well as modifying microRNAs. One of the most prominent mechanisms for the therapeutic relevance of fluoxetine relates to influencing neuroplasticity by enhancing neurotrophic factors, including BDNF signaling and altering adult neurogenesis. The ability of fluoxetine to rapidly increase neurosteroid levels accounts for the fast anxiolytic effects of this drug. Fluoxetine action at sigma-1 receptor or modulating glutamatergic neurotransmission as well as the combination of fluoxetine with other psychotropic drugs is discussed in relation to its therapeutic effects. While fluoxetine was primarily prescribed as an antidepressant, this drug currently represents a treatment of choice for a broad spectrum of psychiatric disorders, including post-traumatic stress disorder and a range of anxiety disorders. This drug even possesses analgesic actions and is a valuable therapy for stroke. This book also highlights emerging evidence on the gender-specific effects of fluoxetine, its potential adverse features, including its addiction liability in combination with psychostimulants, and the impact of perinatal fluoxetine exposure.

Propranolol: Medical Uses, Mechanisms of Action and Potential Adverse Effects

Mislav Puljević, M.D., Ph.D. (University of Zagreb, School of Medicine, University Hospital Center
In the practice of gastroenterology, beta blockers have been used in medical practices since 1962 and still play an important role as a remedy for various diseases. Although primarily used in cardiovascular cases, it is also used in neurology, endocrinology, psychiatry and gastroenterology. Unfortunately, newly discovered beta blockers have replaced the use of propranolol as a regular treatment for cardiologists. Despite this, we strongly believe in conducting new studies that may show properties in propranolol being more beneficial to patients in some cases than new beta blockers. There are situations now and then where all other forms of modern medicine have proven futile in aiding physicians with their practices. Many of these cases report new and interesting indications that show propranolol might work more efficiently under particular conditions. This book provides readers with the benefits of propranolol in different branches of the medical field. The authors of these chapters are elected, distinguished experts of different medical disciplines from all around the world. It was a great pleasure to gather their influential and respectable viewpoints about this neglected medicine. Additionally, the future of propranolol in terms of chemical theory is deliberated within these pages. The authors' main objective was to shed light on the universality of propranolol. They hope to help save the use of this pharmaceutical before it is completely superseded by ever-evolving drugs.

Proton Pump Inhibitors (PPIs): Prevalence of Use, Effectiveness and Implications for Clinicians

Barbara Parker

In series: Pharmacology - Research, Safety Testing and Regulation

Hardcover: 978-1-63482-890-1. $110.00.

Proton pump inhibitors (PPIs) have become a mainstay of therapy not only in the practice of gastroenterology, but also for general medicine and even for the general public. Recently, proton pump inhibitors have been associated with a number of potential complications including impaired vitamin and mineral absorption, altered drug metabolism and increased risk for infections. The outline for the basis for these reported risks are examined in this book, the current clinical evidence is discussed, and the authors offer insight into the likely clinical significance of each complication. Furthermore, the pathophysiology of acid secretion and inhibition, with a specific focus on the pharmacological principles surrounding the use of PPIs are reviewed. Relevant information on the management of acid-related disorders is provided for clinicians. Other chapters explore the current literature on potential complications associated with long-term PPI use, the benefits and risks of routine use of proton pump inhibitors in the intensive care unit (ICU), often associated with adverse events such as a significantly increased risk of infectious complications, and the use and misuse of proton pump inhibitors in the general population.

Recent Developments in Beta-Blockers Research

Yousef Shahin (Clinical Research Fellow in Vascular Surgery, Hull York Medical School, University of Hull, Hull, United Kingdom)

In series: Pharmacology - Research, Safety Testing and Regulation

Hardcover: 978-1-63482-409-5. $110.00.

This book highlights recent advances in beta blockers research. Beta blockers have been used for the treatment of several clinical conditions and it is of paramount importance to understand their role and applications. Chapters of the book were written by experts in the fields of vascular disease, plastic surgery, cardiovascular medicine, pharmaceutical medicine and physiology from various countries such as the United States, the United Kingdom, Brazil, Japan and New Zealand. Clinical topics on recent advances in β-blockers research covered in this book include the clinical effectiveness of β-blockers in patients with peripheral arterial disease, abdominal aortic aneurysm, heart failure, acute coronary syndrome, pulmonary hypertension, object memory recognition, portal hypertension and infantile hemangiomia. These chapters were written by authors who are experts in their fields and by researchers who are most up-to-date in the recent literature on advances in β-blockers research.

Voriconazole: Pharmacokinetics, Role in Therapeutic Drug Monitoring and Clinical Outcomes

Andrea Angelini, M.D. (University of Bologna, Istituto Ortopedico Rizzoli Department of Orthopaedics and Musculoskeletal Oncology, Bologna, Italy)

In series: Pharmacology - Research, Safety Testing and Regulation

Hardcover: 978-1-63463-313-0. $170.00.

In the last twenty years, the incidence of invasive fungal infections (IFI) has risen dramatically due to the prolongation of survival of patients with multiple risk factors for fungal infections and due to the increase of infection associated with travel. Moreover IFI in infants admitted to the neonatal intensive care unit are common and often fatal. Amphotericin B was for more than 40 years the gold standard for almost all IFI, but toxicity and resistance, especially of new and emerging pathogens remained important issues. Fluconazole and itraconazole have also the same disadvantage of resistance. After a long period of relative inactivity in the introduction of new antifungals, more recently a few new drugs of already existing classes have been introduced as important agents in the treatment and prevention of IFI. These represent small or large advantages and differences compared with existing available alternative therapy for deep and systemic mycoses. Voriconazole is a second-generation triazole antifungal drug, often prescribed as first-line therapy for candidemia, in non-neutropenic hosts, for invasive pulmonary aspergillosis and as prophylaxis of many systemic mycoses. In-vitro and in-vivo studies showed that voriconazole has broad-spectrum activity against most Candida species, Aspergillus species, fusariosis or scedosporiosis. Voriconazole has non-linear pharmacokinetics and, as substrate and inhibitor of cytochrome P450, it undergoes extensive hepatic metabolism that depends on age, genetic factors, and interactions with other drugs, which may lead to enhanced toxicity of the concomitant medication(s) or ineffective antifungal treatment. This book presents an update on voriconazole research, particularly its pharmacology, microbiology, toxicology, and clinical outcomes in order to optimize its use in daily clinical practice.
potential health complications that may be caused by macrosomia. Outcomes. This book addresses several risk factors, outcomes and weight and is diagnosed when the birth weight exceeds a threshold. Macrosomia is a term used to describe a neonate with excessive birth e

Psychological and Social Issues

In series: Human Anatomy and Physiology

Aubrey M. Stone


Hardcover: 978-1-63482-155-1. $160.00.

Bone mineral density (BMD) is a determinant of bone health. Phenotype, age, race, gender, activity level and overall health status all affect BMD. Recent research has shown that early pregnancy loss could be associated with bone mineral density. Reduced bone mass, bone density and consequently the pathological conditions, osteopenia and osteoporosis, represent significant health problems and contribute to disability, mortality, and reduced health related quality of life among older women and men. This book describes disorders that affect bone density, such as rickets and osteomalacia, and discusses screening and treatment options available for these and other bone disorders.

PREGNANCY

Handbook for High Risk Pregnancy: Clinical Management

Ernesto González-Mesa and Daniel Abehera (School of Medicine, University of Malaga, Spain)

In series: Pregnancy and Infants: Medical, Psychological and Social Issues


Hardcover: 978-1-63482-299-2. $190.00.

There is a group of women that have a greater chance of pregnancy complications due to pre-existing health conditions or the occurrence of a specific disease related to pregnancy. Although some of these conditions are common, others have a low prevalence and the management requires a number of concerns to health care providers. This book, whose chapters have a similar structure focused on the clinical, diagnostic and therapeutic features will become an important tool to display the most appropriate clinical management in high risk cases.

Macrosomia and Birth Weight: Risk Factors, Outcomes and Potential Health Complications

Larry P. Harris

In series: Pregnancy and Infants: Medical, Psychological and Social Issues

2015. 113 pp.

Hardcover: 978-1-63483-124-6. $110.00.

Macrosomia is a term used to describe a neonate with excessive birth weight and is diagnosed when the birth weight exceeds a threshold. Macrosomia is associated with numerous maternal as well as neonatal complications and is, therefore, a major cause of adverse pregnancy outcomes. This book addresses several risk factors, outcomes and potential health complications that may be caused by macrosomia.

Maternal Mortality: Risk Factors, Anthropological Perspectives, Prevalence in Developing Countries and Preventive Strategies for Pregnancy-Related Deaths

David A. Schwartz (Clinical Professor of Pathology, Georgia Regents University – Medical College of Georgia, Augusta, Georgia, USA)

In series: Pregnancy and Infants: Medical, Psychological and Social Issues


Hardcover: 978-1-63482-709-6. $160.00.

Pregnancy is a life-threatening event in many parts of the developing world. Globally, it is estimated that 289,000 women died from being pregnant in 2013. The lifetime risk for dying as a result of pregnancy is as high as 1 in 6 for women living in the poorest nations of the world. Ninety-nine percent of all maternal deaths occur in resource-poor nations, averaging 800 deaths each day or 33 per hour. Improvement in maternal mortality was addressed by the United Nations in 1990 by the Millennium Development Goals (MDG’s) in which the 5th goal was global reduction of this statistic by three-quarters by the year 2015. However, this goal will not be achieved. For every mother that dies from pregnancy in resource-poor countries, 15 to 30 additional women develop serious damage. This textbook addresses the continuing problem of maternal deaths in developing nations from three perspectives: medical, anthropological, and epidemiological. The twenty-eight internationally-respected authors in this textbook have had direct field experience with maternal health and pregnancy complications in resource-poor regions. They provide up-to-date analysis of maternal deaths in the regions of the world most affected by this public health problem. These locations include Asia, South America, and—most severely affected—Africa. Prior to this publication, specialists in the fields of obstetrics, epidemiology, and socio-cultural anthropology have rarely shared and combined their insights into maternal death causation and prevention. This book combines the experiences and opinions of: anthropologists • nurses • midwives • physicians • epidemiologists • staff of national Ministries of Health • public policy advisers • members of international organizations These individuals collaborate to inform the reader of a multi-specialty approach to understand the difficulties of improving maternal mortality in developing nations. These twenty chapters are extensively highlighted with color photographs, tables, charts and maps to illustrate the statistical and geographic aspects of the author’s opinions and experiences. Not only is this the first published textbook to address maternal death in many years; it is the first to examine it by using a combined anthropological-medical-epidemiological approach. This book belongs in libraries of anyone working in the areas of maternal health, pregnancy complications and mortality in developing nations.

Prenatal and Maternal Diagnosis, Screening and Infant Development Implications

Aaron Henderson

In series: Obstetrics and Gynecology Advances


Hardcover: 978-1-63482-709-6. $160.00.

One of the challenging issues of contemporary pediatrics is potential long-term effects of maternal cigarette smoking during pregnancy on the subsequent infant behavioral and cognitive development. The chapters in this book address to what extent and in what direction maternal smoking during pregnancy may influence infant’s behavior during sleep. Recent reports were highly indicative that sleep disturbances were common in the newborns of the mothers who have been heavy smokers during pregnancy. Snuff consumption during pregnancy is discussed, which has many adverse effects on the fetus, i.e., spontaneous abortion, premature delivery premature sagging of the
placenta, vaginal bleeding, high blood pressure and heart rate, premature rupture of membranes, among others. The authors of the third chapter discuss orofacial clefts, and with the development of ultrasound technology, how they can be detected antenatally which can ultimately help with the planning postnatal management of babies. Nowadays, prenatal diagnosis is necessary for pregnant women. In the fourth chapter, technical advancements of using maternal circulating nucleic acids as the sample in noninvasive studies is introduced, highlighting the utilization of next-generation sequencing in the screening of genetic diseases. The fifth and final chapter introduces Comparative Genomic Hybridization (CGH) analysis in postnatal analysis and its use as a first-tier test in cases of Intellectual Disabilities.

**PSYCHOLOGY AND PSYCHIATRY**

**Modulators of Glutamatergic Signaling as Potential Treatments for Neuropsychiatric Disorders**

Zoran M. Pavlovic, M.D. (CEO, Neuropassion LTD & Co.)

In series: Psychiatry - Theory, Applications and Treatments

2015.


e-book: 978-1-63483-522-0. $160.00.

Mounting evidence from preclinical and clinical research suggests that the glutamatergic system is highly involved in the pathophysiology of major neuropsychiatric disorders. All of these scientific activities are a necessary first step, which translates into opportunities in terms of development of new and improved treatment strategies. Glutamate-based research over the last couple of decades has provided novel insights into the pathogenesis of both psychiatric disorders such as treatment resistant depression, bipolar disorder, schizophrenia, PTSD, ADHD and neurological disorders including Alzheimer’s dementia, migraine, epilepsy, ALS and neuropathic pain. Recent news developments also indicate glutamate involvement in neurodevelopmental disorders such as autism. In addition to the above, recent discoveries that several novel therapeutic agents like rituximab, memantine, ketamine, topiramate and lamotrigine possess glutamatergic properties as part of their mechanism of action, further boosted the interest of drug development companies and academic research centers to put more effort into investigating novel therapeutically efficacious compounds. Moreover, recent large “real life” clinical studies, such as STAR*D, also looked into disease-associated glutamate genetics and paved the way for the future creation of first individualized pharmacogenetic treatments. The overall purpose of this book is to provide the reader with expert opinions relating to the most up-to-date information on glutamate’s role in pathophysiology of neuropsychiatric disorders and current and future glutamatergic treatment strategies. The authors hope that this contribution will foster future research activities, which are all ultimately aiming to improve quality of life in patients with chronic, psychiatric and neurological disorders, thus enhancing their contribution to society.

**PUBLIC HEALTH**

**Alternative Medicine Research Yearbook 2014**

Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)

In series: Health and Human Development

2015.


In this yearbook we start out with chapters on mental health, stress, yoga and other interesting topic on alternative medicine, but the other three sections are related to psychiatry and dermatology. The skin has evolved over millions of years of life from a simple envelope to cover microscopic organisms to a complex organ system that has protected complex life from a harsh environment. The skin and central nervous system (CNS) develop together in utero and remain intricately connected throughout the life of Homo sapiens. Diseases of the skin have led to considerable medical as well as psychological morbidity, caustic contumely, and even Stigian mortality over the hundreds of years of the hominoid existence. When the skin is diseased, significant psychosomatic, behavioral, and psychiatric factors can result in a gallimaufry of primary and/or secondary disorders. Both dermatologists, primary care clinicians, psychiatrists, psychologists, and others can learn from these chapters, take this knowledge and apply it to their patients.

**Child and Adolescent Health Yearbook 2014**

Joav Merrick, MD, MMEdSci, DMSc (Medical Director, Health Services, Ministry of Social Affairs and Developmental Disabilities, Ministry of Health and Human Development, Jerusalem, Israel)

In series: Pediatrics, Child and Adolescent Health

2015.


e-book: 978-1-63482-206-0. $270.00.

It is now apparent that chronic diseases starts in early childhood and professionals should therefore emphasize the importance of a lifestyle of regular physical activity from childhood and during adolescence, which continues into and throughout adulthood, for the health and well-being of both individuals and populations. Programs that correspond with an active life style should be assembled in accordance with clinical and research findings, be community based and easily accessed by all and throughout the year, with specific consideration for individual needs such as function, disability, sex, and age of the participants. We have discussed this issue in this book, but you will also find chapters focused on school and adolescent health, juvenile firesetting, chronic illness, internet, teenage pregnancy and substance abuse.

**Child Health and Human Development Yearbook 2014**

Joav Merrick, MD, MMEdSci, DMSc (Medical Director, Health Services, Ministry of Social Affairs and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)

In series: Pediatrics, Child and Adolescent Health

2015.

Hardcover: 978-1-63482-163-6. $310.00.


Children represent our future and healthy growth and development ought to be the prime concern of any society. President Calvin Coolidge (1872-1933), elected as the 29th Vice President in 1920 and succeeded to the Presidency upon the sudden death of Warren G. Harding in 1923. Elected in his own right in 1924 he became the 30th...
President of the United States until 1929. He was in favor of the civil rights of African Americans, Catholics and in 1924 Coolidge signed the Indian Citizenship Act, which granted full citizenship to all American Indians. Coolidge’s chronically ill mother died, perhaps from tuberculosis, when he was twelve years old and his sister died at the age of fifteen, when Coolidge was eighteen, which are maybe some of the reasons behind his proclamation for a national Child Health Day in 1926 (in 2014 it is child health day on october 6th, first Monday of october). Today about one in six children between the age 2-19 years is overweight with risk for serious health consequences like asthma, diabetes and heart disease and child health day is therefore also relevant today. In this Yearbook you will find interesting chapters on a broad spectrum relevant for health and human development in our time.

**Chinese Herbs and Herbal Medicine: Essential Components, Clinical Applications and Health Benefits**  
*Brian L. Duke*  
In series:  *Public Health in the 21st Century*  
Hardcover: 978-1-63482-085-1. $190.00.  
Radix Bupleuri (Chai Hu) is one of the most commonly used herbs in the Chinese medicine clinical practice. In Chinese medicine, it is believed that Radix Bupleuri is acrid, cool and bitter and enters liver and gallbladder meridians. This book discusses the use of Chinese herbs, such as Chai Hu, and other different herbal medicines for diseases and illnesses such as atopic dermatitis, and for cutaneous wound healing. It discusses the essential components, clinical applications and health benefits of herbal medicine.

**Ebola and Epidemics: Ethical Dimensions to Public Health Emergencies**  
*Russell Collins*  
In series:  *Public Health in the 21st Century*  
Hardcover: 978-1-63483-037-9. $120.00.  
e-book: 978-1-63483-038-6. $120.00.  
Briefly during fall 2014, many U.S. citizens feared that the United States would join affected countries in western Africa in confronting a serious domestic outbreak of the deadly Ebola virus disease. In response to the arrival of Ebola on U.S. shores, federal and state public health attention and intervention increased. Some responses in the United States—such as calls for travel bans, quarantine of health care workers, and stigmatization of and discrimination against western Africans (or anyone thought to be associated with Ebola)—merit scrutiny, both in relation to this ongoing epidemic and to prepare for future public health emergencies. This book provides an overview of the ethical challenges related to the Ebola epidemic and endorses ongoing participation of the United States in the global response for both ethical and prudential reasons. It examines basics of the Ebola virus; discusses prevention of the spread of Ebola; and provides insight on the legal issues involved.

**Lead Exposure and Poisoning: Clinical Symptoms, Medical Management and Preventive Strategies**  
*Leonard Horton*  
In series:  *Public Health in the 21st Century*  
Hardcover: 978-1-63482-699-0. $110.00.  
Lead is a heavy metal used since ancient times and is still employed for several industrial purposes due to its suitable physical and chemical properties. It is non-biodegradable and is very persistent in the environment. Human exposure can lead, however, to a wide range of biological effects. Lead (Pb) exposure is known to induce a wide range of physiological and biochemical dysfunctions in humans and animals. This book reviews works collected in international literature dealing with the effects of lead; the environmental contamination of lead and its associated public health risks; the influence of lead at different doses on the structure of intestinal microbial community in vivo and its relationships to intestinal epithelium in vitro; and finally, the effects of fractions of the edible halophyte, Sarcocornia perennis on human kidney cells after Pb intoxication.

**Neonatal Abstinence Syndrome: Federal Prevention Role and Related Data**  
*Russell Bailey*  
In series:  *Public Health in the 21st Century*  
2015. 103 pp.  
Softcover: 978-1-63483-074-4. $62.00.  
The prenatal use of opioids, including heroin and opioids prescribed for pain management, can produce a withdrawal condition in newborns known as Neonatal abstinence syndrome (NAS). These and other substances pass through the placenta that connects the baby to its mother in the womb. The baby becomes addicted along with the mother. A recent study found that cases of NAS have tripled over the last decade and that treatment costs for newborns with NAS—most of which are paid by Medicaid—are more than five times the cost of treating other newborns at birth. This book examines federally funded research, federal programs, and other federal agency efforts related to prenatal opioid use or NAS; gaps identified by federal agency officials and experts in efforts to address prenatal opioid use or NAS; and how federal efforts to address prenatal opioid use or NAS are planned and coordinated. It also discusses symptoms and characteristics of NAS.

**Pain Management Yearbook 2014**  
*Joav Merrick (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)*  
In series:  *Public Health in the 21st Century*  
In this yearbook for 2014 we present you with the latest research on pain management. We start out with the ethical mind of “Dr Feelgood”, discuss social isolation among adults with chronic pain and you will also find several chapters related to mindfulness and pain. Oncologic pain is discussed and dated in many chapters and it is our hope that you as the reader will find the information of interest and useful.

**Pathogens in Poultry Products: USDA Protection Efforts**  
*Rosemarie Chambers*  
In series:  *Public Health in the 21st Century*  
2015. 102 pp.  
USDA is responsible for ensuring the safety of poultry products. The Centers for Disease Control and Prevention (CDC) report the U.S. food supply is one of the safest in the world, yet estimate that Salmonella and Campylobacter contamination in food causes more than 2 million human illnesses per year. Poultry products contaminated with pathogens cause more deaths than any other commodity. This book describes actions USDA has taken since 2006 to reduce Salmonella and Campylobacter contamination in poultry products; evaluates USDA’s efforts to assess the effects of these actions on the incidence
of human illnesses from Salmonella and Campylobacter in poultry products; and determines challenges USDA faces in reducing these pathogens in poultry products.

Public Health Yearbook 2014
Joav Merrick (Medical Director, 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 (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
Hardcover: 978-1-63482-165-0. $310.00.

In this Public Health Yearbook 2014 we will touch upon several public health topics like Bedouin health, obesity in the Caribbean region, health in rural India, smoking in Atlanta, quality of life in persons with intellectual disability and trying to understand substance abuse. We all long for a life of purpose and fulfillment and striving for high quality of life for us and those we care for is a powerful motivator. Many busy people dream of lazing by a pool fanned by a soft summer breeze, but this does not last, because a short time of rest and replenishment is quickly replaced by boredom and a sense of purposelessness. Quality of life is much deeper than material comfort. Sadly in our world today, many people live lives lacking in meaning and value: the unemployed, the underemployed, those with disabilities who would like to contribute to society but are deprived the opportunity. Their quality of life is not what it could be. In this book you will find many chapters that discuss the many aspects of quality of life in persons with intellectual disability within a social context and we also discuss how we need to prevent drug addiction in our youth and establish prevention programs to decrease the devastating toll it has and will take on billions of human beings in this century and beyond. We must be concerned about drug addiction and its effect on our youth including their alarming use of nonmedical analgesics. It is important to study youth in their communities and thus support more community-based research protocols.

The Different Faces of Being Overweight: Risk Factors for the Evolution towards Obesity
Emilia Manzato (Psychiatrist, Former Chief of Eating Disorders Unit, Public University-Hospital “Arcispedale S. Anna” Ferrara, Italy, University of Ferrara, Italy, National Council Member of Italian Society for the Study of Eating Disorder (SISDCA))
In series: Public Health in the 21st Century
Hardcover: 978-1-63483-099-7. $190.00.

Obesity is considered a serious and complex condition. All obese people have previously been overweight and its conditions represent an intriguing area of research both from a clinical and speculative point of view. This book is aimed at raising awareness on individuals who are overweight, a crucial point in order to prevent obesity progression and it is addressed to therapists who are willing to better understand the condition.

RENAL AND UROLOGIC DISORDERS
Essentials of Chronic Kidney Disease
Stephen Z. Fadem (Kidney Associates, PLLC, St. Lukes Medical Towers, Houston, TX, USA)
In series: Renal, Metabolic and Urologic Disorders

This book is designed to enable clinicians faced with a patient who has a kidney problem, to develop an organized and structured approach that is based on either evidence or expert opinion, well substantiated by literature, and in sync with present knowledge and concepts. It should therefore be valuable to the reader, whether involved in physician education or in clinical practice, or whether a medical student, house officer or seasoned clinician. It can serve as a resource to the internist or primary care physician deciding upon when to refer a patient to the nephrologist. The health plan director desiring to set up a program to transition patients between CKD stages or to develop a disease management program should find this book highly useful. This book offers a journey through patient care that starts with the definition, classification, staging and measurement of kidney function, covering principles of diagnostic imaging as well as the clinical approach. This book acquaints the reader with approaches to the complications that challenge the management of CKD – cardiovascular disease, anemia, metabolic acidosis, hypoalbuminemia and CKD-MBD. It will assist clinicians considering treatment options and modality selection.

Nephrolithiasis: Risk Factors, Treatment and Prevention
Melody Shneider
In series: Renal and Urologic Disorders
Hardcover: 978-1-63482-134-6. $160.00.

Nephrolithiasis is the third most common diagnosis involving the urinary tract, exceeded only by urinary tract infections and prostate conditions. Uric acid nephrolithiasis accounts for 5–10 % of all kidney stones in the general population in the United States (US) and is noted to be increasing in other parts of the world like Japan, previously known to have a low incidence of this condition. This increase is attributable, at least in part, to westernized eating habits. Other factors which influence development of kidney stones include age, sex and ethnicity. This book discusses in further details, the risk factors, prevention of nephrolithiasis.

Nephrotic Syndrome: Etiology, Pathogenesis and Pathology
Muhammed Mubarak (Sindh Institute of Urology and Transplantation, Karachi, Pakistan)
In series: Nephrology Research and Clinical Developments
Hardcover: 978-1-63482-154-4. $190.00.

This multi-author book is an important contribution to the fields of nephrology and nephropathology, which is primarily focused on the discussion of the pathogenesis and pathology of nephrotic syndrome. A few primers are available on this subject, but those can be considered as reference works and not suitable for daily or bedside use. The present book has been written with a view to fill this void, at least partially. It is written by many practicing nephrologists and nephropathologists from different parts of the world, in particular, from developing countries. The book not only discusses the etiology and pathology of the disorder but also addresses the new developments and
updates on the pathogenesis of nephrotic syndrome, which is the most common clinical manifestation of medical renal disorders in nephrological practice throughout the world. The book is handy and can be used in the office, classroom and by the patient bedside. It will prove very useful for the beginners in the field of nephrology and nephropathology. The book has been written in easy English, and is very well illustrated to enable easy comprehension and assimilation of the knowledge and information contained in it.

**RESPIRATORY**

**Asphyxia: Risk Factors, Prevalence and Neurological Impacts**

Angelina R. Santos

In series: *Pregnancy and Infants: Medical, Psychological and Social Issues*


Hardcover: 978-1-63482-225-1, $110.00.

Despite the continuous effort from the scientific community and the advancements in neonatal intensive care, hypoxic-ischaemic brain injury of term and near-term infants remains a significant problem throughout the world. After asphyxia, infants may suffer from long-term neurological sequelae, including death, cerebral palsy, learning difficulties, epilepsy and other significant cognitive, developmental and behavioral problems in 40% of survivors. This book discusses the risk factors, prevalence and neurological impacts of asphyxia.

**SUBSTANCE ABUSE**

**Integrated Dynamic Recovery for People with Substance Abuse and Drug Addiction: Interpretation and Intervention**

Kam-shing Yip (Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hong Kong, China)

In series: *Substance Abuse Assessment, Interventions and Treatment*


In this book, based on profound clinical experiences in supervising and educating practitioners to work with clients with substance abuse and mental illness, the writer suggests an integrated dynamic recovery model in helping clients with substance abuse. In doing so, a multi-dimensional model in the re-anchoring of various humanistic dimensions for persons with substance abuse and mental problems is articulated. Instead of focusing merely on detoxification of persons with substance abuse, the individual’s meaning of life, self-system, emotion, body and stress and coping are re-engaged. By means of case vignettes and extracts of clients’ self-narration, the whole book provides a humanistic, practical and reflective, working guideline for related professionals, family members and other parties to understand and implement effective, multi-dimensional interventions for people with drug addiction and substance abuse.

**Shortages of Drugs Containing Controlled Substances: Issues, Effects, and Mitigation Efforts**

Denise Jones

In series: *Substance Abuse Assessment, Interventions and Treatment*


Hardcover: 978-1-63483-316-5, $120.00.

In the last decade, shortages of prescription drugs containing controlled substances, such as narcotics and stimulants, have increased nationwide, preventing providers and patients from accessing essential medications for treatment. Controlled substances are regulated by DEA because of the potential for abuse and addiction. To prevent diversion of controlled substances, DEA sets quotas that limit the amount of certain substances that are available in the United States. This book examines the trends in such shortages; the effect on patients and providers; DEA’s administration of the quota process; coordination between DEA and FDA to prevent and mitigate shortages; how DEA manages diversion investigation efforts; and how DEA ensures policies and procedures are followed for investigations and the extent to which it determines the results of its efforts.

**SURGERY**

**200 Practice Questions in Cardiothoracic Surgery**

Shahzad G. Raja (Consultant Cardiac Surgeon, Harefield Hospital, London, United Kingdom)

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

2015. 188 pp.

Hardcover: 978-1-63482-218-3, $110.00.

200 Practice Questions in Cardiothoracic Surgery is a revision and learning aid that contains the 200 single best question and answer topics in Cardiothoracic Surgery. Questions cover topics that are particularly important from a specialty examination perspective. Detailed answers are included to further enhance knowledge and understanding. Authored by an experienced clinician, lecturer and author Dr. Shahzad G. Raja, this book understands which questions candidates find most challenging and offers a lifeline to those in particular who must revisit the subject for their specialty exams in Cardiothoracic Surgery. It responds directly to the increasing use of SBAs as an examination style in postgraduate examinations. Questions integrate relevant basic science and pathology with clinical Cardiothoracic Surgery. Realistic, case-based questions cover important pathologies. Multi-dimensional questions encourage problem solving, helping candidates connect together multiple pieces of information as clinicians do with real patients. The book provides detailed explanations for each correct answer. Challenging questions enhance preparation for harder exam questions. This book should be part of the armoury of every specialty exam candidate in Cardiothoracic Surgery as well as a resource for residents in Cardiothoracic Surgery.

**Advances in Surgical Procedures**

Miriam Figueroa

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


Hardcover: 978-1-63482-461-3, $110.00.

Many surgical procedures are performed by ambulatory surgery and account for around 60-70% of all surgical procedures. This book...
presents new research in ambulatory surgery, and discusses advances in other surgical procedures. The topics discussed include ambulatory surgery as well as breast reconstruction, thyroid goitre surgery, and midface lift surgery.

Bariatric Surgery: Prevalence, Complications and Impact on Quality of Life
Mandy Chambers
In series: Surgery - Procedures, Complications, and Results
Hardcover: 978-1-63463-697-1. $160.00.
e-book: 978-1-63463-719-0. $160.00.
In response to rapidly increasing rates of obesity, bariatric weight loss surgeries have increased worldwide, reaching approximately 341,000 procedures in 2011. Bariatric surgery is a major medical intervention with the primary goals of chronically reducing excess weight loss, decreasing incidence and severity of obesity related co-morbidities, and overall improvement in quality of life. Despite widespread evidence of bariatric surgery effectiveness on excess weight loss and resolution of co-morbidities, the effects of weight loss surgery on overall cardiorespiratory fitness and physical activity levels (two critical components of overall health) have yet to be defined. This book discusses the prevalence of bariatric surgery, as well as the complications and its impact on quality of life.

Combined Stimulating Methods of Reconstructive Surgery in Pediatric Orthopedics
Dmitry Popkov (Federal Russian State-Financed Ilizarov Scientific Center for Restorative Traumatology and Orthopaedics Kurgan, Russia)
In series: Surgery - Procedures, Complications, and Results
Hardcover: 978-1-63483-028-7. $110.00.
This book is concerned with a trend of reconstructive surgical orthopedics using reparative potential of the organism. It presents a detailed description of combined surgical treatment methods of orthopedic pathologies in children as well as experimental substantiation. The first part of the monograph presents experimental studies concerning the combination of external fixation (Ilizarov method) and flexible intramedullary nailing (inert and bioactive) in limb lengthening. A separate chapter deals with a study of peculiarities in the influence of intramedullary transphyseal nailing on the longitudinal growth in tibia. In the clinical part of the monograph, a detailed description of combined surgical treatments (external fixation and flexible intramedullary nailing) in children of length discrepancy and deformities of limbs is presented. One can find results and peculiarities of management of deformities and shortenings in various etiologies, including congenital malformation, osteogenesis imperfection, and orthopedic complications in calcium and phosphor metabolic imbalance. This catalog also contains a review of conventional bioactive implants used in orthopedic practice. Also, new data of flexible intramedullary nailing application with bioactive coating in different adolescent orthopedic pathologies is presented. Variants and advantages of combined techniques using external and internal fixation in spine surgery are depicted. According to nosological groups, indications and methods of correction are defined. Along with a detailed description of new methods of combined surgical treatment, vast materials illustrating short and long term results are demonstrated.

Computer-Assisted Surgery: New Developments, Applications and Potential Hazards
Xiaojun Chen (Institute of Biomedical Manufacturing and Life Quality Engineering, School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, China)
In series: Surgery - Procedures, Complications, and Results
Hardcover: 978-1-63463-811-1. $95.00.
Over the past decades, the field of computer-aided surgery has experienced tremendous developments due to the rapid growth of computing power and the improvements in imaging modalities. Based on the guidance of preoperative planning with CT, magnetic resonance imaging (MRI), or other volumetric image data associated with the patient, surgical navigation is being widely used in various human anatomies (eye, ear, nose, pelvis, etc.) for minimizing the risks and improving the precision of the surgeries. Furthermore, robotic systems enable surgeons to perform advanced procedures with greater visualization and dexterity than traditional technology. In this book, the authors present current developments, applications and potential hazards in the domain of computer-aided surgery and robotic surgery. Topics in this compilation include surgical navigation system based on 3D Slicer using augmented reality (AR) technology; computer-assisted minimally invasive surgery; a navigation system in bimaxillary orthognathic surgery; spinal surgical navigation system; scrub nurse robot systems for laparoscopic surgery; ultrasound imaging for robotic orthopedic surgery, etc.

Current Immunosuppressive Therapy in Organ Transplantation
Huifang Chen and Shiguang Qian (Professor of Surgery, Laboratory of Experimental Surgery Research Center, University of Montreal, Quebec, Canada)
In series: Organ Transplantation Research Horizons
Organ transplantation has revolutionized the treatment for end-stage organ failure. Immunosuppression is still a major approach currently used in the prevention and treatment of allograft rejection. Both editors Dr. Chen and Dr. Qian have been contributing to preclinical evaluation of immunosuppressants for more than 25 years in North America. Experts from the United States, Canada, the United Kingdom, China, Japan, Germany, Sweden, Hungary and Brazil contributed 23 chapters to this book, providing details of immunological basis in transplantation. They also describe six classes of immunosuppressive agents (calcineurin inhibitors, mTOR Inhibitors, JAK-STAT inhibitors, antiproliferative agents, costimulation blockers and corticosteroids), as well as ischaemia/reperfusion injury treated agents. Additionally, the new development of cell therapy in the induction of transplant tolerance is introduced. This book provides many important references for the research direction of novel immunosuppressants. Readers that will find this book useful include transplant physicians, surgeons, nurses, immunologists, pharmacologists, pharmacists, medical students, residents and trainees in transplantation.

Evidence-Based Cosmetic Surgery
Fulvio Urso-Baiarda (Consultant Plastic Surgeon, Berkshire, UK)
In series: Surgery - Procedures, Complications, and Results
Cosmetic surgery procedures are incredibly popular and a plethora of practitioners offer a tremendous diversity of procedures. However, much practice has been based on historical preference, tradition and non-evidence based decision-making. This book demystifies the decision-making process for common cosmetic surgical procedures by examining their evidence basis. Each chapter deals with a different subject of cosmetic surgery – facelift, breast augmentation, liposuction and so on – and investigates the formal evidence that exists for each. Should a surgeon be using drains after facelifts? What is the best anatomical plane for placing a breast implant? Which hand rejuvenation procedures work, and which do not? These questions, and many more, are addressed in an objective manner based on peer-reviewed evidence in the medical literature. Recognising that best evidence will change constantly, the book also introduces the hashtag #ebcs – to enable easier debate of the subject on social media. This is a subject of fast-growing international interest at the moment. Professional societies and politicians in the United Kingdom are calling for increased scrutiny and regulation of the cosmetic surgery industry, particularly in the wake of the most recent breast implant scandal. Incredibly there currently exists no resource collating the best available evidence for cosmetic surgery procedures, as already exists for other surgical disciplines and for non-cosmetic plastic surgery. This book is aimed at surgeons with an interest in cosmetic surgery - including Plastic Surgeons, Maxillofacial Surgeons, Ear Nose and Throat Surgeons, Breast Surgeons, General Surgeons, Dermatologists and General Practitioners – as well as affiliated professionals such as nurses and therapists. It would also be of interest to medical students, prospective patients and those interested in a succinct summary of existing research, such as journalists.

Minimally Invasive Surgery for Pituitary Adenoma
Wongsrisuwan Methee (Neurosurgery, LL.B. Rajavithi Hospital, Rhajathevi Bangkok, Thailand)

In series: Surgery - Procedures, Complications, and Results
2015.
Softcover: 978-1-63482-766-9. $82.00.

The pituitary gland is a very small sized gland which plays an important role in regulating human well-being by controlling many activities of other hormone-secreting glands. It embeds in a midline, bony hollow of the cranial base and is surrounded by vital structures (e.g. optic apparatus, cavernous sinuses, internal carotid arteries, and cranial nerves that control extraocular muscles). Adenoma of this gland is a challenging problem for neurosurgeons. Some are best managed with medication alone, but some are more responsive to surgery. Numerous refinements in surgical approaches to the pituitary gland have been proposed for decades. Advancements in modern surgical equipment and state-of-the-art technology of highly precise tools have given neurosurgeons a new, minimally invasive approach. Since the era of image-guided surgery, neurosurgeons have been offered many chances in innovating high precision surgical techniques via a very small incision or no incision at all. Patients received many benefits from the so-called minimally invasive surgery, particularly less side effects with greater patient comfort. Better outcome, little or no scarring, and lower complication rates of pituitary adenoma surgery resulted from little tissue manipulation by cutting-edge technology. However, the revolutionized pituitary surgery is still going ahead. Starting with the microscopic era, followed by image-guidance and then by endoscopic maneuver, all of these give neurosurgeons a streamlined, multidisciplinary approach in treatment of the pituitary adenoma. Another groundbreaking development in minimally invasive treatment for pituitary adenoma is robotic surgery. Robotic surgery of pituitary adenoma offers a wide range of treatment: passive, semiactive, active robots, and remote manipulators. Some of them are non-invasive alternatives to surgery such as Gamma Knife®, LINAC, Cyberknife®; they provide pain-free, non-surgical alternative treatment for surgically complex and invasive adenomas or inoperable patients. The era of robotic surgery is going to innovate pituitary glands surgery; as a technique, it is to become the gold standard treatment. Future progress will turn minimally invasive surgery into non-invasive treatment of pituitary adenoma sooner or later. This book examines all these issues and provides a prediction of what will happen in the future in the field of minimally invasive surgery, particularly for pituitary adenoma.

The Role of Imaging Technology in Current Surgical Practice
Georgios Tsoulfas (Assistant Professor of Surgery, Aristotle University of Thessaloniki, Greece)

In series: Surgery - Procedures, Complications, and Results
2015.
Hardcover: 978-1-63483-490-2. $190.00.

This book represents an effort to document the experience of a carefully-chosen group of international surgeons, regarding the use of imaging technology in their everyday practice. The aim of this book is to help medical students and surgeons at all levels of training and practice to understand the basics of the more common imaging techniques (CT, MRI, MRCP, US, XR, radionuclide scan, etc.), including their advantages and disadvantages and their optimal use and limitations. Following that, the application of these imaging modalities, including the most current developments, in the different fields and subspecialties of surgical practice (including, but not limited to, surgical oncology, neurosurgery, endocrine surgery breast surgery, hepatobiliary surgery, pancreatic surgery, transplantation, urology etc.) is presented in detail. What is important about this book is that it is written by an international group of surgeons who are experts in their respective fields and who offer us here their wisdom and experience, regarding what the communication between the surgeon and the radiologist should be, in order to provide these complex patients with the best possible care. Apart from the radiological and imaging tools commonly used in current practices, future prospects and challenges regarding how imaging technology can increase surgical efficiency in the future are explored. The overall goal of this book is to help surgeons in today’s technology-driven environment have a proper understanding of the use and limitations of modern imaging techniques.

The Surgery for Kidney Transplantation
Bulang He and Xiwu Han (The University of Western Australia, Sir Charles Gairdner Hospital, Nedlands, Perth, Australia, and Beijing Chaoyang Hospital, Capital Medical University, Beijing, China)

In series: Surgery - Procedures, Complications, and Results
Hardcover: 978-1-63463-623-0. $160.00.

This book depicts the basic aspects of all surgeries for kidney transplantation in both adults and children, including procurement of kidney, preparation of the kidney graft, vessel reconstruction, kidney implantation in various conditions and the diagnosis and management of surgical complications post transplant. This book also describes the surgery for kidney transplant with abnormal lower urinary tract; the surgery for third or subsequent kidney transplant and the surgery for transplant nephrectomy by the extra capsule or intra capsule technique. Furthermore, it has been emphasized that early recognition of vascular complications is critical in order to avoid the kidney graft loss. This book provides numerous images to illustrate the abnormal findings.
during the investigation of kidney graft, in order to facilitate prompt diagnosis and management of post transplant complications. Moreover, the different techniques in management of urological complications are discussed such as Boari flap urinary tract reconstruction. This book also introduces advanced laparoscopic surgery for kidney implantation. The authors share their experiences in developing the large animal training model and early clinical experience. Importantly, editors invited Professor Modi to contribute to the chapters on laparoscopic kidney transplant and robotic kidney transplant. Professor Modi is a well-known pioneer in advanced laparoscopic kidney transplant and robotic kidney transplant. Last but not least, the assessment of live kidney donor has been thoroughly discussed based on the review of the guidelines from a few societies. The surgery for donor nephrectomy by either transperitoneal or retroperitoneal approach has been well illustrated in details with pictures. This book is written based on the authors’ 20 years experience in kidney transplantation. It is hoped to be helpful for transplant fellows and junior transplant surgeons.

Third Generation Percutaneous Vertebral Augmentation Procedures: Update and Future Perspectives

Vincenzo Salini and Daniele Vanni (University G. D’Annunzio, Chieti, Italy)
In series: Surgery - Procedures, Complications, and Results
2015. 139 pp.
Hardcover: 978-1-63482-655-6. $160.00.

Vertebroplasty and kyphoplasty represented and represent two mainstays of minimally invasive spine surgery. Inevitably, these procedures left some unresolved issues that must be solved. This monograph is born from a concrete and shared necessity: to clarify indications and limits, to assess advantages and disadvantages and to identify new perspectives relating to use of third generation devices for percutaneous vertebral augmentation. Actually, the concept of minimally invasive surgery and tissue sparing surgery are revolutionizing always the surgical approach to many diseases, especially for spine surgery: therefore it is important to know the “when and how”. This text does not want to be anything more than a “short essay”, and it is aimed especially to young people, residents and specialists, but also to all those who are desirous to find and to read “something” that can be a basis for reflection, even in order to improve their surgical technique. In line with United States and Northern Europe, we are sure that the differences between Orthopaedic Surgeon and Neurosurgeon should be complementary, in order to prompt a curious comparison for creating partnerships and not barriers. In fact, this monograph is the result of the work among Neurosurgeons and Orthopaedic Surgeons. This work is born from the collaboration of many surgeons: the “elder” ones, who have offered all their knowledge and experience and the “young” ones, who are eager to learn, know and especially to share between them. In this text, spine functional anatomy and biomechanics brief mentions will be done, in order to understand well the etiology and the evolution of spinal pathology, both traumatic, metabolic and tumoral; the different treatment options will be taken into account, the open and minimally invasive techniques, the percutaneous approaches as well as third generation devices for percutaneous vertebral augmentation. The goal is not to compare the different devices in order to identify a winner. The real goal is to understand what pathological condition can bring out the best properties of a specific device, in order to establish which device is the most appropriate in a specific case. Therefore, through the experiences of Orthopaedic Surgeons, Neurosurgeons and Neuroradiologists, we will explore and identify the correct procedures, but especially the potential “red flags”, in this field of research.

Virology

Avian Influenza and SARS: Epidemiology, Global Patterns and Clinical Management
Hailey Benson
In series: Virology Research Progress
2015. 130 pp.
Hardcover: 978-1-63463-793-0. $110.00.
e-book: 978-1-63463-821-0. $110.00.

Avian influenza (AI) is caused by Influenza A viruses, and are single stranded, segmented RNA viruses of the family Orthomyxoviridae. Influenza A viruses continue to pose a major threat to the poultry industry and to the public. Wild aquatic birds are considered the primary hosts of influenza A, in which the virus is enzootic. In these birds, influenza viruses usually replicate in the intestinal tract, cause no disease, and spread by fecal contamination of the water habitat. This book discusses the epidemiology, global patterns, and clinical management of Avian Influenza. It also examines the symptoms, treatment and clinical outcomes of Severe Acute Respiratory Syndrome (SARS), which is a highly contagious respiratory disease caused by a SARS coronavirus.

Hemorrhagic Fever: Epidemiology, Clinical Manifestations and Diagnosis
Shirley R. Edwards
In series: Virology Research Progress
Softcover: 978-1-63482-791-1. $82.00.
e-book: 978-1-63482-806-2. $82.00.

Viral hemorrhagic fevers (VHF) represent a collection of illnesses caused by several distinct viral families. While some types of hemorrhagic fever viruses can cause relatively mild illnesses, many of these viruses cause life-threatening diseases. The chapters of this book discuss the consequences of the Ebola outbreak in West Africa; the most frequency imported infection worldwide (malaria); the reservoirs of selected infectious diseases (often bats and fruit bats); the clinical symptoms of viral diseases and the most widely used diagnostic methods for the correct identification of the pathogen involved; and a discussion on Japanese encephalitis (JE) as an infectious disease caused by a virus transmitted by blood-sucking arthropods.

Women

Leiomyomas: Risk Factors, Clinical Manifestations and Treatment Options
Ayman Al-Hendy and Salama Salama (Division of Translational Research Department of Obstetrics and Gynecology, Medical College of Georgia, Georgia Regents University, GA, US)
In series: Obstetrics and Gynecology Advances
Hardcover: 978-1-63463-584-4. $170.00.

Edited by premier researchers in the field, this is a unique book that comprehensively covers the important topic of uterine leiomyomas from biology, health disparity challenges, impact on fertility, novel risk factors, imaging as well as innovative minimally-invasive to non-invasive treatment options with over eleven chapters by leading practitioners and medical investigators of this disease. Although all areas of uterine leiomyoma are reviewed and updated, with a focus on the medical treatment of this common condition, which offers promise to millions of patients with symptomatic uterine leiomyoma. This book
describes important facets of this disease such as the role of vitamin D deficiency as a novel risk factor and its higher incidence in women of color. Novel approaches for treatment using green tea extract or radiofrequency volumetric thermal ablation are also described in detail. This book is essential reading for gynecologists, family doctors, physician assistants, nurse practitioners, medical students, OB/GYN residents and fellows, reproductive biologists, as well as other health care providers who care for women with this common disease.

The 2015 Compendium for HELLP Syndrome: From Bench to Bedside

James N. Martin, Jr. (Professor of Obstetrics and Gynecology, Winfred L. Wiser Hospital for Women and Infants, The University of Mississippi Medical Center, Jackson, MS, USA)

In series: Obstetrics and Gynecology Advances


Practitioners of obstetrics, maternal-fetal medicine and consultants in other branches of medicine who help provide excellent care to pregnant patients with hypertensive complications of pregnancy will welcome this compendium about HELLP Syndrome. Drawing upon the expertise of 37 contributors from 15 institutions and four countries, this book summarizes the state of the science and practice for patients with HELLP syndrome. On a global basis, what we call HELLP syndrome accounts for hundreds to thousands of maternal deaths and is responsible for many more thousands of patients that suffer “near miss” mortality, which we more properly term “severe maternal morbidity”. Our understanding of this pregnancy scourge — the basic science or bench aspects — is still relatively inadequate to fully comprehend the pathogenesis and the pathophysiology of this condition as it relates to its close relative, the syndromic disorder of preeclampsia. Although a corticosteroid-based management scheme has shown great promise in practice and has a strong physiologic basis, there remains a need for a high quality, large-scale (1000+ patients) constructed, prospective placebo-controlled clinical trial involving a heterogeneous patient population to fully and objectively evaluate this approach to practice. The need and the urgency are great given the risk of HELLP to mothers and babies. What we do know is detailed extensively in the pages within. Contained within the compendium is a current summation of our knowledge about the following aspects of HELLP syndrome: •How do HELLP and preeclampsia share similarities or demonstrate differences •The latest on clinical and laboratory diagnoses of HELLP syndrome, including cutting edge research •Classes and categories of HELLP are clarified for full implementation into practice •Core concepts and components of recommended management •A critical look at the current controversy over corticosteroids as a core component of care for patients with HELLP syndrome and the reasons why the jury is still out •How HELLP impacts maternal morbidity and mortality •In-depth looks at each of the organ systems impacted by HELLP including the mother’s brain, heart/lungs, the liver and the kidney •Help with distinguishing HELLP from imitators •Review of the concepts of rescue with therapeutic plasma exchange when other disorders complicate and confuse patient presentation and care •Guidance with anesthesia issues of HELLP patient management and potential pitfalls •Perinatal and neonatal aspects of HELLP •Risk factors, epidemiology, and recurrence issues •The infrequently explored areas of HELLP impact on immediate and remote maternal physical and emotional health Welcome to this extensive and detailed compendium of helpful HELLP syndrome information for practitioners, researchers, patients and all those interested in pregnancy and conditions which threaten its successful outcome.
SCIENCE AND TECHNOLOGY
Agricultural Wastes: Characteristics, Types and Management
Camille N. Foster
In series: Waste and Waste Management
Agricultural wastes (AW) can be defined as the residues from the growing and processing of raw agricultural products such as fruits, vegetables, meat, poultry, dairy products, and crops. Agricultural wastes can be in the form of solid, liquid or slurries depending on the nature of agricultural activities. Furthermore, agricultural industry residues and wastes constitute a significant proportion of worldwide agricultural productivity. Although the quantity of wastes produced by the agricultural sector is significantly low compared to wastes generated by other industries, the pollution potential of agricultural wastes is high on a long-term basis. This book discusses the characteristics, types and management options for agricultural wastes.

Federal Crop Insurance: Background and Costs of Insuring Higher Production Risks
Audrey Pope
In series: Agriculture Issues and Policies
Softcover: 978-1-63483-366-0. $62.00.
The federal crop insurance program began in 1938 when Congress authorized the Federal Crop Insurance Corporation. The current program, which is administered by the U.S. Department of Agriculture’s Risk Management Agency (RMA), provides producers with risk management tools to address crop yield and/or revenue losses for about 130 crops. The federal farm safety net also includes the farm commodity support programs, which provide price and income support for a much narrower list of “covered and loan commodities” such as corn, wheat, rice, and peanuts. This book provides a primer on the federal crop insurance program and highlights changes to the program by the 2014 farm bill. It also examines the government’s cost of the crop insurance program; and the extent to which RMA’s premium rates, as implemented, cover expected losses.

Fulvic and Humic Acids: Chemical Composition, Soil Applications and Ecological Effects
Kristopher D. Barrett
In series: Agriculture Issues and Policies
Hardcover: 978-1-63482-413-2. $110.00.
This book is about humic and fulvic acids, two types of organic substances which are increasingly becoming popular in agriculture and organic farming. In this book, the authors study and reveal their research on humic substances and the different aspects related to their formation. Other chapters include recent research on GRSP (Glomalin Related Soil Protein) and its relation to different kinds of fluorescent substances, including fulvic acid-like and humic acid-like substances. The last two chapters of the book explore humic acids and their ability to interfere in molecular ecological studies as well as the various methods one could use to measure the humic acids’ concentration in soil-extracted nucleic acids. Finally, this book presents an in-depth look at the role of humic materials in the dispersion of radioactive contaminants in the environment, the latter of which are some of the most broadly circulated substances on the earth’s surface, occurring in soils, rivers, lakes and seas.

Travelling Back to Sustainable Agriculture in a Bioeconomic World: The Case of Roxbury Farm CSA
John M. Polimeni (Albany College of Pharmacy and Health Sciences, USA), Raluca-Ioana Iorgulescu (Institute for Economic Forecasting-NIER, Romanian Academy, ROMANIA and Resource Dimensions, USA) and Richard Shirey (Siena College, Loudonville, USA)
In series: Agriculture Issues and Policies
Hardcover: 978-1-63463-376-5. $125.00.
In an increasingly interconnected and bioeconomic world, agriculture is one of the vital and extremely complex links; on one hand, it provides food for the world while, on the other hand, it brings considerable environmental degradation. The negative by-products of agriculture have come to the forefront in recent years. As a result, agricultural production has undergone considerable scrutiny resulting in strong consumer movements for sustainable agriculture. However, many countries cannot worry about the environmental aspects when they do not produce enough food to be secure because farmers cannot compete with the artificially low prices of food due to the subsidies from developed countries. However, this trend is unlikely to continue as farm operations in developed countries must increase the amount of inputs, such as fertilizer, to maintain their levels of production. Furthermore, agricultural subsidies are likely to end due to the national debts of many countries. Therefore, it becomes more and more accepted that, for a sustainable agriculture, rural regions and developing countries will have to use local, traditional knowledge. This would support economic development and food security, especially since consumers are increasing demand for sustainably grown food.

Agriculture and Food Science
Lycopene: Food Sources, Potential Role in Human Health and Antioxidant Effects
Jacob R. Bailey
In series: Food Science and Technology
Carotenoids, naturally occurring pigments, are exclusively synthesized by plants and micro-organisms. Humans are not able to synthesize carotenoids and depend entirely on dietary intake of fruits, vegetables and nutritional supplements. Lycopene, a red coloured carotenoid phytounitvet, naturally produced in highest concentration in tomato and tomato-based products is a potent $1O2 quencher, and has been found to possess “antioxidant” and “antitumor” properties that mitigate the damaging effects of oxidative stress. This book discusses food sources, the potential role in human health of lycopene, and the antioxidant effects lycopene possesses.

Food Issues, Policies, and Safety Considerations
Volume 4
Cynthia M. Truman
In series: Food Issues, Policies, and Safety Considerations
Haywood: 978-1-63482-132-2. $120.00.
e-book: 978-1-63482-133-9. $120.00.
This book discusses several topics on food issues, policies, and safety. The topics include average food prices; genetically engineered salmon; food recalls and other FDA administrative enforcement actions; implementation of the FDA Food Safety Modernization Act; and FDA’s international food safety capacity-building plan.

ANIMAL SCIENCE

Advances in Animal Science and Zoology, Volume 7
Owen P. Jenkins
In series: Advances in Animal Science and Zoology Research
Hardcover: 978-1-63483-328-8. $190.00.
This book focuses on recent advances in animal science and zoology research. In the first chapter, animal science is introduced along with major hurdles related to animal agriculture and then proposes a solution for these grand challenges on a global scale. In the second chapter, the author focuses on canine leptospirosis, a zoonotic disease of worldwide distribution, which affects both humans and animals with humans being an accidental host. The third chapter assesses the outcomes of current research and future directions for improving post-thaw viability of stallion sperm (since the first success of mammalian cell cryopreservation, it has become a major method of cell preservation for both human and veterinary medicine). The fourth chapter focuses on the evaluation of all main hematological, biochemical, and coproparazoitologic changes, besides larval designation found within pastures of Dorper breed sheep and females through peripartum. In the fifth chapter, in the search for new food sources that contribute to the optimization of livestock production, the authors discuss the possibility of using waste from a marine plant commonly found on the Mediterranean coasts. The next two chapters focus on penguin physiology, behavior as well as the identification of viruses capable of infecting both free-living healthy penguins, and the pathogens that may be related to the release of rehabilitated penguins and the implication of these agents in the conservation of the species. The remaining chapters of this book review current knowledge on the intra and inter-species behavior of Turkey vultures; molecular mechanisms operating in the Xenopus osmoregulatory organs and the physiological role of AQPs in Xenopus; and the impact of extended drought on the reproductive cycle of an endangered tropical killifish in the Brazilian semiarid region. The last chapter is a commentary on the the use of field sampling techniques and computerised video tracking in the study of directional grasshopper movement, influenced by climatic stimuli such as temperature, light, wind direction and habitat factors.

Advances in Animal Science and Zoology, Volume 8
Owen P. Jenkins
In series: Advances in Animal Science and Zoology Research
2015.
Hardcover: 978-1-63483-552-7. $190.00.
This book presents a comprehensive review of recent advances in animal science and zoology research. Chapters included in this volume: Biomarkers of Thermal Adaptation: New Tools in Sustainable Livestock Production under Climate Change; studies of spatial ecology of mammals in which non-invasive methods were used (including mapping of scats, latrines, snow-tracking, scent stations, collecting feces and using remote cameras); the geographic distribution, general characteristics, social organization, communication, eating habits, behavior and illegal trade of Capuchin monkeys; data about helminths endoparasites of Brazilian bats as well as their hosts and infection sites; the obligate intracellular parasite that infects mononuclear leukocytes; key clinical, epidemiological and diagnostic methods for cryptosporidiosis in birds; a presentation of the main habitats where sand flies can be found in some of Brazil’s leishmaniasis-endemic regions; a discussion on the morphophysiology of tarantula spider hemolymph and bioactive molecules isolated from hemocytes and hemolymph; the results of studies on cryptosporidiosis in reptiles and their importance to veterinary medicine and public health; recent zooarchaeological data from several sites of the northern Maya area; the importance of water sources in the epidemiology of certain protozoans and the preservation of animal genetic resources, by obtaining insemination doses of semen free of reproductive and respiratory syndrome virus (PRRSV) from three genetically valuable lines of boars.

Animal Communication and Cognition: Principles, Evolution and Development
Tabitha Wagner
In series: Animal Science, Issues and Research
Hardcover: 978-1-63482-411-8. $110.00.
Visual signals that are designed for effective communication are complex. Over the years, researchers interested in the study of animal communication have employed various artificial stimuli during behavioral experiments to precisely control what the observers get to see or experience. These diverse techniques to stage animal interactions have offered an alternative to the traditional experimental methods relying on the use of live companions or demonstrators. This book begins with a discussion on computer-animated stimuli to investigate visual communication in lizards. It then discusses the pretend play in signing chimpanzees; the evolution of TRP channels as mediators of pheromone signaling; and the role of cuticular hydrocarbon-based chemical communication in prezygotic reproductive isolation.

Bats and Wind Energy: Literature Synthesis, Annotated Bibliography and Assessment
Methodology on Population Impact
Sean Willis
In series: Wildlife Protection, Destruction and Extinction
Hardcover: 978-1-63483-616-6. $145.00.
Since early on in the development of wind-energy production, concerns have arisen about the potential impacts of turbines to wildlife; these concerns have especially focused on the mortality of birds. Structural changes and improved turbine design have been instrumental in reducing mortality in birds. Despite the improvements to turbines that have resulted in reduced mortality of birds, there is clear evidence that bat mortality at wind turbines is of far greater conservation concern. Larger and taller turbines actually seem to be causing increased fatalities of bats. Numerous research opportunities exist that pertain to issues such as identifying the best and worst placement of sites for turbines; and mitigation strategies that would minimize impacts to wildlife (birds and bats). This book focuses on refereed journal publications and theses about bats and wind-energy development in North America.

Bee Health: Background, Issues, and the Role of Pesticides
Cristina Weaver
In series: Insects and Other Terrestrial Arthropods: Biology, Chemistry and Behavior
Chordates: Origin, Evolution and Affinity
Pranveer Singh (Department of Zoology, Indira Gandhi National Tribal University, Amarkantak)
In series: Animal Science, Issues and Research
2015. 311 pp.
Hardcover: 978-1-63463-907-1. $185.00.
e-book: 978-1-63463-933-0. $185.00.
This book is structured into eight chapters, starting from introductory chapters throwing light on basic evolutionary principles to different aspects of chordate evolution. This book is written to accommodate the needs of diverse readers that range from undergraduate and postgraduate students to research scholars. This book spans diverse but related disciplines that range from morphology, anatomy, taxonomy, physiology, evolution and diversity and has updates from the latest in chordate research.

Chordates: Comparative Account of Physiology
Pranveer Singh (Department of Zoology, Indira Gandhi National Tribal University (IGNTU), India)
In series: Animal Science, Issues and Research
2015. 244 pp.
Hardcover: 978-1-63463-457-1. $190.00.
The evolution to multicellular organisms determined the appearance of more sophisticated and specialized systems for the different physiologies like integumentary, respiration, digestion, excretion, circulatory, reproduction, skeletal and the nervous system. In the line of chordate evolution, advent of tetrapods have triggered the events leading to only partial dependence on water for physiological activities. The inconstant environment in which animals lives largely determine and guides the way animal physiology evolves. This directs the anatomical and morphological changes in the organism that translates into varied and diverse physiological process. This book describes the transition of life from aquatic to terrestrial habitat that brings about changes in feeding habit and subsequent anatomical and morphological changes in the digestive tract. Similar transition also guides modifications in urino-genital system due to demands of removing ammonia/urea or uric acid as excretory waste. The author of this book further explores the evolution of tetrapods as one major event in the evolutionary history of chordates in addition to adaptive radiation. This has transformed the locomotion from ‘Fins’ to ‘Feet’. Demands of terrestrial life also means metabolism and energy requirements has to be met for which circulatory system was modified to incorporate more chambers and double circulation for warm bloodedness and increased metabolism to meet the energy requirements of life on land.
Subsequently, as explored in the book, different organ systems underwent modification in organization to work together the best physiological adaptations to sustain life on earth.

Felines: Common Diseases, Clinical Outcomes and Developments in Veterinary Healthcare
Colleen Kevins
In series: Animal Science, Issues and Research
Cats, with a global population estimated at 600 million, are considered the most popular pets worldwide, and are adapted to all the environments and to different lifestyles. We can distinguish different types of cat populations, according to their living, which raise different concerns on respect to neutering or contraception. Feline Leukemia Virus (FeLV) was the first retrovirus isolated in domestic cats, and the infection is associated with a wide variety of clinical syndromes, including feline acquired immunodeficiency syndrome (AIDS or fAIDS). Inflammatory diseases of the oral cavity are common feline medical conditions and are associated with infectious agents such as Feline Immunodeficiency Virus (FIV), FeLV, herpesvirus (FHV-1) and calicivirus (FCV). The most common oral diseases in cats are gingivostomatitis, periodontal disease, tooth resorption and chronic periapical lesion by the canine tooth fracture. This book discusses the common diseases, clinical outcomes and developments in the veterinary healthcare of felines.

Forest Insect Pests: Literature Review of Nonmarket Economic Impacts
Lawrence Medina
In series: Insects and Other Terrestrial Arthropods: Biology, Chemistry and Behavior
Hardcover: 978-1-63462-392-0. $120.00.
e-book: 978-1-63462-393-7. $120.00.
Forests possess many components and processes that provide an array of ecosystem goods and services: timber, energy and water savings, pollution reduction, livestock forage, habitat for plants and animals, recreation opportunities, aesthetic landscapes, and biodiversity that enhance people’s quality of life. Forest resources also support local and regional economies through jobs and income generated from forestry, agriculture, tourism, and locational decisions of businesses, retirees, and others. The capability of a forest to provide these and many other ecosystem services and to maintain the quality of those ecosystem services depends on its health. A healthy forest is an essential component of a healthy ecosystem—a natural system that is capable of self-renewal, resilient in its response to disturbances (such as pest, fire, and other non-human and human-caused disturbances), and able to sustain the integrity of the natural and cultural benefits derived from it. This book updates the literature review and synthesis of economic valuation studies on the impacts of forest insect pests by Rosenberger and Smith. This book also discusses the concept of ecosystem services; identifies key elements of each study; examines areas of future research; and includes appendices that further explain nonmarket valuation methods, a narrative of each study, and tables that summarize each study.

Marsupials and Monotremes: Nature’s Enigmatic Mammals
Athol Klieve, Lindsay Hogan, Stephen Johnston, and Peter Murray (The University of Queensland, Gatton, Queensland, Australia)
In series: Animal Science, Issues and Research
2015. 443 pp.
Hardcover: 978-1-63482-973-1. $230.00.
Marsupials and monotremes are the dominant mammalian fauna in Australia, Papua New Guinea (PNG) and parts of South America.
Monotremes are unique; they possess a range of reptilian and mammalian characteristics. Marsupials are highly diverse and occupy a wide range of ecologically diverse niches and habitats. They have distinct physiologies and their ability to control foetal development and nurture extremely immature young is providing beneficial insights into developmental physiology and human medicine. Insights into marsupial herbivory are benefitting agriculture and climate science. Studies on these mammals that have or will benefit mankind in medicine, agriculture and environmental science have been highlighted. This book covers current knowledge of all aspects of the basic biology and ecology of marsupials and monotremes including evolution and biogeography, genomics, musculoskeletal anatomy, thermal regulation, reproduction, nutrition and feeding strategies, behaviour and social interactions, health and disease, current conservation status, exploitation and utilisation and finally addresses this question: “Are monotremes and marsupials inferior?” The principal audience for this book will be undergraduate students at the tertiary level. Within these chapters, standalone text boxes have been incorporated with examples of the most up-to-date research undertaken to make the book a resource to research students and scientists. Many text boxes highlight the enigmatic nature of marsupials and monotremes and where knowledge of their biology could be of value to the wider community (medicine, agriculture and environment). This compilation emphasizes the utility of the information being generated from research with these mammals to the wider scientific community.

Seabirds and Songbirds: Habitat Preferences, Conservation and Migratory Behavior
Garrett Mahala
In series: Birds - Evolution, Behavior and Ecology
Hardcover: 978-1-63463-496-0. $190.00.
e-book: 978-1-63463-527-1. $190.00.
Humans have altered and created entirely new environments to which animals have either adapted or been extirpated. Urban environments are one of the most extreme examples of how humans have changed previous habitats. Urban environments present massive challenges for birds living in these spaces and the impacts can be seen on all aspects of their behavior including how they communicate with one another. This book discusses how seabirds and songbirds have adapted for life in urban areas, how it has impacted their migratory behavior, and also examines the ecology and conservation of these two species.

BIOCHEMISTRY

Alkaloids: Biosynthesis, Biological Roles and Health Benefits
Eduardo Sobarzo-Sánchez (Laboratory of Pharmaceutical Chemistry, Faculty of Pharmacy University of Santiago de Compostela, Spain)
In series: Biochemistry Research Trends
Hardcover: 978-1-63482-074-5. $170.00.
This book discusses a group of natural compounds that is referred to in many bibliographic references for its multiple medical and therapeutic applications, which have been carried out by civilizations in the past and continue to be used in the present. Thus, the alkaloids have been isolated from marine and terrestrial sources and human beings have had the aptitude to determine the chemical structure of many derivatives of simple and big complexity as well as observing the biological effects of every compound in the living organism. Different natural sources as well as the synthesis of many alkaloids of big therapeutic activity have been the basis for the hundreds of drugs that are applied successfully in the scope of the health and combating diverse diseases. Alkaloids’ low cytotoxicity in many cases and versatility in transforming into stable salt have generated diverse drugs of easy administration in the organism without the side effects associated with the ingestion of organic and inorganic salt of difficult tolerance. In this sense, this contribution covers several chapters which include: mechanisms and strategies against cancer, wherein certain types of alkaloid take control of important and selective form; the use of bolarine as the alkaloid of current reference in the traditional medicine and used actively as a natural antioxidant; alkaloids from vegetable origin as coming from the Amaryllidaceae; curious brominated alkaloids from marine sources between several outstanding examples; alkaloids derived from the Erythrina including the synthesis and pharmacological applications; the technological approaches of some derivatives originated from Tropane; an interesting contribution of the application of Trabectedin as alkaloid of clinical use in the treatment of ovarian cancer; the mention of a small group of alkaloids called oxiisoparines as the big medical tool in the treatment of mental disorders such as depression; and finally a complete review on the Daphniphyllum alkaloids.

Apigenin and Naringenin: Natural Sources, Pharmacology and Role in Cancer Prevention
Nilus M. Stacks
In series: Biochemistry Research Trends
Hardcover: 978-1-63463-987-3. $190.00.
Apigenin is one of the most bioactive naturally occurring flavonoids, found in fruits, plant-derived beverages, vegetables, wheat sprouts, and some seasonings. It has been found to possess anti-oxidant, anti-inflammatory, and anti-cancer properties. Naringenin is one of the most studied flavonoids abundant in citrus plants. Naringenin and their derivatives are known to exhibit strong anti-oxidant potential along with plenty of protective effects for the improvement of human health. This book discusses the natural sources, pharmacology and role in cancer prevention of the flavonoids, apigenin and naringenin.

Biochemistry and Molecular Biology: The Complexity of Human Traits and Diseases
Mary Miu Yee Wave, Ph.D. (Professor, School of Biomedical Sciences, President, Hong Kong Society of Biochemistry and Molecular Biology, Founding Director, Croucher Laboratory for Human Genomics, The Chinese University of Hong Kong, Hong Kong)
In series: Biochemistry Research Trends
2015. 159 pp.
Hardcover: 978-1-63482-312-8. $160.00.
Even though the ApoA5 gene was discovered more than 13 years ago by Pennacchio et al, 2001 [1], and it was known then the gene influences triglycerides, leading to speculations that it would affect the risk of stroke; the factors that affect cardiovascular diseases are very complex. Larry Baum's group shown that APOA5 genotypes were not significantly associated with strokes or stroke subtypes in the cohort they studied [2]. The discovery of the ApoA5 gene was very special in that, unlike many other genes discovered through studying a known protein or enzyme, advanced bioinformatics was used for the initial gene discovery, an amazing feat that could not have been done without knowledge of the human genome. The laborious effort in deciphering the genome was very controversial in its infancy, and voices of opposition nearly led to premature abortion of the project, and much of the objection was voiced due to the doubt of spending a huge budget in sequencing what was thought to be useless, i.e. for a major proportion (98%) of "junk DNA" at that time. However, recently it was shown that deleting a non-coding region of what was thought to be "junk DNA" could lead to narrowing of arteries in mice [3] so that might offer an
Caffeic Acid: Biological Properties, Structure and Health Effects

Leanna Vaughn

In series: Biochemistry Research Trends

This book addresses research advances on caffeic acid, a naturally occurring hydroxycinnamic acid with various biological and pharmacological properties. Some of the topics discuss in this book include the derivatives of caffeic acid; the role it plays in winemaking; the comprehensive understanding of anti-diabetic and anti-obesity effects of coffee intake via nutrigenomics; the antimicrobial properties; and other useful properties of caffeic acid.

Cellulose and Cellulose Composites: Modification, Preparation, and Applications

Alberta Cohen

In series: Biochemistry Research Trends

Cellulose is the most abundant natural biopolymer. Recently, modified celluloses have been used as a reinforcement for various composites. Cellulose composite and modified cellulose are attractive because of their excellent mechanical and thermal performance. Furthermore, these are fully biodegradable in a wide variety of environmental conditions. Researchers all over the world are working on reinforcing cellulosic materials, with a goal to increase the number of uses of cellulose composites and modified cellulose. This book reviews some vital issues and topics on the latest scientific and technological advances in cellulose composites and modified cellulose. There are few books available on these topics. This book contains 20 invited contributions, written by renowned experts from many countries.

Cellulose and Cellulose Derivatives: Synthesis, Modification and Applications

Md. Ibrahim H. Mondal (Professor, Department of Applied Chemistry and Chemical Engineering, Rajshahi University, Rajshahi, Bangladesh)

In series: Biochemistry Research Trends

Cellulose is the principal constituent of all plant life; it is the most abundant, important and fascinating biopolymer on earth. Cellulose, as an almost inexhaustible, environmentally benign and renewable material, has stimulated basic and applied research as well as inspired significant progress in Polymer Science. In recent years, cellulose has gained renewed importance as a raw material. Although ground breaking research is carried out on cellulose, it still possesses high potential for future applications; it can be easily modified to more natural and sustainable alternatives compared to synthetic products by certain techniques. The present book reviews some vital issues and topics on the latest science and technological advances in cellulose and its derivatives. This catalog acts as an essential source of information to readers in the exploration for possible applications of cellulose and its derivatives. The authors hope this collection will spark a generation of new ideas for product development. The present book contains 25 invited contributions written by leading experts in the field of cellulose and cellulose derivatives. It is divided into three parts: Part I, Cellulose Synthesis and Modification; Part II, Cellulose Derivatives; and Part III, Applications of Cellulose Derivatives. Highlights of this book include the mechanism of cellulose formation in biosynthetic processes; surface modification and functionalization of cellulose fibers; advances in the homogenous and heterogeneous phase modification of cellulose to create unusual and functional derivatives; analysis and characterization of modified derivatives; derivatives for antimicrobial, medical and pharmaceutical applications, and wastewater treatment; dendronized and hyperbranched cellulose derivatives; and rheology of nanocellulosic systems.

Chlorpyrifos: Toxicological Properties, Uses and Effects on Human Health and the Environment

Caitlin Mayes

In series: Biochemistry Research Trends
Hardcover: 978-1-63482-111-7. $190.00.

Chlorpyrifos (CPF) is a broad spectrum organophosphate pesticide. Organophosphate pesticides comprise a group of substances used in agriculture for insect and plague control, infestations in buildings, man or domestic animals. The use of insecticides represents an environmental risk due to the high mass of product applied annually. This book discusses the toxicological properties, uses and effects on
human health and environment of the organophosphate pesticide, chlorpyrifos.

**Cyclodextrins: Synthesis, Chemical Applications and Role in Drug Delivery**

*Francis G. Ramirez*

In series: *Biochemistry and Molecular Biology in the Post Genomic Era*


Cyclodextrins (CDs) are capable of interacting with a large variety of guest molecules to form inclusion complexes. The authors of the chapters that form this book discuss the development of ion-selective electrodes based on selected cyclodextrins and their derivatives as selective ionophores for various drugs and their applications in pharmaceutical research; the wide range of applications of CDs in biomedical electrochemistry, focusing both on their behavior in solutions and embedded in thin films formed at the electrode surface; the general features of CDs and the progress done so far in the field of microencapsulation of pesticides in CDs; cyclodextrins as encapsulating agents for bioactive plant molecules in the pharmaceutical field; the effect of cyclodextrins on the photodegradation profile of drugs when they are used in drug formulations; applications of cyclodextrins in stabilizing or solubilizing ingredients of pharmaceutical relevance used in the food industry (commonly called nutraceuticals); the use and importance of cyclodextrins in the pharmaceutical industry; the main aspects of the crystal structures of the dimeric β-CD inclusion complexes; the influence of biologically active inorganic ions on complex formation of cyclodextrins with some aromatic carboxylic acids possessing pharmacological and biological activity; the importance of detailed characterization of the composition of substituted CDs by the example of sulfobutylether cyclodextrins; the several crystal structures of dye inclusion complexes using cyclodextrin, the preparation of DISC (dye inclusion single crystal); the structural details about the dye inclusion complex analyzed by X-ray and the properties of porphyrin DISC.

**Forskolin: Sources, Mechanisms of Action and Health Effects**

*Marty H. Walker*

In series: *Biochemistry Research Trends*

Softcover: 978-1-63463-918-7. $82.00.
e-book: 978-1-63463-944-6. $82.00.

Forskolin is a labdane diterpene, isolated from plant Coleus forskohlii (Lamiaceae), which has been used in traditional Indian medicine, Ayurveda. Forskolin increases the production of cyclic adenosine monophosphatase (cAMP) by activating adenylyl cyclase. Forskolin has many pharmacological effects and some of them are independent of cAMP. Coleus forskohlii root, which contains forskolin has been used in Ayurvedic medicine for cardiovascular disorders and gastrointestinal disorders. Recently, forskolin has been used as anti-obesity and anti-glaucoma agents. This book discusses the sources, mechanisms of action and health effects of forskolin.

**Fumonisins: Natural Occurrence, Management Practices and Health Concerns**

*Craig M. Evans*

In series: *Biochemistry Research Trends*

Softcover: 978-1-63482-789-8. $82.00.
e-book: 978-1-63482-810-9. $82.00.

The genus Fusarium are among the most common contaminants of cereals and their products, and many species have acquired additional importance because they have been shown to produce mycotoxins (fumonisins), causing both animal and human diseases. Fusarium spp. molds and fumonisins were also found to be contaminants on various commodities around the world. The authors discuss the many natural forms of fumonisins and exposure to these mycotoxins, which can cause various adverse health effects in animals and humans. The state-of-the-art liquid chromatography-mass spectrometry techniques for the analysis and characterization of fumonisins in food-based products and other matrices are reviewed as well.

**Gibberellins and Gibberellic Acid: Biosynthesis, Regulation and Physiological Effects**

*Jackson Hardy*

In series: *Biochemistry Research Trends*

2015. 95 pp.
Softcover: 978-1-63482-549-8. $82.00.
e-book: 978-1-63482-580-1. $82.00.

Gibberellins (GA) are a large group of tetracyclic diterpenoid carboxylic acids, which are essential for many processes in plants, including seed germination. In combination with other hormones, it helps the plant to overcome abiotic stress. The authors of this book examine the main issues regarding the production, functions and biosynthesis of gibberellins. The importance of the biosynthesis, deactivation and signaling of gibberellins are discussed as well. Additionally, current research on the prominent molecular mechanisms that control GA levels, and their physiological involvement in plant growth and metabolism are examined. The recent advances of the importance of GA modulating plant immunity and the positive and negative regulators signaling pathways crosstalk in disease and defense are looked at as well. The last chapter of this book is focused on the mechanisms involved in the control of tuberization by gibberellins, including the regulation of bioactive GA levels, the mechanisms of action during tuber formation, and the interaction between GA and other hormones affecting tuberization.

**Human Serum Albumin (HSA): Functional Structure, Synthesis and Therapeutic Uses**

*Travis Stokes*

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

Hardcover: 978-1-63482-963-2. $190.00.

Human Serum Albumin (HSA) is the most abundant plasma protein. It has been widely used for drug delivery systems and has recently emerged as a versatile carrier for therapeutic agents against diabetes, cancer and infectious diseases. This book provides an overview of the expanding field of preclinical and clinical applications and developments that use albumin as a carrier of drug delivery systems. The authors’ discuss the properties of drug binding sites within the structure of HSA, discuss new possibilities for the therapeutic potential of HSA and analyze recently reported HSA-drug complexes including HSA-antibody conjugates. Novel investigations on the applications of albumin fusion proteins are discussed as well, with a focus on tumor targeting and intracellular delivery. Other chapters examine the different aspects of albumin glycation and oxidation, the changes in the structure of human serum albumin determined from infrared spectroscopy and a review of CAPIDAN, a special fluorescent dye, which attaches to drug binding sites of human serum albumin.
In Search of the Silver Bullet: Assessment of Alternatives for Trichloroethylene in Cleaning Operations
Jason P Marshall and Heidi Wilcox (Lab Director Toxics Use Reduction Institute, University of Massachusetts Lowell, Lowell, MA, USA)
In series: Green Research, Developments, and Programs 2015. 182 pp.
Hardcover: 978-1-63483-424-7. $110.00.
Trichloroethylene (TCE) has historically been used for various cleaning and degreasing applications. Because of the human and environmental health effects associated with exposure to TCE, it has been the target of many state’s pollution prevention (P2) programs over the past decades. Many P2 assistance providers consider this field to be “conquered” and have moved on to other niches to focus their efforts on the next battle. In many cases, particularly among larger companies, TCE has been better controlled through substitution and other engineering controls and has been regulated fairly well. However, control systems are not fool proof and accidents happen. A more protective approach would eliminate the exposure to the hazardous materials through substitution of safer materials. Unfortunately, there is no silver bullet product for replacing TCE and therefore it has not been eliminated. Alarmingly, there are many small users of TCE that continue the same cleaning and degreasing practices they have used for decades, and have not reduced their use of TCE at all. From the testing performed at the Massachusetts Toxics Use Reduction Institute’s (TURI) Cleaning Laboratory, a wealth of data has been accumulated on the performances of industrial cleaning products. In order to use this information effectively, a database system was created so that access to this resource can be performed easily and quickly. This database seeks to allow users to search for an alternative-cleaning product based on safety and effectiveness. However, the process does not and should not end there. Process-specific testing is the cornerstone to identifying effective alternatives. It links the theory of lab testing with the reality of field work. Therefore, success is achieved through lab testing, piloting and on-site evaluations. Case studies will demonstrate how the process has been effectively used at the TURI Cleaning Lab. Future solvents may hold the keys to identifying the TCE silver bullet, but they should be carefully evaluated for health and safety as well as performance. Until then, the use of substitution process established at the TURI Lab will continue to be the silver lining on how to move forward with TCE replacement.

Indoleamines: Sources, Role in Biological Processes and Health Effects
Angel Catalá (Instituto de Investigaciones Físicoquímicas Teóricas y Aplicadas, (INIFTA-CCT La Plata-CONICET), Facultad de Ciencias Exactas, Universidad Nacional de La Plata, Argentina)
Hardcover: 978-1-63482-097-4. $185.00.
e-book: 978-1-63482-098-1. $185.00.
This book presents an overview of the role in biological processes and health effects produced by indoleamines, which are ubiquitous and versatile molecules with important physiological functions. The topics analyzed in this book cover a broad spectrum of functions played by indoleamines including the role of indoleamines in reducing free radical damage and oxidative stress; melatonin; endogenous sources and role in the regulation of fish reproduction; the neuroimmune roles of indoleamine pathways in cancer; tryptophan damage signal and indoleamine 2, 3-dioxygenase; the health effects of indoleamines on cognition, in the prevention of brain aging and age-related diseases; melatonin as an ocular anti-inflammatory; the relations between water-soluble B vitamins and indoleamines; melatonin in neurodegenerative, psychiatric and systemic inflammatory disorders; tryptophan, indolamines and sleep; from human milk to tryptophan-enriched diets; function of indoleamines in biological processes with emphasis on lipid peroxidation and indoleamines in edible plants; and the role in human health effects.

Inulin: Biochemistry, Food Sources and Health Implications
Michael G. Marlow
Inulin (INL) is produced by several different plants. Inulins are polysaccharides and are of interest for the development of healthy products because they simultaneously respond to a variety of consumer demands. It is fibre-enriched, prebiotic, low in fat and low in sugar. This book discusses the food sources, the biochemistry and health implications of inulin.

Lecithins and Phospholipids: Biochemistry, Properties and Clinical Significance
Jason Hernandez
Hardcover: 978-1-63483-393-6. $190.00.
Phospholipids are the main components of biological membranes. This book covers the production, properties and use of natural and synthetic phospholipids as drug delivery systems for therapeutic agents, including small drugs, peptides/proteins and nucleic acids. Also covered in this book are major recent findings that elucidate the biochemical features of polyphenol-phospholipid interactions and their influence on the mechanical and biochemical properties of membranes; research on the metabolism of phospholipids and their fatty acids content, fragmentally altered in various diseases; information dealing with the various aspects of different metallodrugs with phospholipids and their analysis in the light of their importance in cancer therapy; the synthesis and metabolism of major membrane phospholipids; and an in-depth discussion on the synthesis of other phospholipids, including lecithin are examined as well.

Leucine: Biology, Consumption and Benefits
Sophia R. Newman
Hardcover: 978-1-63482-593-1. $110.00.
Leucine is a branched-chain essential amino acid. It accounts for approximately one-fifth of the requirements for essential amino acids. Leucine facilitates insulin-stimulated glucose uptake and insulin signaling in skeletal muscle cells. This book includes chapters on the physiological roles of leucine and the effects of leucine supplementation; the syntheses, properties and applications of the main leucine containing polymers and materials made of them that up to now have been studied; and the effects of hydroxy- beta methylbutyrate (HMB) and alpha-ketoisocaproate (KIC), which are metabolites of leucine on muscle function and sports performance based on recent findings.

Malondialdehyde (MDA): Structure, Biochemistry and Role in Disease
Jackson Campbell
Malondialdehyde (MDA) is one of the better-known secondary products of lipid peroxidation, and it can be used in biomaterials as an indicator of cell membrane injury. The first chapter offers an overview of the implications of MDA on oxidative stress, and therefore in neurogenerative diseases, as well as collects information of several natural products that exert beneficial properties on oxidative stress-related diseases by modulating MDA levels. The second chapter in this book focuses on the role of malondialdehyde in the development of insulin resistance in obesity. The chapter also comprehensively summarizes the pathophysiological roles of malondialdehyde and its impact on cognitive function in obesity. The third and final chapter looks at MDA as a marker of lipid peroxidation, in the internal organs of Wistar rats. MDA is the final product in the lipid peroxidation process, and the degree of lipid peroxidation, oxidative stress, can be evaluated by measuring the level of MDA in different tissues. The potential protective effects of O- and S- donor supplements (glutathione and lipic acid) on lipid peroxidation effects were described as well.

Matrix Metalloproteinases (MMPs): Classification, Molecular Mechanisms and Roles in Diseases
Jeremiah Sullivan
In series: Biochemistry Research Trends
2015.
Hardcover: 978-1-63483-689-0, $160.00.
Matrix metalloproteinases (MMPs) include a group of enzymes important in the degradation of components of the extracellular matrix (ECM) and are thought to be universally related to pathology. This book examines the relationship between matrix metalloproteinases (MMPs) and oral pathologies, including oral squamous cell carcinoma and separately, atherosclerosis. The molecular mechanisms regarding MMPs activation and the use of MMP inhibitors as an effective treatment in animal models of hypertension are reviewed. The status of MMPs and their regulators with infectious diseases of bacterial and protozoan origin that invade host through mucosal surfaces are explored. Finally, a clinical point of view is provided for the association between MMPs and bowel diseases.

Methylenetetrahydrofolate Reductase (MTHFR) in Health and Disease
Roger Evans
In series: Protein Biochemistry, Synthesis, Structure and Cellular Functions
2015. 102 pp.
Softcover: 978-1-63483-332-9, $82.00.
e-book: 978-1-63483-359-2, $82.00.
Methylenetetrahydrofolate Reductase (MTHFR) is a key enzyme involved in the folate pathway. Folate, a water soluble B vitamin, naturally present in fruits and vegetables, is a critical methyl donor for several molecular pathways necessary for cellular replication and maintenance. The authors of this book examine the importance of MTHFR in health and disease, including the folate requirements in healthy young women and its potential health implications and the role folate deficiency and MTHFR polymorphisms may play in the complex mechanism of global DNA hypomethylation. Other chapters explore and describe literature data on the involvement of MTHFR gene in HNC development and treatment outcomes and the role of MTHFR and other enzymes in the circulation of methyl in certain neurodegenerative diseases.

New Developments in Tryptophan Research
Victoria Hayes
In series: Biochemistry Research Trends
Hardcover: 978-1-63483-025-6, $110.00.
Tryptophan is not only an essential amino acid but also an effective signaling molecule as an indicator of amino acid sufficiency. Serotonin is biosynthesized from the essential amino acid tryptophan. The first chapter of this book deals with the effects of tryptophan as well as some strategies of treatments that modify serotonin levels on cognitive processes during aging and neurodegenerative diseases. The changes of tryptophan metabolism under immunological challenges and physiological conditions like stress are examined as well. In the third chapter, the authors illustrate the key role of L-tryptophan in metabolic functions with special emphasis on the alterations of circadian rhythms. The remaining chapters of the book focus on new research findings on L-tryptophan synthesis from D-serine; the complex experimental and theoretical studies of the tryptophan molecule in its collisions with low and high energy electrons; and finally, a commentary on a novel tryptophan-selective amino acid transporter that is functionally coupled to IDO1-dependent signaling pathways.

Radon: Geology, Environmental Impact and Toxicity Concerns
Audrey M. Stacks
In series: Biochemistry Research Trends
Hardcover: 978-1-63463-742-8, $210.00.
Radon is a naturally occurring volatile gas formed from the alpha radioactive decay of radium. It is colorless, odorless, tasteless, chemically inert, and radioactive. Of all the radioisotopes that contribute to natural background radiation, radon presents the largest risk to human health. This book discusses the geology, the environmental impact and the toxicity concerns of radon. Some of the topics included are the use of radon in balneotherapy; the health implications of radon in tap water; methods of radon measurement; and facts and interpretations of radon buildup in dwellings, spas and caves.

Salicylic Acid and Jasmonic Acid: Biosynthesis, Functions and Role in Plant Development
Phyllis Santos
In series: Plant Science Research and Practices
Hardcover: 978-1-63482-138-4, $110.00.
e-book: 978-1-63482-139-1, $110.00.
Salicylic acid (SA) and methyl jasmonate (MJ) signaling is associated with phospholipids and the enzymes that metabolize them. However, despite the many studies conducted, the role of SA or MJ signaling via phospholipids in plant responses is not yet fully understood. The signaling pathways of SA and MJ have been evaluated in plant cell suspensions, and it was observed that these compounds regulate enzymatic activities to generate a rapid cellular response. This book discusses the immune responses induced by salicylic acid and jasmonic acids against plant parasites; the induction by SA of in vitro thermotolerance during thermotherapy; salicylic acid, methyl jasmonate and phospholipid signaling in suspension cells; the self-association of salicylic acid derivatives in aqueous solutions studied by methods of absorption and fluorescence; and the role of exogenous salicylic acid applications for salt tolerance in tomato plants.

Sphingomyelin and Ceramides: Occurrence, Biosynthesis and Role in Disease
Cecilia L. Watkins
In series: Biochemistry Research Trends
2015. 103 pp.
Softcover: 978-1-63482-553-5, $82.00.
e-book: 978-1-63482-585-6, $82.00.
Sphingolipids are involved in a wide range of physiological and pathological processes none only as signaling molecules but also as key structural components regulating the lateral organization of cellular membranes. In this book, exciting new approaches that open a window to further characterize sphingolipid-enriched domains in cell membranes during both physiological and pathological processes are reviewed. Furthermore, sphingolipids (SLs) are especially important in the central nervous system (CNS) where they are a necessary structural component of membranes of brain cells or signaling molecules. Ceramides are the core constituent of most sphingolipids. The authors review the possible sources of ceramides in the central nervous system (CNS) and present information about recent preclinical clinical trials of therapies targeting the ceramide pathway in the brain. Data about significant alteration in levels of ceramides in brain cells during the development of different neurodegenerative diseases are also discussed, such as in with Alzheimer’s disease, Parkinson’s disease, multiple sclerosis, cerebral ischemia, Gaucher’s and Farber’s disease.

Sulfated Polysaccharides
Miguel Gama (Minho University, Portugal) Helena Bonciani Nader (São Paulo University, Brazil) and Hugo Alexandre de Oliveira Rocha (Federal University of Rio Grande do Norte, Brazil)
In series: Biochemistry and Molecular Biology in the Post Genomic Era
In the post-genomic era, science is still challenged to explain the biosynthesis of complex polysaccharides and glyconjugates. Unlike nucleic acids and proteins, the information needed for their biosynthesis is not clearly contained to this day within the genome of the various organisms. This means that no biosynthetic code has been revealed yet. As a result, there will be millions of structurally distinct, functional chemical species at the end of their biosynthesis. This book offers an up-to-date view on sulfated polysaccharide structure and function state of the art in different life kingdoms: bacteria, protista, plantae, fungi and animalia. The structure, activities and current thinking on the interplay between these two vital features (as well as ways to study them) are reviewed in the present book. The growing economical interest in sulfated polysaccharides due to their potential biotechnological use in different areas, such as pharmaceutical and food industries, are also commented on. The information within the chapters adds to other prior available literature; the intention of the authors was to extend and further develop the discussions related to glyobiology.

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
2015. 347 pp.
Hardcover: 978-1-63117-084-3. $175.00.
Softcover: 978-1-63117-499-5. $89.00.
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. The 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 cell 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.

Threonine: Food Sources, Functions, and Health Benefits
Jacob Coleman
In series: Biochemistry Research Trends
Softcover: 978-1-63482-554-2. $82.00.
e-book: 978-1-63482-586-3. $82.00.
Threonine, one of proteinogenic as well as essential amino acids, is classified as polar and uncharged residue, which may play an important role in intermolecular interactions between protein molecules and small ligand molecules. This book includes chapters on the lysozyme of egg white, which contains seven threonine residues in the primary structure; the requirements of threonine for laying hens fed diets with increasing levels of threonine at variable and constant ratios; the role threonine may potentially play in intermolecular interactions towards ligands of small molecules and the highly mutated threonine-producer strains, and ways of optimization and intensification of its biosynthesis.

Vitamin B12: Chemical Aspects, Transport, Cause and Symptoms of Deficiency, Dietary Sources, and Health Benefits
Elena Mutti (Department of Biomedical Sciences for Health, University of Milan, Milan, Italy)
In series: Biochemistry Research Trends
Hardcover: 978-1-63482-976-2. $160.00.
In mammals, vitamin B12 (also called cobalamin (Cbl)) is involved in several metabolic pathways and necessary for the proliferation and survival of different cell types. Due to an impaired vitamin uptake, a mild, chronic deficiency of Cbl is quite common in the elderly population as well as vegetarians and vegans. A status of Cbl-deficiency induces several disorders including severe anaemia and a neuropathy, and has horrible consequences in fetal development. Based on the information above, it is very important to analyse all the aspects of Cbl in both chemical and clinical trials. With this book, researchers as well as medical doctors and nutritionists can learn of recent advances and answers to basic questions on chemical structures, delivery systems, and clinical aspects of Cbl function. In the first half, we will learn the importance and new applications of Cbl analogues, as well as the complicate arranging of Cbl transporters and finally the recent frontiers on Cbl epigenetic role. The latter part includes the issues linked to the Cbl-deficient diagnostic examinations, Cbl pharmacological uses and recent advances in foods containing Cbl (concentration, bio-availability and enriched food). Finally, ample space will be left to discuss the effect of Cbl-deficiency, from the early cases to the latest study on Cbl involvement in the immune system and its role in carcinogenesis.
BIOLOGY

Arabidopsis Thaliana: Cultivation, Life Cycle and Functional Genomics
Adriano Sofo (Scuola di Scienze Agrarie, Forestali, Alimentari ed Ambientali School of Agricultural, Forestry, Food and Environmental Sciences, University of Basilicata, Potenza, Italy)
In series: Plant Science Research and Practices
Hardcover: 978-1-63482-152-0. $110.00.
Plants are sessile organisms and their only alternative to a rapidly changing environment is a fast adaptation to abiotic and biotic stresses. Among the several known species of flowering plants, Arabidopsis thaliana is the only plant that has been most thoroughly studied. This angiosperm with dicotyledonous seeds belonging to the family Brassicaceae was known to botanists for at least four centuries and has been used since then for experimental studies for about half a century, until it was Fried rich Laibach who had outlined the advantages of using it in genetic experiments and had also suggested that it could be used as a plant model system in 1943. Its unique features favors genetic experiments, which include its small size, a rapid generation time, the ability to grow well under controlled conditions, high fecundity if up to 10,000 seeds per plant. Like the peas that Mendel studied, it reproduces mainly by self-fertilization. Arabidopsis is considered a model plant for many studies as its genomic sequence was completely identified and its mechanisms in genomic, transcriptomic and proteomic regulation are often similar to other plant species. The aim of this book is to give an up-to-date overview on the recent breakthroughs in the area of responses and adaptations of Arabidopsis, particularly those regarding its cultivation, life cycle and functional genomics. The chapters are focused on the most exciting and innovative researches on this species, involving authors with strong research experience. The present volume would definitely be an ideal source of scientific information to the advanced students, junior researchers, faculty and scientists involved in the ecology, agriculture, environmental microbiology, genetics, molecular biology, biochemistry, biotechnology and other areas involving Arabidopsis studies and plant sciences in general.

Coliforms: Occurrence, Detection Methods and Environmental Impact
Geoffrey McCoy
In series: Bacteriology Research Developments
Hardcover: 978-1-63483-542-8. $110.00.
e-book: 978-1-63483-577-0. $110.00.
Coliforms are widely used as indicators of water quality and sanitary status, and levels are regulated as standards and legislation in many jurisdictions. The group of organisms known as coliform bacteria are commonly used to gauge quality and potential for health risk of potable and recreational waters, and are stimulated in water quality standards and legislation of many jurisdictions worldwide. The contents of this book includes an overview about the involvement of biofilms in waterborne diseases; currently employed methods of analysis for coliform bacteria; the testing of coliformic bacteria for water departments using automated sampling and analysis; the prevalence of E.coli outbreaks linked to the consumption of certain products; and finally, a review of the sources of coliform bacteria in freshwaters.

Food Microbiology: Fundamentals, Challenges and Health Implications
Elaine Perkins
In series: Microbiology Research Advances
Hardcover: 978-1-63483-385-1. $190.00.
The authors of this book discuss the most recent advancements in food microbiology research. Chapters include a review on the factors which help to choose the conditions that assure food microbial stability and contribute to food safety and quality; an examination of the prevalence of one of the most important food-borne pathogens, L. monocytogenes, particularly in fruits and vegetables; emerging bacteria detection methods in food and culture media using mass spectrometry (MS); detection techniques of Salmonella, of which infections from animal food play an important role in public health and particularly in food safety; and case studies of yeasts in fruit wine fermentations, which can have important implications for developing fruit wine and can contribute to an important advancements in any fermentation products.

H∞ Robust Designs and Their Applications to Control, Signal Processing, Communication, Systems
and Synthetic Biology: An Integrated Course for Engineering, Mathematics, and Bioscience
Bor-Sen Chen and Chia-Chou Wu (Department of Electrical Engineering, National Tsing Hua University, Taiwan)
In series: Systems Biology - Theory, Techniques and Applications
2014.
Hardcover: 978-1-63482-492-7, $270.00.
e-book: 978-1-63482-733-1, $270.00.
H∞ Robust design is an advancing technology which aims to achieve the system design purpose under intrinsic random fluctuation and external disturbance. This book introduces several robust design methods, some of which include linear to nonlinear systems and frequency to time domain. This book provides not only a complete theoretical development and application of H∞ robust design over the last three decades, but also an integrated platform for control, signal processing, communication, systems and synthetic biology. Based on the theoretical H∞ robust design results, the authors also give some practical design examples to illustrate the procedure and validate the performance of the proposed H∞ method with computational simulations and tables.

Human Evolution
Pranveer Singh (Assistant Professor, Department of Zoology, Indira Gandhi National Tribal University (IGNTU), Amarkantak, India)
In series: Science, Evolution and Creationism
2015. 146 pp.
Hardcover: 978-1-63483-423-0, $160.00.
This proposed book on human evolution will be a comprehensive book covering all uncovered issues relevant to human evolution. This book deals with human evolution in exhaustive detail. Up-to-date literature and work (2013-14) have been incorporated, thus including every possible piece of information relevant to the subject. Chapter 1 deals with the historical overview of the subject citing the pre-Darwinian and Darwinian eras, and also covers the genesis of human evolution with Africa as the cradle of human existence. Chapter 2 describes different species of the genus “omo” and also various theories of human dispersal. Chapter 3 is devoted to the anatomical and morphological modifications in the body plan and their role in evolving and diversifying Hominins from their Great Ape ancestors. Chapter 4 discusses evidence from molecular biology, genetics and fossils to validate Homin evolution. Additionally, fossil evidence and lack thereof for different body parts is also described. Chapter 5 and 6 are especially devoted to the behavioral, social-cultural and cognitive aspects of human evolution. They also describe in detail the development and organization of social structure, and social systems with a note on their role in evolving humans. Chapter 7 is included to analyze the biggest controversy of modern time related to human evolution: “Ida as a missing-link”. It critically examines different literature to arrive at impartial and rational conclusion about the controversy. Wherever necessary, text is supplemented with figures, ray diagrams and appendices. Appendices and bullet points are provided at the end of the book for a quick recap of the complete evolutionary process.

Leaf Epidermal Anatomical Characters and Anatomical Tools for Systematical Studies of some Medicinally Important Angiospermic Families
Zubaida Younas, Afia Younas and Arusa Aftab (Department of Botany, Lahore College for Women University, Lahore, Pakistan)
In series: Plant Science Research and Practices
Hardcover: 978-1-63483-190-1, $190.00.
e-book: 978-1-63483-212-0, $190.00.
Nowadays, the world is turning toward herbal medicine for health improvement. This system of medicine is not new; it has roots in the beginning of human civilization, perhaps as early as the time of the Neanderthals. Evidence of early herbal remediation dates back over 4,000 years ago; examples include the Chinese Empire (2800 BCE), Babylon (1770 BCE), and Ancient Egypt (1550 BCE). Islamic and Indian physicians also wrote many works prior to 1100 AD and the seals from the Harappan site in Pakistan (2000 BC) also indicate the use of plants. The first step in quality control of botanical preparations is ensuring the correct identification of the plant intended for use. While there are several methods for identification, the most direct and least expensive is macroscopic identification. The foliar epidermis is one of the most striking taxonomic characteristics from the biosystematic point of view, and the taxonomic studies of a number of families are made on the basis of the leaf epidermis. The role of anatomical data in traditional taxonomy has been long recognized since the variations within the species, genera or a family is usually reflected in anatomical features as well. Leaf epidermal anatomical features such as stomata, trichomes and other characteristics are useful identification tools. Such characteristics in plants show great diversity and could be very effective for the resolution of existing taxonomic problems of medicinal plant species.

Microbiological Food Hygiene
Eino Elias Hakalehto (Department of Environmental Sciences, University of Eastern Finland, Kuopio, Finland)
In series: Microbiological Hygiene
Edited by: Eino Elias Hakalehto, Ph.D. (Institute of Biomedicine, University of Eastern Finland, Kuopio, Finland)
2015.
Microbiological Food Hygiene is a book about our clean and healthy nutrition from the sources of raw food materials into our homes. It associates nutrition to the functions of our alimentary tract and its microflora. They ultimately digest the food for nutrient uptake, as well as meet the challenges from the outside microbes. Both industrial food manufacturing and traditional means for hunting, fishing and gathering as well as the agriculture and animal husbandry are included from the hygienic point of view. Food hygienic quality during its production and preservation, distribution and catering are also focused on, as well as strategies for its maintenance. Besides our bodily source of energy and anabolism, food is a substrate for micro-organisms, both on its own and in our alimentary tract. Sometimes, the microbes cause spoilage, food-poisoning or diseases via food. Microbiological Food Hygiene introduces the common bacterial, viral, fungal or toxin agents of food-poisonings. In this book, the history of method development in food microbiology is surveyed, as well as the detection of food contaminants. Also, the follow-up of the effects of salmonellae, campylobacteria, Bacillus sp., staphylococcal, clostridial or other toxins, various food-poisoning zoonoses, dairy contamination, fish microbes, and several other forms of food contamination are included. Microbes can also be used for processing food for better diet and
preservation, its improved constitution, and for adding taste or nutritional values into it. This book introduces also some more exotic cases of traditional foods and their contamination problems and preservation means, from the arctic areas to the tropics. They could serve as examples for modern homes and restaurants or large industrial kitchens. The positive contribution of microbial strains in binding valuable trace elements, such as selenium and other minerals is presented, as well as the probiotic activities of several microbes and their roles in maintaining the BIB (Bacteriological Intestinal Balance).

Results on health promoting flavonoid substances and neonatal milk formulas are introduced. Methods for microbiological food diagnostics and quality monitoring are widely included, also with some actual problems as the spread of antibiotic resistant strains and some other emerging threats. These hazards are partially due to population expansion and global trade and travelling. Also, the industrial food manufacturing accelerates the buildup of some of the problems. Experts in microbiology as well as those working with food production and distribution in our societies need to keep up with the pace of various methods of development, such as novel genetic techniques or immunoassays, enhanced enrichment, volatile sensing, molecular diagnostics and many others. The influence of various microbes in foods and thereof is related to their metabolic capabilities, surface structures and the antigenic properties, biofilm formation, intestinal interactions, etc. These phenomena are profoundly discussed in the Microbiological Food Hygiene. Food sterilization, hygienization and preservation techniques, large kitchens and catering services, and other practical issues are also introduced. The importance of theoretic background is to be estimated on the basis of everyday activities in the versatile and fascinating field of food production and hygiene.

Molecular Mechanics and Modeling
Priscilla Watkins
In series: Chemistry Research and Applications
Hardcover: 978-1-63483-388-2, $110.00.
This book focuses on the latest developments in molecular mechanics and modeling research. Included in this book are chapters reviewing the progress of the bridging cell method (BCM) in its formulation and its nanostructure and material modeling applications; an analysis of the reaction selectivity of alanine racemase mutants; and a step-wise process for inferring the stereo structure of proteins constructed using related stereo structures. Lastly, molecular mechanics based models have proven to provide a representation of average carbon porosity and enable computational estimates of molecule-surface interaction energies. In the last chapter, the authors focus on graphene layer pore models for molecule-surface binding energies.

Mycotoxins: Occurrence, Toxicology and Management Strategies
Cesar Rios
In series: Microbiology Research Advances
Hardcover: 978-1-63483-544-2, $190.00.
Exposure to certain types of mycotoxins, the bioactive secondary metabolites of filamentous fungi, significantly impact the animal industry as well as human health. The contamination of food with mycotoxins is a worldwide problem in animal production and direct consequences are the reducing of food intake and production. In this book, the authors increase the public awareness of the implications of certain types of mycotoxins exposure to promote the health of livestock as well as the general public; an analysis of trichothecenes (TCEs), a large group of mycotoxins, and their impact on livestock health and production are also examined, as well as the occurrence of mycotoxins in animal products such as goat milk. Different strategies implemented for the analysis of a wide spectrum of mycotoxins, as well as their advantages and disadvantages are provided by the authors. In the next few chapters, the occurrence of mycotoxins in cereals and cereal products and in particular, their toxic properties are looked at; a discussion on deoxynivalenol (DON) and related 8-ketorichothecene mycotoxins, which are extensively distributed in cereal-based foods and feed stuffs worldwide are reviewed; potential toxigenic fungi from diverse habitats are identified with special emphasis on the methods as well as on the genetic markers employed; the importance of performing exposure assessments to Aflatoxin B and some of the most important aspects to consider in the risk assessment process, including the simultaneous presence of other mycotoxins and the challenge of choosing the most suitable method to perform exposure assessment are analyzed; and finally, a review of the occurrence of dietary mycotoxins in Africa as well as the advances in analytical methods of mycotoxin extraction and detection over the last decade is provided.

New Trends in Corynebacterium glutamicum: Beyond the Amino Acids
Carlos Barreiro (Instituto de Biotecnología de León (INBIOTEC) and University of León, Parque Científico de León, León, Spain)
In series: Bacteriology Research Developments
Hardcover: 978-1-63483-280-9, $190.00.
e-book: 978-1-63483-290-8, $190.00.
More than fifty years of scientific and industrial developments focused on the amino acid producer bacterium Corynebacterium glutamicum has successfully yielded up to 2.93 and 1.95 million tons/year of L glutamic acid and L-lysine, respectively. As a result of this biotechnological effort, a massive amount of knowledge decidedly applicable to the development of new products has been gained. Nowadays, this knowledge is used to enlarge the portfolio of C. glutamicum industrial products, since they are highly relevant as chemicals, biodegradable polymers, ingredients, or additives in food, feed, cosmetics and pharmaceuticals. This book addresses production of these new metabolites (C. glutamicum applications) and their potential under the expert point of view of those groups directly involved in their developments. Thus, amino acids out of the traditional glutamic acid or lysine, as L valine; food colorants such as carotenoids; dicarboxylic acids used as building blocks (e.g: succinate); alpha hydroxy acids as L lactate, D lactate or glycolate; biodegradable polyester (e.g.: polyhydroxybutyrate); alcohols for biofuel as isobutanol as well as bioremediation applications of the new developments around C. glutamicum described in this book. Those industrial relevant compounds come to the market parallel with the developing application of new technologies. Hence, cell activity as a whole by means of the Proteomics or Transcriptomics approaches, as well as the methodologies that mimic the large fermentor conditions in a scale-down format are also reviewed in the book. Additionally, a historical description and an updated review of the taxonomical environment of Corynebacterium genus open an essential manual for enterprises, researchers and academia involved in Actinobacteria, secondary metabolite production and industrial applications. This book reviews the evolution of almost sixty years of development, initially focused on amino acid production, which unleashes the idea of C. glutamicum as a biorefinery due to its ability to generate hundreds of products demanded by the market.

PEM Fuel Cells: Theory, Performance and Applications
Felicia Buchanan
In series: Energy Science, Engineering and Technology
Hardcover: 978-1-63482-227-5, $160.00.
Proton Exchange Membrane (PEM) fuel cells are still undergoing intense development, and the combination of new and optimized
materials, improved product development, novel architectures, more
efficient transport processes, and design optimization and integration
are expected to lead to major gains in performance, efficiency,
durability, reliability, manufacturability and cost-effectiveness. The
potential of fuel cells as an energy source to replace fossil fuels in a
wide range of applications, has now become a reality that is
environmentally friendly and helps support the sustainable
development of the planet. A fuel cell is a device that converts the
chemical energy contained in a fuel, generally hydrogen, into electrical
and thermal energy, in the presence of an oxidant, which can either be
either air or oxygen. This book discusses the theories, performance and
applications of PEM fuel cells.

Super-Spreading in Infectious Diseases
Richard A. Stein, M.D., Ph.D. (Research Scientist, Department of Biochemistry and Molecular Pharmacology, New York University School of Medicine, New York, NY, USA)
In series: Microbiology Research Advances
2015.
Hardcover: 978-1-63117-295-3. $190.00.

As one of the biological factors that most powerfully impacted history,
infectious diseases continue to be a leading cause of global morbidity
and mortality. At least two major factors are making infectious diseases
assume more important roles than ever before. One of these is the
increasing ability of certain microorganisms, normally limited to other
species, to cross or jump across the species barrier and become human
pathogens. The second factor — our increasing and unprecedented
global mobility which has made traveling between any two remote
locations on the planet possible in less than 24 hours. As a result, a
local outbreak anywhere in the world becomes a global concern. A
significant challenge that is shared by most (if not all) infectious
diseases is our insufficient understanding of the dynamic host-pathogen
interaction. In particular, one of the gaps in visualizing our interaction
with microorganisms stems from the fact that historically, pathogen
transmission in populations was assumed to be homogeneous, with
infected individuals having approximately equal opportunities to infect
secondary contacts. However, in what became known as “the 20/80
rule”, an increasing number of studies and observations point towards a
small number of individuals (20%) that are responsible for most (80%)
transmission events in a population. This minority of individuals who
infect a disproportionately large number of secondary contacts has
become known as “super-spreaders”. The phenomenon of super-
spreading lies at the core of understanding the biology of
microorganisms and their ability to cause outbreaks, and is
instrumental for developing and implementing preventive and
therapeutic strategies. This book proposes to examine super-spreading
in infectious diseases. Super-spreading dates back as far as Typhoid
Mary, the first documented example, and it was documented for most
microorganisms, including Mycobacterium tuberculosis, Plasmodium
and Schistosoma species, HIV, hepatitis C, influenza virus, Ebola
virus, rhinoviruses, Escherichia coli, West Nile virus, and the SARS
coronavirus. A thought-provoking find from the SARS pandemic was
that in the absence of super-spreading events, most infected individuals
caus~ very few (if any) secondary contacts, but a low number of
super-spreaders fueled the global outbreak. Super-spreading was
described in human, animal, and plant hosts, and it exists at the level of
the individual as well as at that of the species. One of the common
denominators of super-spreading events is that they are virtually
always identified only retroactively, as part of epidemiologic
investigations. There is, however, a great interest and an acute need in
being able to prospectively predict super-spreading, as this would
considerably improve the opportunities to prevent, control, and limit
outbreaks. A fundamentally important and far-reaching topic in
infectious diseases, the study of super-spreading holds key implications
for managing epidemics and pandemics, and promises to fill an
important gap in microbiology, medicine, public health, agriculture,
animal sciences, and biodefense.

Whiteflies and Aphids: Natural Occurrences, Biological Control and Plant Responses
Dawn L. Reeves
In series: Insects and Other Terrestrial Arthropods: Biology, Chemistry and Behavior
Softcover: 978-1-63482-507-8. $82.00.
e-book: 978-1-63482-534-4. $82.00.

Whiteflies are one of the major insect pests of greenhouse production
systems worldwide, feeding on a wide-range of greenhouse-grown
horticultural crops. Whiteflies cause both direct damage by feeding on
plant parts such as leaves as well as indirect damage by vectoring
certain plant viral and bacterial diseases. In addition, since whiteflies
feed within the phloem sieve tubes with their piercing-sucking
mouthparts, they may excrete honeydew, a clear, sticky liquid that
serves as a growing medium/food source for certain black sooty mold
fungi. This book examines the biological control of whiteflies as well
as aphids, which are serious pests of agricultural crops, particularly in
cereal crops including winter wheat. Aphids induce stress to the wheat
crop by damaging plant foliage, lowering the greenness of plants, and
affecting productivity. Therefore, it is very important to monitor and
prevent effectively wheat aphid for crop management. Additional
chapters provide remote sensing data on aphid monitoring and
prediction, and changes in the distribution of Russian wheat aphid
biotypes in South Africa.

BIOTECHNOLOGY

Advances in Biosensors Research
Thomas G. Everett
In series: Biotechnology in Agriculture, Industry and Medicine
Hardcover: 978-1-63463-652-0. $110.00.

Advances in biosensors have improved biomarker discovery, affinity
receptor design, detection of infectious microorganism and disease
diagnostics due to close interaction of nanotechnology with other
technologies which play a critical role for the future of biosensors and
health care. Biosensing technology is a fascinating field which
provides reliable, rapid and sensitive platforms for specific and ultra-
sensitive biomarker-based diagnosis of diseases such as cancer,
diabetes, infectious diseases and neurodegenerative disorders. This
technology can also be used for the detection and removal of toxic
materials from the human body such as cadmium, iron, aluminium and
mercury. This book discusses advances in biosensors research.

Advances in Digital Holography Research
Ella Myers
In series: Recent Trends in Biotechnology
2015.
Softcover: 978-1-63483-276-2. $82.00.
e-book: 978-1-63483-298-4. $82.00.

Holography, invented in 1947 by the Hungarian physicist Dennis
Gabor, is a two-step imaging technique that comprises the successful
combination of interferences and diffraction. This book provides
current research advances in digital holography. The topics discussed
include digital holographic interference microscopy for blood cells;
fragile and secure watermarking for the authentication of 3D images;
and digital holography for 3D metrology.
Food Security: Challenges, Role of Biotechnologies and Implications for Developing Countries

**Annabelle Harvie**

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

2015. 185 pp.
Hardcover: 978-1-63463-653-7. $190.00.

Discussions of food security usually focus on the question "Can we feed the world?" Providing enough food is a major challenge. To do so without unacceptable environmental impacts, so that food sufficiency is not compromised over time, is a deeper challenge that systemically links to other issues of sustainability, notably including climate change. This book discusses several challenges involved in providing food security. It also examines the role of biotechnologies and the implications for developing countries.

Forensic Science: New Developments, Perspectives and Advanced Technologies

**Johanna Brewer**

In series: *Recent Trends in Biotechnology*

Hardcover: 978-1-63483-086-7. $110.00.

This book explores recent developments in forensic science research, including invisible radiation imaging, providing important insights into evidence normally beyond the visual experience of investigators. Additionally, establishing the interval between the time of death and when a body is found is one of the most complex questions to be answered by forensic scientists. The second chapter examines new approaches in postmortem interval (PMI) estimation. Finally, in forensic medicine, the diagnosis of a corpse immersed in water in which a differentiation must be made between death from drowning or death on entering the water, is made mainly using the diatom test by acid digestion. The authors assess the 16S rDNA gene of picoplankton from tissues. The results verified that the detection of phytoplankton DNA in the liver and kidney is the most important evidence for the diagnosis of death from drowning.

Industrial Biotechnology: Principles and Applications

**Loveleen Kaur, Ph.D. and Robinka Khajuria (School of Biotechnology and Biosciences, Lovely Professional University, Phagwara, Punjab, India)**

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

Hardcover: 978-1-63463-847-0. $170.00.

Industrial biotechnology can be defined as the use of modern biological life sciences in various industries. Biotechnology has a myriad of applications in our day to day life such as with simple processes such as the brewing of beer, use of enzymes in detergents, production of fermented food, production of antibiotics, nutritional supplements etc.

This book also includes processes (production of biofuels, treatment of effluents) that contribute to creating efficient, eco-friendly environments. This book discusses the different aspects of bioprocesses; media design, fermenter design and the economics of it. It also explains in detail the processes and techniques involved in the production of commercially important products. This book is an up-to-date collection of the latest practices being followed in the field of industrial biotechnology for students both at the undergraduate and postgraduate level.

BOTANY

Jatropha Curcas: Biology, Cultivation and Potential Uses

**Gregory Medina**

In series: *Plant Science Research and Practices*

Hardcover: 978-1-63483-089-8. $190.00.

Jatropha curcas Linnaeus is a multipurpose plant belonging to the Euphorbiaceae family. It has social, agricultural, environmental, industrial, pharmaceutical and energy production potentials. It has high amounts of oil in its seeds, which can be converted to biodiesel. This book begins with a discussion on the use of Jatropha curcas as a biofuel. It continues by exploring other potential uses of Jatropha curcas.

Nectar: Production, Chemical Composition and Benefits to Animals and Plants

**Robin L. Peck**

In series: *Plant Science Research and Practices*

2015. 188 pp.

Floral nectar is a sweet, aqueous secretion that mainly consists of sugars and to a lesser extent amino acids. It is offered by plants to entice pollinators and to ensure pollination and thus sexual reproduction. This book discusses several benefits of plant nectar. It also discusses the production and chemical composition of nectar.

New Developments in Allelopathy Research

**Julia E. Price**

In series: *Botanical Research and Practices*

Hardcover: 978-1-63483-390-5. $190.00.

Allelopathy refers to the beneficial or harmful effects of one plant on another, including both crop and weed species. Mushrooms are one such example which provides various effects to their curcumjacent plants by releasing allelochemicals. The authors' of this book examine the allelopathy of mushrooms and showed that all mushrooms have allelopathic activity without exception. Furthermore, rice, barley, wheat, rye, sorghum and sunflower are known to be allelopathic crops. The authors focus on buckwheat in particular, to determine whether or not it is allelopathic as well. Other chapters examine the allelopathic effects of macrophytes in subtropical shallow lakes; and the invasive potential of parthenium weed, a herbaceous plant, and one that has now invaded over 44 countries worldwide, having an impact upon both crop and pasture production, natural community biodiversity and human and animal health.

Phaseolus Lunatus: Diversity, Growth and Production

**Ademir Sergio Ferreira de Araujo, Angela Celis de Almeida Lopes and Regina Lucia Ferreira Gomes (Department of Agricultural Engineering and Soil Science Agricultural Science Center, Federal University of Piauí Teresina, PI, Brazil)**

In series: *Plant Science Research and Practices*

Hardcover: 978-1-63482-494-1. $110.00.
This book has been written in an attempt to advance people's knowledge on the Lima bean (Phaseolus lunatus) crop in tropical and sub-tropical regions. The Lima bean is an important species of plant for humans in tropical regions and its seeds are considered an important source of protein for people from South America, Africa, and Mexico. There is little information about the Lima bean crop regarding its origin, diversity, evolution, growth and production. This book encompasses nine chapters on the topic to provide a broad knowledge of this fascinating crop. The first three chapters cover the origin, diversity and evolution of the crop, including important information from Mexico and Brazil. Chapter Four covers the phenology and development of the Lima bean aiming to understand all periods of growth. Chapter Five shows important information for plant production regarding soil, chemical and organic fertilization. Chapters Six and Seven explain all aspects related to biological nitrogen fixation with information about soil bacterial diversity and the potential to fix the problem in tropical soil. Chapter Eight reports important diseases related to the Lima bean and their management. Chapter Nine shows the social and economic importance of the Lima bean mainly for developing countries.

**CHEMICAL ENGINEERING**

**Lignocellulose: Biotechnology, Chemical Composition and Future Prospects**

*Kelly L. Pittman*

In series: *Chemical Engineering Methods and Technology*


Hardcover: 978-1-63482-887-1. $110.00.


This book is focused on new developments in lignocellulose research. In particular, lignocellulosic biomass has been the focus of considerable attention for the production of a wide range of valuable products in biorefineries which aim to utilize renewable starting material instead of fossil based products. The authors focus on the usage of hemicellulose to produce various bio-based products including platform chemicals that have considerable market potential in the coming years. Other chapters in the book review studies which have explored how the lignocellulose morphological structure affects the enzymatic hydrolysis reaction and the corresponding plant cell wall structural changes. Other chapters describe the state-of-the-art of pretreatment processes, fermentation processes, microbial lipid accumulation pathway and methanolysis of the microbial lipids to increase the yields of biodiesel as well as the challenges associated with the use of lignocellulosic biomass (LCB); the ways in which membrane technology has been gaining widespread recognition to substitute the existing separation and purification technologies, specifically, the applications of ionic liquid based membranes; and the quantitative composition of secretome of potent biomass hydrolyzing fungi along with their post translational modifications and also the role of PTMs.

**CHEMISTRY**

**Advances in Chemical Modeling, Volume 5**

*Mihai V. Putz (Laboratory of Computational and Structural Physical Chemistry, Biology-Chemistry Department, West University of Timişoara, Romania)*

In series: *Chemistry Research and Applications*


Hardcover: 978-1-63482-310-4. $230.00.


In the 1970s, when something like chemical graph theory and molecular topology arose, the quantum chemical community began to criticize it, mainly with the argument that it reduced chemistry to mathematics, to empty meaningless numbers, to non-physical interpretable indices, to a combinatorial without synthesis counterpart, to an algebra (matrices and polynomials) exercise; moreover, since the kenographs were mainly the objects of the chemical graph theory study, i.e. the chemical structures' skeleton (mostly of carbon-based contents) excluded the hydrogen structural influence (the most abundant element of universe) and even the hetero-atom combination, i.e. the essence of chemistry combinations. Therefore, so what for a whole theory of chemistry just for the carbon skeleton-based compounds? Years passed and the tension between the chemical graph theory/topology indices and the consecrated quantum chemistry/chemical reactivity indices continued, with fruitful results on both sides. It wasn’t until the XXI century that arose the so-called nanoscience tendency to unify all natural sciences that work using models of causes at the nano-level of matter to describe and predict meso- to micro-/macro- chemistry (i.e. the chemistry of materials nowadays) with certain influences in bio/eco-/pharmaco- toxicology and environment, so in everyday life and a sustainable (or not) future on planet Earth (double “aa” is for emergency)! The dawn of the XXI century brings the fertile idea that nanosystems are benchmarks of extended carbon systems, whose nano-preursors are benzenoids' condensations, so reviving in a surprising manner the interest of chemical graph theory first and then on its quantitative output through topological indices; yet, nowadays the challenge is double: nanochemistry should “color” the topology with quantum information and be applied to medium-to larger systems. The kenographs are no longer a problem as far extended saturated systems are under focus; moreover, what is abstracted for graphs and nano-skateleons may work for Carbon as well as for Silicium, so opening/preparing the next stage in nanochemistry – the chemistry of Silicium, with so much promise to connect with long-expected first nano-tronic devices on a main stream level with harvesting, ecology, and sustainability effects in economy and social life! Aiming to document this undeniable nano-chemistry future, the present volume, while continuing the series, contains world-class research.

**Advances in Chemistry Research. Volume 24**

*James C. Taylor*

In series: *Advances in Chemistry Research*


This new 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 determination of hydrate stability zone of sour gases using a two parameter model; the bio-protective effectiveness of trehalose against man-made electromagnetic fields; acetone tautomerism; nano-sized carbon-coated Li4Ti5O12 particles with enhanced high-rate performance for lithium-ion batteries; evaluation of the experimental data for gas solubility in liquid water in equilibrium with gas hydrates; computation of the second virial coefficient of chemical compounds using a corresponding states based method; computer aided molecular design by using property cluster and molecular matrix; multi residue method for determination of fifty-five pesticide residues in pomegranate samples by gas chromatography coupled with triple quadrupole tandem mass spectrometry using the quechers extraction method; and metrological key concepts applied to chemical and pharmaceutical testing laboratories.

**Advances in Chemistry Research. Volume 25**

*James C. Taylor*

In series: *Advances in Chemistry Research*

2015. 221 pp.
This new 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 integrated upgrading of energy agro-crops for production of dissolving grade eco-clean cellulose fibers; effective medium simulations (EMS) model for accounting of multibarrier tunneling in single molecular nanodevice; methods for converting nitro aryls to secondary arylamines in one-pot; effect of NaOH coatings on the 330Cb alloy oxidation at 900 °C; evaluation of a novel natural adsorbent for heavy metal removal and its comparison to banana peel; structural diversity, surface composition, and redox behavior in the La0.2Sr0.4CoO3 – PrO2 system; improvement of x-ray fluorescence and x-ray radiometric methods of rare heavy metals’ diagnostics in soils; difference in deformation characteristics by forming into the agglomerates in KCl/Sr2+ single crystals; the electrolytic dissociation of alkyl and aryl derivatives of glutaric acid; and thermodynamic consistency tests for experimental data of salt deposition in saline water.

Advances in Chemistry Research. Volume 26
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-63463-630-8. $190.00.
e-book: 978-1-63482-508-5. $190.00.
This new 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 recent advances in rare earth doped lead-free oxyfluoride silicate glasses and glass-ceramics for optoelectronics and active fiber technology; supramolecular carriers for triclosan; a comparative method for evaluating the natural uranium isotopes 238U and 234U in waters; theoretical assessment of plasma gasification processes of low grade coal and biomass feedstock; potential applications of actuarial pension mathematics to chemical sciences; separation of XRD patterns to determine crystal structures of LiMnO2 showing anisotropic lattice strain as composites with chiral metal complexes; using folic acids to detect reactive oxygen species; surfactant-based extractions; evaluation of the possibility of using normalization with cobalt in detection of anthropogenic heavy metals in sediments; effect of black chokeberry juice on diethylnitrosamine from precursors in in vitro experiments; the density functional theory investigations of the local structure of hydrated electron and di-electron; and carbonic anhydrase mediated biomimetic CO2 sequestration.

Advances in Chemistry Research. Volume 27
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-63482-545-0. $160.00.
This new 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 valorization of fatty acids and terpenes in the presence of heterogeneous catalysts; physicochemical properties of acidic polysaccharides from seaweeds and their application to wheat flour noodle; the study of pre- and postnatal influence of ethanol on structural diversity, surface composition, and redox behavior in the La0.2Sr0.4CoO3 – PrO2 system; improvement of x-ray fluorescence and x-ray radiometric methods of rare heavy metals’ diagnostics in soils; difference in deformation characteristics by forming into the agglomerates in KCl/Sr2+ single crystals; the electrolytic dissociation of alkyl and aryl derivatives of glutaric acid; and thermodynamic consistency tests for experimental data of salt deposition in saline water.

Advances in Chemistry Research. Volume 28
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-63482-783-6. $190.00.
This new 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 advances in birun reactions; water structure modification by different perturbations; reduced graphene oxide/dimensionally controlled Fe2O3 composite; polyanion derivatives of (thia)Calix[4]Arene; prebiotic origin of biomolecules; intensification of nitric acid formation under the effect of hydrogen peroxide cavitation; numerical modeling of bubble growth in the solution gas drive process in heavy oil reservoir; and photosensitized generation of singlet oxygen from Re(I) complexes.

Advances in Chemistry Research. Volume 29
James C. Taylor
In series: Advances in Chemistry Research
Hardcover: 978-1-63483-594-7. $190.00.
e-book: 978-1-63483-611-1. $190.00.
The authors of this latest volume discuss recent advances in chemistry research, including chapters on lipidomics, an emerging area of biomedical science; ecological, social, cultural and economic impacts of biogas technology; the application of liquid chromatography-mass spectrometry techniques in the analysis of cinnamic acids; chloroform, administered orally as early as 1848, as a remedy for cholera in the nineteenth century; recently obtained information on oilseed development, production, chemical and physical features, processing, utilization and benefits; energy problems and the possible saving that can be achieved through the use of biomass sources energy; a comprehensive review of energy sources, the environment and sustainable development; the advantages, disadvantages and limitations of the methods for TBARS and MDA determination; and finally, regularities of coordination chemistry of iridium complexes are reviewed.

Continuous Process Dynamics, Stability, Control and Automation
Kal Renganathan Sharma
In series: Chemical Engineering Methods and Technology
This is a modern first course on process control, instruments, process dynamics and stability. MS Excel spreadsheets are used in order to obtain solutions to non-linear equations when needed and closed form analytical solutions are obtained using Laplace transforms and other methods. The solutions are presented in 210 figures and the book has 1319 equations. With an industrial controls market size of about 150 billion dollars and a chemical process industry market size of three trillion dollars, the practitioners can use this book to master techniques of P, proportional, PI, Proportional Integral, PD, Proportional Derivative feedback control, feedforward control, hybrid control, adaptive control, internal model control, ratio control, filtered real proportional integral derivative control, ANNs, artificial neural networks, SPC, and statistical process control. Control block diagrams are developed using MS Paint. Flavor for what is a continuous process
is given using 18 process flow diagrams. Be it a feedback control of temperature in a mixing tank or a neural network design for a distillation column, the details and the big picture are both given. Pioneers who made this area possible include people such as Maxwell, Galileo, Sherwood, Levenspiel, Kalman, Laplace, Fermat, Damkohler, Newton, Fourier, Fick, Michaelis, Menten, Monod, Staudinger, Ziegler, Natta, Flory, Peclet, Bode, Nyquist, Blot, Bessel, Bernoulli (both father and son!), Euler, Stokes, Mach, Reynolds, Prandtl, Nusselt, Wein, Hopf, Clapeyron, Clausius, Lorenz, and Kreh, who are mentioned where their theories were used in the analysis.

Current Applications of Chemometrics
Mohammadreza Khanmohammadi (Chemistry Department, Faculty of Science, IKIU, Qazvin, Iran)
In series: Chemistry Research and Applications
Hardcover: 978-1-63463-117-4. $170.00.
Known as a scientific domain in which the scientist would try to extract information from chemical systems by data-driven means, Chemometrics is a fast spreading field, being applied to solve both descriptive and predictive problems in experimental life sciences, especially in chemistry. It is defined as a highly interfacial discipline, which employs multivariate statistics, applied mathematics, and computer science via using methods frequently employed in core data-analytic, in order to address problems in chemistry, biochemistry, medicine, biology and chemical engineering. Initiated by analysts, now the discipline is widened by other chemistry discipline researchers and even those from medical and biological areas. Chemometric techniques are particularly heavily used in analytical chemistry and metabolomics, and the theoretical development of chemometric methods of analysis also continues to advance the state of the art in analytical instrumentation and methodology improvements. It is an application driven discipline, and thus while the standard chemometric methodologies are very widely used industrially, academic groups are dedicated to the continued development of chemometric theory, method and application development.

Formaldehyde: Synthesis, Applications and Potential Health Effects
Amy Patton
In series: Chemistry Research and Applications
Hardcover: 978-1-63482-412-5. $160.00.
Formaldehyde (FA) is a highly reactive compound with a toxic effect on all organisms due to non-specific interactions with proteins and nucleic acids. This substance is a hazardous air pollutant, and prolonged exposure to FA may cause serious health effects. This book discusses the synthesis of formaldehyde, its applications and potential health effects.

Natural Heterocycles: Extraction and Biological Activity
K. L. Ameta (Faculty of Arts, Science & Commerce, Mody Institute of Technology & Science (Deemed University) Lakshmangarh, Sikar, Rajasthan, India) and Saksit Chanthai (Department of Chemistry, Faculty of Science, Khon Kaen University, Thailand)
In series: Chemistry Research and Applications
Natural products in the plant kingdom offer a huge diversity of chemical structures that are the result of biosynthetic processes that have been modulated over the millennia through genetic effects. During the last few decades, research into biologically active natural heterocycles has advanced tremendously thanks to contributions from the fields of chemistry, life sciences, food science and material sciences. With the rapid developments in spectroscopic techniques and accompanying advances in high-throughput screening (HTS) techniques, it has become possible to isolate and then determine the structures and biological activity of natural products rapidly, thus opening up exciting new opportunities in the field of new drug development in the pharmaceutical industry. The present book covers the synthesis/extraction and biological evaluation of the naturally occurring heterocycles, providing cutting edge accounts of the fascinating developments in the isolation, structure elucidation, synthesis, biosynthesis and pharmacology of a diverse array of natural products.

New Developments in Liquid Crystals Research
Anka Trajkovska Petkoska (Associate Prof., Univ. St. Kliment Ohridski-Bitola, Technology & Technical Sciences-Vele, R. Macedonia) and Anita Trajkovska Broach (Scientific & Technical Consultant, CSI: Create. Solve. Innovate. LLC, Christiansburg, VA, USA)
In series: Chemistry Research and Applications
Liquid crystals (LCs) were discovered more than a century ago, but their profound impact was in the past four decades through their successful implementation into electronic devices that we are using every day. The research on liquid crystals actively continues in the 21st century and offers unlimited potential in various display or non-display applications. This book covers novel topics related to LCs and is intended for a wide range of researchers in both, academia and industry, from beginners to advanced level professionals in many scientific areas, viz. materials science and engineering, chemistry, physics, optics, photonics, nanotechnology, electrical engineering, and so on. The book contains topics on nematic and cholesteric LCs, in the form of films or particles, as well as modified LC behavior with variety of dopants, micron and nano-sized particles, microencapsulation of LC particles and modeling of their behavior under an externally applied field. Topics related to the effect on nanomaterials on LC behavior, as well as structural and magnetic properties of different types of iron-containing liquid crystals (metallo-mesogens) are covered, as well. Finally, an overview of different alignment technologies for nematic liquid crystals such as mechanical rubbing of polymer films, obliquely-deposited inorganic films, photo-irradiated, IB-bombardeed and patterned surfaces, are briefly reviewed along with several novel alignment concepts. The state of the art in respective fields related to LCs in each chapter is given by leading experts.

Nitric Oxide: Emerging Developments, Therapeutic Role in Disease States and Health Effects
Dominic M. Evans
In series: Chemistry Research and Applications
Hardcover: 978-1-63482-961-8. $110.00.
Nitric oxide (NO) is a pleiotropic free radical messenger molecule. There is enzymatic, non-enzymatic and bacterial production of NO in the human gut. This book examines the role of NO in human gastrointestinal and hepatic physiology and disease processes. Furthermore, it has long been recognized that nitric oxide is heavily involved in cell signaling. The authors’ examine the complex relationship between S-nitrosylation and cancer biology. Other chapters in this book explore the complexity of NO metabolic pathway
in order to better understand its role in the interaction between parasites and host cells; the most promising nanomaterials for the development of electrochemically or optical sensors for in vivo NO sensing and the NO pathway in Trypanosoma cruzi epimastigotes, associated with several diseases considered to be public health concerns.

**Phenylalanine: Dietary Sources, Functions and Health Effects**  
**Darlene Williamson**  
In series: *Chemistry Research and Applications*  
Hardcover: 978-1-63482-501-6. $110.00.  
Phenylalanine is an α-amino acid with the aromatic ring in the molecule, similar to other amino acids containing aromatic rings, like tyrosine and tryptophan. Phenylalanine is classified as nonpolar because of the hydrophobic character of the benzyl group as the side chain. This book discusses the dietary sources of phenylalanine. It also discusses its functions and effects on health.

**Physical, Chemical and Biological Treatment Processes for Water and Wastewater**  
**Tushar Kanti Sen (Department of Chemical Engineering, Curtin University, Western Australia, Australia)**  
In series: *Chemical Engineering Methods and Technology*  
Hardcover: 978-1-63483-396-7. $270.00.  
Water pollution occurs when toxic pollutants of varying kinds (organic, inorganic, radioactive and so on) are directly or indirectly discharged into water bodies without adequate treatment to remove such potential pollutants. Today’s sources of these potential pollutants, which cause high deterioration of freshwater quality, are city sewage and industrial waste discharge, human agricultural practices, industrial waste disposal practices, mining activities, civil and structural work activities and obviously natural contamination with climate change. When our water is polluted, it is not only devastating to the environment but also to human health. Therefore, development of water and wastewater treatment processes to alleviate water pollution has been a challenging and demanding task for engineers, scientists and researchers. Perhaps this is even more challenging for underdeveloped and developing countries, where water and wastewater treatment facilities, knowledge and infrastructure are limited. Water and wastewater treatment processes are broad and often multidisciplinary in nature, comprising a mixture of research areas including physical, chemical and biological methods to remove or transform various potential pollutants. This is in hopes to achieve acceptable water quality and satisfy governmental and environmental protection agencies’ laws and regulations. With these objectives, this book has been written in order to provide various research results and compilation and up-to-date development on the current states of knowledge and techniques in the broad field of water and wastewater treatment processes. Basically, this book will give a comprehensive understanding and advancement and application of various physical, chemical and biological treatment methods in the reduction of potential pollutants (inorganics/organics) from water and wastewater. There are a total 18 book chapters contributed by large number of expert authors around the world, covering the following main research areas: •Physical, chemical and biological water treatment processes such as adsorption, biosorption, coagulation/floculation, electrocoagulation, denitration, membrane filtration/separation, photocatalytic reduction, advanced oxidation, nutrients removal by struvite crystallization and nanotechnology •Physical, chemical and biological methods for municipal wastewater and industrial wastewater treatment plants such as primary-secondary sludge treatments, anaerobic digestions, aerobic treatment, activated sludge processes, dewaterability by floculants, pre-treatments of sludge and rheology of sludge in wastewater treatment •Various operational units/equipment and process control of wastewater treatment plant.

**Polyethers and Polyethylene Glycol: Characterization, Properties and Applications**  
**Joyce Williams**  
In series: *Chemical Engineering Methods and Technology*  
2015. 102 pp.  
Softcover: 978-1-63483-392-9. $82.00.  
The authors of this book examine polyethers and polyethylene glycol. The first chapter in particular gives a systematic, balanced and comprehensive summary of the main aspects of photosensitive polyethylene glycol. The second chapter is a focus on the biodegradation of polyethylene glycols (PEGs) and polyethoxylated surfactants. The third and last chapter of this book focuses on polyethylene glycol based phase change polymers for thermal energy
storage applications. Life nowadays is often centered around technologies, and it is of utmost importance to have the primary and secondary resources ready for present and future needs. This last chapter addresses these concerns and various procedures in which thermal energy can be stored and used.

Recent Advances in Layered Double Hydroxide-Based Composites: Synthesis, Properties and Potential Applications
Mohamed Reda Berber and Inas Hazza Hafez (Department of Chemistry, Faculty of Science, Tanta University, Tanta, Egypt)
Hardcover: 978-1-63482-099-8. $170.00.
e-book: 978-1-63482-100-1. $170.00.
Layered double hydroxides (LDHs) or hydrotalcites are inorganic clay materials with many promising properties. LDHs are a family of natural and synthetic compounds having the general formula [M(II)1-xM(III)x]2(2x+y)O(2x+y)H2O, where M(II) and M(III) represent divalent and trivalent metal ions, respectively, and y is the anion between the layers. They consist structurally of brucite-like [Mg(OH)2] layers, with a net positive charge due to partial substitution of M(II) by M(III). This positive charge is balanced by the anionic interlayer anion. Over the past few years, an increasing interest has been directed to the use of these clays as host materials, anion exchangers, delivery carriers and additives for polymers in order to create potential products with desirable physical and chemical properties. From the many significant research achievements and the many potential practical applications, it is assumed that the prospects for LDHs and their composites with the different organic and bioactive materials are very bright indeed and still more remains to be done in order to exploit completely their potential applications. In this book, we focus on the progress of the development of LDHs and their derivatives, including the synthetic techniques, the nanocomposite preparation routes, the factors affecting the physicochemical properties and how these properties affect the nanoparticle structure and the host-guest process. Furthermore, we summarize the current LDH potential applications and the possible future trends in agricultural, biological and medical researches e.g. the role of LDHs as reinforcements, as catalysts and catalyst supports in the field of catalysis, as a carrier in drug delivery and as host for a safe preservation of the bioactive material.

Tantalum: Geochemistry, Production and Potential Applications
Harry Reyes
In series: Chemistry Research and Applications 2015.
Hardcover: 978-1-63483-638-8. $110.00.
The activation reactions of organic substrates involving tantalum compounds and complexes as compared with other transition metals have a relatively recent history, and therefore they are by far the least studied. The first chapter presents research data published by the authors in the last five years, on the use of catalysts based on tantalum compounds and complexes. In Chapter 2, a systematic study has been undertaken of basic thermodynamic functions of tantalum through the whole range of its solid state. These functions include molar heat capacity, volume coefficient of thermal expansion, bulk modulus and molar volume. In the last chapter, the findings from electron-microscopic studies of copper-tantalum welded joints that do not possess mutual solubility are examined. Joints with both flat and wavy interface are included. Findings from the study of other metal-metal and metal-intermetallic joints that were obtained by the authors are used for comparison.

Trends in Polyoxometalates Research
Laurent Ruhlimann and Delphine Schaming (University of Strasbourg, Strasbourg Cedex, France)
The book attempts to make available the recent developments in polyoxometalate (POM) synthesis. The focus centralizes on the functionalization of POMs with covalently organic moiety (for instance, the use of exogenous ligands such as carboxylate or bisphosphonate). It also delves into the development of lanthanide POMs, or the formation of blackberry-like assemblies. Likewise, the properties (redox properties, magnetism, etc...), and its applications (homogeneous and heterogeneous catalysis, photocatalysis, photoelectrocatalysis and photovoltaic cell development, etc.) are also analyzed. This application concerns also the catalysis of H2O oxidation, photodegradation of pollutants, and reduction of cationic metal to form original nanoparticles. The use of polyoxometalates as catalysts for biologically relevant reactions is also considered. One of the other aims of the book is to highlight some recent developments and perspectives in the domain of materials and their applications. For instance, the use of POM-organic photosensitizer hybrids can also be achieved for application in the generation of photocurrent and the development of new types of solar cells. By combining POMs with electrically active materials, a variety of applications have been explored and several examples of POM-based electronic materials are presented in this book.

COMMUNICATIONS

Advances in Communications and Media Research. Volume 11
Anthony V. Stavros
In series: Advances in Communications and Media Research 2015.
Hardcover: 978-1-63483-283-0. $190.00.
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 constitute some of today’s leading analyses of the information industry. Together, these essays represent a needed foundation for understanding the present state and future development of the mass media. Current trends in communications as well as media impact on public opinion are studied and reported on. Topics include video conferencing via mobile devices in schools; managing the facility with lifecycle information; radio resource allocation in MU-MIMO LTE networks; a systemic modelling approach to interpreting service delivery; a morphogenetic approach to digital multimedia for college resources; and detection of spatially distributed signals by generalized receiver using radar sensor arrays in wireless communications.

COMPUTATIONAL BIOLOGY

Computational Materials and Biological Sciences
Kholmizo T. Kholmurodov (Leading Scientist, Frank Laboratory of Neutron Physics, Joint Institute of Nuclear Research, Dubna, Moscow Region, Russia)
In series: Materials Science and Technologies
Augmented reality (AR) is a technology that enables the user to see the real world, with virtual objects superimposed upon or composited with the real world. This book includes chapters focused on the following: the methodology of AR software for educational purposes; the use of augmented reality applications in the area of music education and music therapy; medical AR (in which the virtual entity is medical data); the role of AR in consumers' augmented experiences; and AR for cultural heritage, meaning the developments in multimedia technology to facilitate the learning experience in cultural heritage with the aid of improved user interaction methods.

Cloud 9: Learning in the Information Age
Luke Strongman (Senior Lecturer, Communication, School of Social Sciences, Open Polytechnic, Lower Hutt, New Zealand)
In series: Computer Science, Technology and Applications

Education is the harbinger of change; technological learning in the Information Age is at the cusp of that change, bringing new technologies, enhanced interfaces, dialogue, mobile learning and networked resources that shape content, sharing and distribution of information. These aspects influence the people and society of the “climate century”. The Information Age follows the production of data in previously unheard quantities. In the early days of widespread computer usage, we had a plethora of theories with only a paucity of data. Now, the data we produce is so large that it requires new analytics and new patterns of interpretative meaning. New methods of storage and analysis are needed in order to quantify ‘big data.’ But we live in uncertain times, in which even the climate—like financial markets is more volatile than it was in the pre-industrial second millennium, making technological adaptation ever more critical. This technological adaptation needs to occur in conjunction with an attitude which fosters a ‘caring curiosity’ for the biosphere which sustains us. Education is making technological adaptation ever more critical. This technological adaptation needs to occur in conjunction with an attitude which fosters a ‘caring curiosity’ for the biosphere which sustains us. Education is about gaining qualifications, but it is also about intrinsically compelling uncertainty in the quest for knowledge and techniques to enhance the experience of life and living. Cloud 9: Learning in the Information Age explores some of the methods and learning techniques and technologies that help us to do this.

Data Mining: Principles, Applications and Emerging Challenges
Harold L. Capri
In series: Computer Science, Technology and Applications
Hardcover: 978-1-63463-738-1. $110.00.

Data mining is an area of research where appropriate methodological research and technical means are experienced to produce useful knowledge from different types of data. Data mining techniques use a broad family of computationally intensive methods that include decision trees, neural networks, rule induction, machine learning and graphic visualization. This book discusses the principles, applications and emerging challenges of data mining.

Grid Computing: Techniques and Future Prospects
Jorge G. Barbosa and Inês Dutra (LIACC, Departamento de Engenharia Informática, Coimbra, Portugal)
In series: Computer Science, Technology and Applications
Hardcover: 978-1-63482-902-1. $110.00.
Horizons in Computer Science Research. Volume 11

Thomas S. Clary

In series: Horizons in Computer Science


Hardcover: 978-1-63482-499-6. $190.00.


This book presents original results on the leading edge of computer science research. Each article has been carefully selected in an attempt to present substantial research results across a broad spectrum. Topics discussed include weighted fusion of shape descriptor for robust shape classification; metaheuristics for curve and surface reconstruction; stream-based parallel computing methodology and development environment for high performance manycore accelerators; h-infinity recursive wiener fixed-interval smoother based on innovation approach in linear discrete-time stochastic systems; and virtual supercomputers as the basis of scientific computing.

Nature-inspired Computation

Mario D’Acunto (Consiglio Nazionale delle Ricerche, Istituto di Scienze e Tecnologie dell’Informazione, Pisa, Italy and Istituto di Struttura della Materia, Rome, Italy)

In series: Computer Science, Technology and Applications


Nature inspired computation is an old idea, first proposed in the early fifties by Alan Turing, one of the founders of computer science. Turing suggested computational models of pattern formation in living systems based on systems of coupled reaction-diffusion equations giving rise to spatial patterns due to self-organization of substances in chemical concentrations. Since the pioneering work by Turing, many optimization algorithms stimulated by real-world features have gained great popularity and impact, thanks to their efficiency in solving nonlinear design problems. Nature-inspired computation has permeated into almost all areas of sciences, engineering and industries, from data mining to optimization, from computational intelligence to signal processing, from image analysis and vision systems to industrial applications. The book provides an introductory tour of the most popular nature inspired computational strategies. The book is subdivided in two parts, briefly describing the inspiration and motivation of natural processes and phenomena, main players, design principles, the scope of each branch, current trends and open problems. In the first section, attention is focused on Artificial and Spiking Neural Networks (Chapter 2), Evolutionary and Genetic Algorithms (Chapter 3), and Swarm Intelligence algorithms (Chapter 4). In the second section, we present the emergent knowledge and technologies in Multiscale Nature processes (Chapter 5), Quantum Computing and Quantum Cryptography (Chapter 6), Encryption and Secure Communication system (Chapter 7), Image processing and Vision systems (Chapter 8), and finally on Nanophotonics Information (Chapter 9).

Network Coding and Data Compression: Theory, Applications and Challenges

Maryann Simmons

In series: Computer Science, Technology and Applications


Hardcover: 978-1-63483-185-7. $110.00.


In this book, new developments in network coding and data compression are examined. The first chapter proposes a new multipath transmission scheme that employs network coding at the source for
rate-delay adaptation. The second chapter presents the theory, applications, and challenges of a physical-layer network coding technique that promises significant improvement to the spectral efficiency and interference mitigation challenges in future heterogeneous cellular and wireless networks. In this third chapter, network and distributed turbo-coding based HARQ protocol are examined for wireless broadcasting systems. The last three chapters include in this book present three models that are based on Data Envelopment Analysis (DEA) methodology to appropriately evaluate the efficiency of multicast energy and further minimizes energy transmission in wireless networks without affecting the overall network performance; the development of methods of experimental statistical modeling of physical laws and the cascade scheme of data compression in multimode fiber systems.

New Developments in Evolutionary Computation Research
Sean Washington
In series: Computer Science, Technology and Applications
A common approach for solving simulation-driven engineering problems is by using metamodel-assisted optimization algorithms, namely, in which a metamodel approximates the computationally expensive simulation and provides predicted values at a lower computational cost. Such algorithms typically generate an initial sample of solutions which are then used to train a preliminary metamodel and to initiate an optimization process. One approach for generating the initial sample is with the design of experiment methods which are statistically oriented, while the more recent search-driven sampling approach involves a computational intelligence optimizer such as an evolutionary algorithm, and then uses the vectors it generated as the initial sample. This book discusses research and new developments on evolutionary computation.

New Developments in Expert Systems Research
Anna Bennett
In series: Computer Science, Technology and Applications
2015. 102 pp.
Softcover: 978-1-63482-906-9. $82.00.
e-book: 978-1-63482-918-2. $82.00.
Expert systems represent intelligent systems based on knowledge modeling, symbolic representation and its storage which allows for an unconventional method approach of complex applied analysis, sorting planning, design and diagnosis of problems in different areas of activity where an algorithmic description cannot be fully accomplished. Presently, the most intelligent systems from organizations are expert systems developed in accordance with fast prototyping methodology. Expert systems are used in a variety of areas, including, technical, banking, industrial and other professional areas. This book includes recent advances in expert systems research.

Earth Sciences
Electrodynamic Coupling of Lithosphere – Atmosphere – Ionosphere of the Earth
Valery Sorokin, Vitaly Chmyrev and Masashi Hayakawa (Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation (IZMIRAN), Russian Academy of Sciences, Moscow, Troitsk, Russia)
In series: Earth Sciences in the 21st Century
This monograph reviews the updated models of the influence of earthquake (EQ) preparation processes on the state of near-ground atmosphere and the ionosphere through the electric field and currents occurring in the global atmosphere–ionosphere electric circuit. An extensive comparison of results of satellite- and ground-based observations of DC electric fields, plasma parameters and electromagnetic wave perturbations prior to an EQ is made as a validation criterion of the models. It is shown that the most complete explanation of pre-EQ phenomena excited in the ionosphere and atmosphere and their interconnection can be provided by our electrodynamic model based on DC electric field generation due to the injection of charged aerosols into the atmosphere. An important feature of this model is that various EQ precursors are shown to be attributed just to a single cause, namely a perturbation of the conductivity electric current in the global circuit by the injection of charged aerosols into the atmosphere during seismic activity enhancement. This book is dedicated to scientists and researchers working in the field of atmospheric and ionospheric effects of large-scale natural and technological disasters. It also analyzes the development of methods for their forecasting with the use of space, aerial and ground-based observations. It will also be of potential interest to students specializing

CONSTRUCTION
Construction Materials Based on Industrial Waste Products
L.I. Dvorkin, O.L. Dvorkin (National University of Water Management and Natural Resources Use, Troitsk, Russia)
Rivne, Ukraine) and Y. Ribakov (Ariel University, Israel)
In series: Waste and Waste Management
2015.
Hardcover: 978-1-63483-486-5. $190.00.
Rational use of natural resources has gained importance in the last several years. Solving this actual problem in terms of national economy suggests developing non-waste technologies based on the complex use of raw materials. Such an approach simultaneously solves the problem of waste accumulation and avoids ecological damage. The term “industrial waste” itself becomes conditional for most material products, making them valuable and even scarce raw materials. At the same time, many industrial and municipal waste products that have big practical interest are still not investigated enough for different reasons. From this viewpoint, the possible popularization of using these waste products may be achieved. There are many publications concerned with using industrial waste products, including building materials production. However, in our opinion, preparing a book that summarizes general approaches still remains to be published. The present book deals with the main directions in using industrial and municipal waste products for producing effective construction materials; it reflects the ways for saving material and energetic resources by using mineral and organic raw materials. Efficiency of using traditional and new building materials based on secondary products (like metallurgy slags, ash and slag of power stations, etc.) is analyzed. Finally, the main technological parameters for using waste products of different industries are given, while various technical and economical features are presented.
in space science and physics of the atmosphere as well as the lithosphere-atmosphere-ionosphere coupling.

**Horizons in Earth Science Research. Volume 12**

*Benjamin Veress and Jozsi Szigethy*

In series: *Horizons in Earth Science Research*


Hardcover: 978-1-63463-855-5. $160.00.

This book presents and discusses research in the field of earth science, with a focus on the impact of internal wave breaking on ocean upper layer formation; geoechange; neutron clusters in the earth’s core; pyrite as a concentrator of gold in laboratory and natural systems; triggering-earthquakes (mL≥6.0) by rainfalls; and mineralogy and origin of rare-earth-element-bearing granites.

**Horizons in Earth Science Research. Volume 13**

*Benjamin Veress and Jozsi Szigethy*

In series: *Horizons in Earth Science Research*

2015. 244 pp.

Hardcover: 978-1-63482-550-4. $190.00.

This book presents and discusses research in the field of earth science, with a focus on the utilization of biomass for renewable bioenergy development; depressions of superficial deposit; nature and origin of granitic rocks; nature and technology of geothermal energy, clean sustainable energy for the benefit of humanity and environment; kinetic energy metamorphosis of rocks; an improved workflow towards real-time microseismic data processing; a brief overview of the Brazilian legislation and the radioactive wastes geologic repository project; detection of groundwater and soil contamination by hydrocarbons using radon as a tracer; genetic programming applied to chemical and environmental engineering; and a multisided analysis of living matter in an aquatic ecosystem.

**Horizons in Earth Science Research. Volume 14**

*Benjamin Veress and Jozsi Szigethy*

In series: *Horizons in Earth Science Research*


Hardcover: 978-1-63483-183-3. $190.00.

This book explores the most recent developments in Earth Science research. Chapters include research on the Indian Summer Monsoon and its impacts on society and the economy; geothermal heat pumps (GSHPs) or direct expansion (DX) ground source heat pumps as a highly efficient renewable energy technology; a comprehensive review of biomass energy sources, environment and sustainable development; aerodynamic landforms and their sedimentological characteristics and environmental implications; the mechanism of assymetric basin formation and evolution; a discussion on the development of inselbergs; the application of GREENSCOPE as a sustainability assessment tool for chemical processes; sedimentary basin as a cradle for biodiversity, focusing on the Buenos Aires Province in Argentina; deep sea depositional systems and their use as primary target for hydrocarbon exploration and development; the transformation of rivers during the process of certain human activities; and the results of field observations of small river basin waters, including their chemical composition.

**New Developments in Paleomagnetism Research**

*Lev V. Eppelbaum (Tel Aviv University, Dept. of Geosciences, Tel Aviv, Israel)*

In series: *Earth Sciences in the 21st Century*

2015. 201 pp.

Hardcover: 978-1-63483-129-1. $190.00.

Paleomagnetic field analysis occupies a separate place in the variety of studied physical parameters, since it assists us in obtaining specific ‘stamps’ of past geomagnetic field configurations. It is well-known that life on Earth and all geological-environmental processes occur in the changing geomagnetic field (the Earth’s magnetic field intensity is now decreasing). Geological-geophysical records indicate that hundreds and hundreds of Earth’s magnetic field reversals have occurred.

Paleomagnetic research has revealed information about ancient (from hundreds to billions years ago) magnetic field changes, which reflects definite geological, archaeological, cosmological and environmental events of that time. Some geodynamic and tectonic information derived from paleomagnetic field analysis cannot be obtained by any other geophysical or geological methods. This book reveals the current understanding of leading scientists studying paleomagnetic on new approaches and results in different regions of the world. Three main issues are presented in the book: a comparison of the Earth’s geomagnetic field and the Earth’s biota evolution processes over the last 2.5 billion years (Chapter 1); combined paleomagnetic mapping examples of some areas of the Eastern Mediterranean (Chapter 2); various aspects of archaeomagnetic artifact examination, including advanced mathematical approach applications (Chapters 3 and 4); and utilization of geomagnetic data from the past for historical reconstruction of China and Mesoamerica (Chapter 5). The five chapters present results of investigations of scientists from different scientific schools and demonstrate the application of various methods and approaches to analyze ancient and comparatively recent geomagnetic fields. Undoubtedly, these results are interesting both from theoretical and practical points of view. This book is intended for students of corresponding specialties, geologists, geophysicists, archaeologists and environmental scientists. This book can also be of interest to the general public interested in paleomagnetism, archaeology, geology and geophysics.

**Volcanic Ash: Chemical Composition, Environmental Impact and Health Risks**

*Danielle Graver*

In series: *Earth Sciences in the 21st Century*

2015. 81 pp.

Softcover: 978-1-63463-597-4. $82.00.
e-book: 978-1-63463-605-6. $82.00.

Ash produced as a consequence of explosive volcanic eruptions can cause multiple hazards both close to the volcano and at great distances. Explosive volcano eruptions often release volcanic plumes into the atmosphere, which consist of tephra (submillimeter-sized rock particles), water vapor and other gases such as carbon dioxide (CO2), sulfur dioxide (SO2) and hydrogen sulfide (H2S). Particles from volcano eruptions are transported by wind to thousands of kilometers away, or even over 10,000 km from their source for some fine particles. This book discusses the environmental impact and health risks volcanic ash poses as well as its chemical composition.

**ECOLOGY**

**Fabaceae: Classification, Nutrient Composition and Health Benefits**

*Wayne Garza*

In series: *Plant Science Research and Practices*


Hardcover: 978-1-63482-200-8. $110.00.

The leguminous plant Fabaceae, contains fibers, vitamins and mineral constituents. In traditional medicine, several parts of the family of Fabaceae are responsible and useful for the treatment of various ailments. The authors explore the medicinal and chemical
properties of Fabaceae and its different uses. The Oxytropis campestris complex is explored as well. The authors also review the detection of plant based adulterants in plant food products via the use of DNA based methods and markers. Numerous methods based on DNA analysis have contributed immensely in the food industry to monitor adulterations of food products of plant or animal origin.

Hypericum: Botanical Sources, Medical Properties and Health Effects
Howard R. Davis
In series: Plant Science Research and Practices
Hardcover: 978-1-63482-701-0. $160.00.
The genus Hypericum is the most important of the Hypericaceae family, widespread all over the world, with about 400 species. It is a herbaceous perennial plant native to Europe and Asia. The authors focus on Hypericum perforatum L. one of the most well-known species, which is widely diffused in dry meadows, in forest clearances, along tracks and roads, from the sea level up to 1600 m of elevation. Also known as St. John's wort, the applications of Hypericum perforatum L are reviewed. Literature data on ethnobotanical practices, main active constituents, pharmacological activity and applications of Hypericum species throughout the world are discussed as well. Other chapters review cadmium (Cd) and lead (Pb) concentration in the herbs of Hypericum species; hyperforin as the main active component of the Hypericum perforatum extract and its medicinal uses; and finally, Hypericum sinaicum is discussed, one of the rarest species. In particular, the distribution of species is addressed and the environmental factors affecting it.

Jasmonic Acid: Biosynthesis, Functions and Role in Plant Development
Lucille Morrison
In series: Plant Science Research and Practices
Jasmonic acid (JA) is an essential phytohormone for plant development and stress response. It not only acts as the regulatory molecule in root elongation, germination, pollen production, fruit ripening and plant senescence, but also acts as the signaling compound activating plant defenses against pathogens, herbivory, wounding and abiotic stress. This book discusses the biosynthesis, functions and the role jasmonic acid has in plant development.

Luteolin: Natural Occurrences, Therapeutic Applications and Health Effects
Alexis J. Dwight
In series: Plant Science Research and Practices
Hardcover: 978-1-63482-025-7. $110.00.
Luteolin belongs to a group of naturally occurring compounds called flavonoids that are found widely in the plant kingdom. Luteolin is widely present in many fruits, vegetables and medicinal herbs. It has many beneficial health effects, including antioxidant, anti-inflammatory, anti-proliferative, proapoptotic, and anti-angiogenic. This book discusses the natural occurrences of luteolin, as well as the therapeutic applications and health effects.

Nutrition of Crop Plants
M. A. Baset Mia, Ph.D. (Professor of Crop Botany, Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur, Bangladesh)
In series: Plant Science Research and Practices
Hardcover: 978-1-63482-803-1. $190.00.
Crop nutrition is an essential discipline of plant science of crop production. The importance of crop nutrition for increasing yield and the quality of crops is difficult to explain. In simple words, crop nutrition is the study of uptake and utilization of elements for the growth and development of crop plants. This book includes the classification of essential nutrients in various aspects with special emphasis on the physiological and biochemical functions, and their uptake process through the membrane. Much emphasis has been given on the root structure and rhizosphere in relation to nutrient uptake and their assimilation in the cell mechanism. This book is intended to establish a thorough understanding of plant nutrition. It is a textbook for agriculturists, researchers in the field of crop science, students’, and academicians and for crop cultivators as a whole. Finally, it is a consolidated book, comprising different areas of plant nutrition and the stakeholders will benefit from a book like this.

Solanum Lycopersicum: Production, Biochemistry and Health Benefits
Tadahisa Higashide (Senior Researcher, NARO Institute of Vegetables and Tea Science, National Agriculture and Food Research Organization, Kannondai, Tsukuba, Ibaraki, Japan)
In series: Food Science and Technology
2015.
Hardcover: 978-1-63483-021-8. $190.00.
Solanum lycopersicum is the scientific name for cultivated tomatoes. Tomatoes are produced and consumed worldwide. Many scientists are investigating such aspects as production, post-harvest, nutritional components, and health benefits of tomatoes. Moreover, Solanum lycopersicum is one of the model plants in recent molecular biology as Arabidopsis. This book consists of recent research topics written by tomato experts in a wide range of scientific fields. In tomato production, improvements of yield and efficiency have been investigated. Dry matter production influences these yields and efficiencies of tomato production. Higashide reviewed factors such as photosynthesis, light interception by plants, and environmental conditions that pertain to dry matter production. Additionally, to improve crop production in greenhouses, Li and Yang reported that the diffusion of light has advantages such as light distribution, less photo-inhibition, and lower leaf temperature. Recent molecular biology has clarified genetic and metabolic aspects on tomato plants. Matsuo and Imanishi described recently advanced plant hormone research, especially focused on the mechanism of the tomato fruit set and development. Molecular biological findings on tomato plants were directly related to the breeding and production innovations of tomatoes. Furthermore, Ohshima and Hayashi reviewed DNA markers, quantitative trait locus (QTL) mapping for breeding tomatoes. Higashide reviewed an increase of yield and quality in Dutch and Japanese cultivars, respectively, and the yield improvement by using Japanese cultivars. Nakano described an outline and scope of nutrient management on the advanced protection and cultivation of tomatoes. Kinoshita and Masuda introduced their new hydroponics system using root-proof capillary wicks. Pinheiro et al. reviewed factors during postharvest life that influenced the physical-chemical qualities and nutritional composition of tomato fruits. Domínguez et al. explained roles of flavonoids in the cuticle of tomato fruits. And finally, Ando reviewed the taste compounds of tomatoes, and reported on the
analysis of major taste compounds in Dutch and Japanese cultivars using capillary electrophoresis, as well as the accumulation of umami-enhancer guanylic acid by cooking tomatoes.

**EDUCATION**

Mobile Learning: Trends, Attitudes and Effectiveness
*Mohamed Hamada (Senior Associate Professor, University of Aizu, Japan)*

In series: *Education in a Competitive and Globalizing World*


Hardcover: 978-1-63483-429-2. $190.00.

e-book: 978-1-63483-465-0. $190.00.

Mobile learning (m-learning) can be seen as learning across multiple contexts, through social and content interactions, using personal electronic devices such as handheld computers, smart devices (e.g. Smartphone and tablets), notebooks, mobile phones, etc. It reflects how society and its institutions can accommodate and support an increasingly mobile population. M-learning is convenient in that it is accessible from virtually anywhere and at any time. Like other forms of e-learning, m-learning is also collaborative. Sharing is almost instantaneous among everyone using the same content, which leads to the reception of instant feedback and tips. This highly active process can help in improving students’ performance and motivation. M-learning also brings strong portability by replacing books and notes with mobile devices, filled with tailored learning content. The challenges that face e-learning and m-learning systems come from the growth rate of students, education contents, services that can be offered and resources made available. These challenges include: optimizing resource computation, storage and communication requirements, dealing with dynamic concurrency requests, etc. Such challenges highlight the necessity of the use of a platform that meets scalable demands and cost control. This environment is cloud computing. The cloud computing environment rises as a natural platform to provide support to e- and m-learning systems. The book contains a variety of relevant topics. The first chapter gives an overall view on mobile learning. The next three chapters discuss the psychological issues related to mobile learning and learners' motivation in addition to the contextualization of mobile learners. The following two chapters introduce some theoretical framework for mobile learning and its cloud-based applications in addition to a mobile-based recommendation system. The last four chapters focus on case studies of mobile learning on natural language education.

**ELECTRICAL ENGINEERING**

Reversible Logic Circuits
*Ri-Gui Zhou (College of Information Engineering, East China Jiaotong University, China) and Naihuan Jing (Center of Quantum Algebra, South China University of Technology, China and Department of Mathematics, North Carolina State University, USA)*

In series: *Electrical Engineering Developments*


Hardcover: 978-1-63463-421-2. $95.00.

e-book: 978-1-63463-626-1. $95.00.

In the conventional combination of logic circuits, energy loss is an important consideration. Research on reversible logic circuits are of interest to power minimization having applications in low power CMOS design, DNA computing, bioinformatics, nanotechnology, information security and so on. In this book, a novel reversible quantum full adder, reversible BCD adder, subtraction and quantum No-Wait-Carry adder and a novel reversible quantum array multiplier is introduced. At the same time, the model of this array multiplier based on CMOS technology and pass-transistor is also discussed. Reversible arithmetic logic unit and a novel 1-bit reversible comparator and another novel 4-bit reversible comparator are described as well. Finally, this book devotes itself to the theory and simulation of QCA, introduces a study of quantum states in semi-classical simulation and the genetic simulated annealing simulation method based on the polarized rule.

**ENERGY**

Advances in Energy Research. Volume 21
*Morena J. Acosta*

In series: *Advances in Energy Research*


Hardcover: 978-1-63463-823-3. $190.00.


This book highlights recent advances in energy research. The chapters included in this volume include research on nuclear power reactors, specifically small modular reactors (SMRs) for electricity generation; stakeholder participation in local energy-planning and the possible ways of integrating stakeholder participation in current energy planning practices; a comprehensive review of energy sources, and the development of sustainable technologies to explore these energy sources; the modeling and analysis of a liquefied natural gas (LNG) fired CCHP system, compared to the conventional method of generating useful energy, which is assumed to be a centralized electricity-only power plant; electrospray deposition method for
fabricating organic photovoltaic cells; the application of energy-saving, passive strategies in occupied school building spaces; an evaluation of energy consumption in buildings with complex topology equipped with a HVAC system; and an evaluation of solar thermal technologies and applications.

Advances in Energy Research. Volume 22
Morena J. Acosta
In series: Advances in Energy Research 2015.
Hardcover: 978-1-63483-230-4, $190.00.
e-book: 978-1-63483-612-8, $190.00.
This latest volume includes contributions on the latest advances in energy research. Chapters include research on a Multi Agent System (MAS) design for fault location, isolation and service restoration (FLISR) in power distribution systems; coalbed methane (CBM) reservoirs in China, their properties and strategies in which to reduce formation damage; a comprehensive review of energy sources; energy efficiency and ways to alleviate environmental impacts of the building sector; small-scale energy converters; current conditions, limitations and opportunities of existing carbon dioxide emissions; progress on tidal current technology in the UK and elsewhere as well as key design issues and options; and finally, the occurrence and properties of Mongolian bituminous coal which is presented and discussed in relation to its characteristics, petrography, pyrolysis and minerals.

Challenges Facing the Nuclear Power Industry
Renee Olson
Hardcover: 978-1-63483-618-0, $120.00.
The nuclear industry is in a state of flux. Proclamations of a nuclear renaissance have given way to predictions of the industry’s ultimate decline, and now, in the face of new carbon emissions regulation, renewed optimism for the future. Yet, nuclear plants are currently at risk due to electricity market designs and competition with low priced natural gas. This book attempts to provide clarity to the potential outlook for the nuclear industry by examining the factors that influence it. It includes an analysis of recent trends affecting nuclear power generation while focusing on the specific potential impact of the EPA’s proposed Clean Power Program on nuclear power.

Coal-Fired Power Plants: Efficiency Improvement Options
Sharon Phillips
Hardcover: 978-1-63483-620-3, $120.00.
e-book: 978-1-63483-621-0, $120.00.
Coal has long been the major fossil fuel used to produce electricity. The existing coal-fired power generation fleet consists of over fifteen hundred separate units ranging in size from just a few megawatts (MW) to thirteen hundred (1,300) MW. Together these coal-fired power plants (CFPPs) constitute over 300 gigawatts (GW) of installed electric generating capacity and are responsible for generating more electricity than any other fuel type in the United States; between thirty-seven and fifty percent of the total kilowatt-hours (kWh) produced annually during the last decade. However, coal-fired electric power plants are one of the largest sources of air pollution in the United States, with greenhouse gas (GHG) emissions from burning of fossil fuels believed to be the major contributor to global climate change. This book discusses efficiency improvement options of coal-fired power plants.

Department of Energy Funded Inventions: Disclosure and Interest Protection Issues
Peter Reed
Softcover: 978-1-63483-259-5, $62.00.
The U.S. Department of Energy (DOE) provides funding to contractors for research and development of new technologies. To incentivize participation in federal research projects and promote the use of federally funded inventions, the 1980 Bayh-Dole Act and other laws and regulations allow contractors receiving federal research and development funds to retain ownership of inventions they create so long as they adhere to certain requirements, including disclosing inventions developed with agency funding. DOE’s ability to protect its interests in these inventions—including their utilization and domestic manufacture—depends on its knowledge of their existence. This book examines DOE funding for contractor research for fiscal years 2009 through 2013 and how DOE ensures that contractors disclose agency funded inventions; the challenges DOE faces in ensuring invention disclosure and actions it is taking to address them; and the challenges DOE faces in protecting its interests in these inventions and the actions it is taking to address them. Furthermore, the authors of this book review the policies and procedures used to determine whether march-in authority should be exercised in the Bayh-Dole Act; how the march-in authority has been used; and what barriers and disincentives have been encountered in exercising the march-in authority.

Gas Biofuels from Waste Biomass: Principles and Advances
Zhidan Liu (Laboratory of Environment-Enhancing Energy (E2E), College of Water Resources and Civil Engineering, China Agricultural University, Beijing, China)
Hardcover: 978-1-63483-192-5, $190.00.
e-book: 978-1-63483-210-6, $190.00.
Waste biomass includes agricultural residues, livestock wastes, municipal wastes and industrial organic wastes. It should be utilized or otherwise, it will cause the pollution of water, soil and even the atmosphere. Gas biofuels have attracted growing attention as a renewable and clean energy carrier. Gas biofuels include biogas, biohydrogen and its mixture i.e. bioethane, which can be produced via anaerobic fermentation or other processes from waste biomass. This book focuses on the principles of gas biofuels in terms of types of biofuels, biomass species, and reactor configuration and production pathway. A number of books focus on the production of biogas or biohydrogen alone. In comparison, this book emphasizes the interactions and common knowledge of both. In addition, the potential of new technologies, such as microbial electrochemical technologies, and two-stage fermentation on gas biofuel production are highlighted and specifically discussed based on the authors’ research basis. This book provides a state-of-the-art technological insight into the production of gas biofuels from waste biomass. Specifically, this book consists of three parts. In Part I, the principles for gas biofuels production from waste biomass, including biogas production (Chapter 1) and biohydrogen production (Chapter 2). Part II focuses on the technical advances on gas biofuels production. Pre-treatment of biomass was firstly introduced in Chapter 3, whereas the advances of biogas production from high-solid wastes were discussed in Chapter 4 and Chapter 5. In comparison, biohydrogen production is reviewed not only through dark fermentation (Chapter 6) but also emerging microbial electrochemical technology (Chapter 7). The co-production of biohydrogen and biomethane is reviewed in Chapter 8. In addition to the utilization of carbon and hydrogen stored in biomass, nutrients recycling through algae technology is discussed in Chapter 9. Part III
discusses the scale-up and industrialization of biofuels. An industrial case is introduced to analyse the bottlenecks and perspectives for development of gas biofuels.

**Producing Oil and Natural Gas from Shale: Economic and Budgetary Effects**

**Joelle Bolton**

In series: *Energy Science, Engineering and Technology*


Hardcover: 978-1-63482-126-1. $120.00.

e-book: 978-1-63482-127-8. $120.00.

Recent advances in combining two drilling techniques, hydraulic fracturing and horizontal drilling, have allowed access to large deposits of shale resources—that is, crude oil and natural gas trapped in shale and certain other dense rock formations. As a result, the cost of that “tight oil” and “shale gas” has become competitive with the cost of oil and gas extracted from other sources. Virtually nonexistent a decade ago, the development of shale resources has boomed in the United States, producing about 3.5 million barrels of tight oil per day and about 9.5 trillion cubic feet (Tcf) of shale gas per year. This book discusses the economic and budgetary effects of producing oil and natural gas from shale. It also examines the production, infrastructure, and market issues in U.S. shale gas development; and potential budgetary effects of immediately opening most federal lands to oil and gas leasing.

**Recent Advances on Energetic Materials**

**Gurdip Singh (Chemistry Department, DDU Gorakhpur University, Gorakhpur, India)**

In series: *Energy Science, Engineering and Technology*


Hardcover: 978-1-63482-101-8. $185.00.


The book contains ten chapters. Chapter 1 deals with classification of propellants and explosives. Mechanism of thermal decomposition of ammonium perchlorate (AP) has been given in Chapter 2. Synthesis and characterization of various types of nanomaterials such as oxides, ferrites, coxalites, oxalates, moni, bi and tri metals of transition metals, and oxides of lanthanides have been discussed in Chapter 3. These have been found to be potential thermal decomposition and burning rate catalysts for AP and composite solid propellants. The preparative methods for various types of nanoenergetic compounds have been described in Chapter 4. Thermolysis of various types of nitrate, perchlorate, and NTOate salts has been discussed in Chapters 5-7. Preparation and characterization of transition, lanthanoids metal nitrate, and perchlorate complexes with ligand of various amines have been described in Chapters 8-10. In each group of compounds, the structural properties of the individual compounds are determined by gravimetric, IR and NMR studies. For those compounds which gave crystals, X-ray crystallography technique was undertaken to determine their structures. The results obtained from thermoanalytical and kinetic investigations related to the thermal decomposition, ignition/explosion and combustion of the compounds have also been described. The author hopes this book will be of interest to everyone involved with energetic materials irrespective of their background. This will prove useful to the serious college students as a text, to the engineers interested in the broad aspects of aerospace, and as an introduction to the propulsion of missiles or space vehicles. This book will be helpful to the people working in R&D laboratories, Universities, Institutes, Production agencies, Forensic laboratories, Armed forces (Army, Nvy and Air Force), Quality assurance, Homeland securities, Chemical Industries etc. This book will be of immense use to organizations dealing with the production of commercial explosives and allied chemicals. It is hoped that this compilation of work will serve to stimulate more interest and promote further progress in the research into the properties and applications of these family of compounds reported in this book.

**U.S. Energy Production and Consumption: Major Factors, Influences, and Trends**

**Kendra Fletcher**

In series: *Energy Policies, Politics and Prices*


Hardcover: 978-1-63482-182-7. $120.00.

e-book: 978-1-63482-183-4. $120.00.

Federal energy policy since the 1970s has focused primarily on ensuring a secure supply of energy while protecting the environment. The federal government supports and intervenes in U.S. energy production and consumption in various ways, such as providing tax incentives, grants, and other support to promote domestic production of energy, as well as setting standards and requirements. This book provides information on U.S. production and consumption of fossil, nuclear, and renewable energy from 2000 through 2013 and major factors, including federal activities, that influenced energy production and consumption levels. It also provides information on other federal activities that may have influenced aspects of U.S. energy production and consumption from 2000 through 2013 but were not targeted at a specific energy source, as well as information on federal research and development.

**Unconventional Natural Gas Development: Environmental Impacts**

**Jeremy P. Collins**

In series: *Energy Science, Engineering and Technology*


Hardcover: 978-1-63482-128-5. $145.00.


The recent growth in unconventional natural gas production has also produced a profusion of publications on the exploration, development, production, infrastructure, economics, uses, and environmental impacts of these resources. This book summarizes the current state of published descriptions of the potential environmental impacts of unconventional natural gas upstream operations within the Lower 48 United States. It also examines the technology, impacts and regulations of hydraulic fracturing, which is a key technique that has enabled the economic production of natural gas from shale deposits, or plays.

**Unconventional Oil and Shale Gas: Growth, Extraction, and Water Management Issues**

**Amber L. Tuft**

In series: *Energy Science, Engineering and Technology*


Hardcover: 978-1-63482-130-8. $120.00.

e-book: 978-1-63482-131-5. $120.00.

The United States has seen resurgence in petroleum production, mainly driven by technology improvements—especially hydraulic fracturing and directional drilling—developed for natural gas production from shale formations. Application 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. 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 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 and Environmental Protection Agency (EPA) actions. This book also provides a technological assessment of existing and emerging water procurement and management practices in shale energy producing regions of the United States.
Advances in Engineering Research. Volume 9
Victoria M. Petrova
In series: Advances in Engineering Research
2015. 185 pp.
Hardcover: 978-1-63482-305-0. $160.00.
This book covers leading-edge research in a cross-section of fields centering on engineering applications including current research data on graphene as a solid state diffusion barrier for microelectronics; improvements of reinforced silica aerogel nanocomposites thermal properties for arctic coupling reactions under environmentally-friendly conditions; combustion synthesis of nanocrystalline nickel oxides; materials for 99Mo/99mTc generator columns; fundamentals of singlet oxygen, ozone, and hydrogen peroxide for engineering; and coordinate geometric generalization of the spherometer and cylindrometer.

Advances in Engineering Research. Volume 10
Victoria M. Petrova
In series: Advances in Engineering Research
Hardcover: 978-1-63482-784-3. $190.00.
This book covers leading-edge research in a cross-section of fields centering on engineering applications including current research data on structure-functional design of new catalysts for engineering of productive and environmental catalysis processes; influence of friction stir processing on the surface modification of the titanium alloy; innovative process energy saving based on enhanced process integration of low carbon emission and continuous production; environmentally-friendly conditions; combustion synthesis of nanocrystalline nickel oxides; materials for 99Mo/99mTc generator columns; fundamentals of singlet oxygen, ozone, and hydrogen peroxide for engineering; and coordinate geometric generalization of the spherometer and cylindrometer.

Advances in Engineering Research. Volume 11
Victoria M. Petrova
In series: Advances in Engineering Research
Hardcover: 978-1-63483-380-6. $190.00.
This book focuses on the latest developments in the field of engineering. The first chapter presents a state-of-the-art review on the potential issues to be solved in the design, manufacture and maintenance of the full ocean depth manned cabin. Only in the past 100 years, has the technological capability matched the human desire to deep dive into the ocean and discover its true mysteries. The authors of the second chapter focus on a different type of engineering and proposes a design method of observers used in induction motor systems by utilizing non-singular terminal sliding-mode control. The third chapter is focused on styrene, a high value chemical widely used as feedstock for the commercial manufacture of a large variety of polymers, synthetic rubbers and polymeric resins. The poorest-vanadium catalyst is the most promising for producing styrene without steam, being the most active and selective to styrene. Chapter Four presents a straightforward compromising methodology of dynamic economic and emission active-reactive optimal power flow (AROPF). The remaining chapters of this book provide a review and discussion along with practical guidelines on the application of metamodels in real-world optimization problems; a framework which employs multiple metamodels concurrently, thereby benefiting from the different approximations; a metamodel-assisted framework which adds a dimensionality-reduction component based on variable selection; a new, simple and efficient method for modifying motor fuel through the dynamic cavitation of motor fuel with hydrogen peroxide using a dynamic cavitation reactor; and a discussion on the principles of different Ensemble Methods (EMs) (bagging, boosting, random subspaces, combined approach) by illustrating their applications in the field of feature selection for linear regression.

Low Power High Speed CMOS Multiplexer Design
Shyam Akashe and Khushboo Mishra (Electronics & Communication Engineering, ITM University, India)
In series: Electrical Engineering Developments
2015. 147 pp.
Hardcover: 978-1-63463-322-2. $125.00.
This book proposes the reversible logic Multiplexer and also demarcates between reversible and irreversible logic Multiplexers. For power reduction in future computing technologies, reversible logic is a very productive approach of logic synthesis. The purpose of this book is to reduce power and area of 2:1 MUX, 4:1 MUX and reversible logic while maintaining the viable performance. The diverse configurations are designed using different topologies of 2:1 MUX and 4:1 MUX such as CMOS based MUX, transmission gate and pass transistor. The editors propose a new application of GDI (Gate-Diffusion Input) circuits to Reversible logic multiplexer with its Garbage input and output. The novel proposed design technique will consume less power than the other conventional gate. Reversible logic circuit has displayed less power dissipation in recent years. Additionally, this GDI cell technique decreases the power of the circuit, delay, Power-Delay Product (PDP) and it also compacts the frequency. The device scaling is partial as the power dissipations is more optimized in terms of delay, frequency jitter, bandwidth power supply, frequency and duty cycle of the signal and also establishes the noise of the circuit. In the reversible logic design, the GDI is efficient in lower delay, low power and low leakage current.

Project Based Learning on Engineering:
Foundations, Applications and Challenges
Juan Valenzuela-Valdés and Pedro Pardo Fernández
(Departamento de Ingeniería de Sistemas Informáticos y Telemáticos, Centro Universitario de Mérida, Universidad de Extremadura, Mérida, Spain)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63482-217-6. $110.00.
There is a worldwide interest today in improving the quality of education. Improving teaching for a more professional world is necessary; in fact, the application of the European Higher Education has encouraged the use of methodologies increasing learning activity in recent years. One of the most popular active learning methods is project-based learning or problems based learning (PBL). Despite this methodology being developed more than 30 years ago, it has shown to be one of the most suitable methodologies for obtaining meaningful learning. It also has the advantage of being combined with other modern learning techniques such as e-learning and m-learning. The relevance of this technique and a collaboration of personal experience have led to this book. This book contains three distinct parts. The first part will contain the basics of this PBL and a review of the literature of the last years. The second part will contain practical examples of successful implementations of PBL conducted in different universities. In the last part, novel implementations of PBL combined with different methods of distance learning will be exposed, i.e PBL combined with e-learning, PBL combined with synchronous classroom and PBL.
combined with m-learning. Finally, in the last chapter, the conclusions of this research are outlined.

**ENVIRONMENT**

**Arid and Semi-Arid Environments: Biogeodiversity, Impacts and Environmental Challenges**

*Gabriel Ferguson*

In series: *Environmental Science, Engineering and Technology*  
e-book: 978-1-63483-410-0. $110.00.

Water is the most limiting factor for irrigated agriculture in arid and semi-arid areas of European Mediterranean countries. In this book, the authors' explore the different mechanisms and robust tools to monitor plant-water status, with the aim of keeping crops within a certain threshold of moderate-to-mild water stress. Other chapters include research on agricultural techniques in semi-arid environments that would benefit the surrounding environment and impact soil management. The third chapter includes site-specific documentation of landforms developed in the Ejina Basin in Central Asia and its implications for late Quaternary landscape evolution and palaeoenvironmental change. The fourth chapter focuses on the links between economic value addition, demographics, personal income and entrepreneurship in selected South African towns. The last chapter reviews thirty years of ecological monitoring in Algerian arid rangelands.

**Coastal Ecosystems: Experiences and Recommendations for Environmental Monitoring Programs**

*María-Teresa Sebastiá (Universitat Politècnica de València, Spain)*

In series: *Environmental Science, Engineering and Technology*  
2015. 228 pp.  
Hardcover: 978-1-63482-151-3. $190.00.  

The aim of this book is to assist environmental authorities and technicians in the design of effective environmental monitoring programs. Consensus exists that any good management program must be able to distinguish between natural variability and changes induced by anthropogenic activities. To achieve this goal, it is necessary to implement continuous monitoring programs. Sampling design is critical for the success of these programs due to the high spatio-temporal variability of coastal ecosystems. No potential sources of pollution should be neglected in sampling design, such as submarine groundwater discharge (SGD), which has been recognized as an important link between the continent and the ocean. Additionally, sampling design should avoid Type II decision errors (false negatives), which means a problem is not found when in fact it does exist. Being able to detect undesired effects is indispensable to adopt preventive and corrective measures. It is essential that these programs change their primarily anthropocentric focus to an ecocentric focus. The need to distinguish between natural variability and changes induced by anthropogenic activities is a priority that these programs change their focus from a primarily anthropocentric to an ecocentric focus. The need to cover large spatial regions periodically makes necessary the development and application of new technologies such as remote sensing data into monitoring programs. The development of environmental “diagnostic” tools to allow early warning detection of pollution exposure, such as biomarker measurements in bioindicator organisms, are also valuable tools for environmental monitoring, which are examined in this book.

**Enhanced Electrochemical Advanced Oxidation Processes for Wastewater Sludge Stabilization and Reuse**

*Gagik Badalians Gholikandi (Faculty of Water Engineering and Environment, Shahid Beheshti University, A.C., Tehran, Iran)*

In series: *Waste and Waste Management*  
2015. 177 pp.  

The growing quantities of waste sludge generated in municipal and industrial wastewater treatment plants containing various organics and other contaminants require novel treatment technologies that are capable of achieving significant removal efficiencies and producing reusable sludge products. As a response, a large variety of advanced oxidation processes (AOPs) have been investigated to remove the present contaminants from wastewaters and limited cases of waste sludge. Multidisciplinary researches have been carried out accordingly. In this regard, electrochemical advanced oxidation processes (EAOPs) have emerged as novel environmental-friendly and effective treatment technologies for the elimination of several organic contaminants. Considerable validation of these methods has been performed at both the bench-scale and pilot-scale. Although a promising new technology, the mechanisms involved in the oxidation of organic compounds during electrochemical advanced oxidation processes and the corresponding environmental impacts have not been completely addressed until now. This book aims at the electrochemical advanced oxidation processes occurrence from different points of view, describing its related technologies, providing an assessment of the development and efficiency, and highlighting various aspects of waste activated sludge stabilization and reuse accordingly in five chapters. In the first chapter a brief review to waste sludge stabilization and reuse has been presented. The second chapter provides an overview to advanced oxidation processes. The third chapter describes the various electrochemical advanced oxidation methods. Chapter four presents and discusses the own experimental investigations results employing the Fered-Fenton EAOP. The modeling of the results of the own experimental studies results by means of Taguchi method and artificial neural networks has been performed in the fifth chapter. The main goal of this book is to gather different updated viewpoints according to the electrochemical advanced oxidation processes and to provide the own experimental studies results accordingly in order to present students, researchers, engineers and managers with useful knowledge in this regard.

**Environmental Economics and Ecological Education: Emerging Equipments and Ecosystems Engineering**

*Abdeen Mustafa Omer (Energy Research Institute (ERI), Nottingham, UK)*

In series: *Environmental Science, Engineering and Technology*  
Hardcover: 978-1-63483-588-6. $310.00.  

Mankind is becoming more and more comfort-friendly. Be it at home or at the workplace, we are becoming increasingly accustomed to enjoying maximum comfort levels. And to make the indoor environment match our suitability is no longer a challenging task. We can make the seamless transition from scorching heat to cool temperatures and back again by just playing around with remote buttons. Buildings are one of the most important contributors of pollutants and wastes that affect the urban environment and contribute to adverse climatic conditions. Hence, exposure to indoor air pollution from the combustion of biofuels is a significant public health hazard, affecting the poor in both rural and urban communities within developing countries. Furthermore, the world’s view of waste has
changed dramatically in recent years, and it is now seen as a source to feed the ever-growing demand for energy. Nowadays, emphasis is being laid upon utilisation of the surrounding energy from ground sources and other renewable energy sources to stimulate alternative energy sources for the heating and cooling of buildings. Exploitation of renewable energy sources and particularly ground heat in buildings can contribute to reducing dependency on fossil fuels. Buildings where people work require light, and in the buildings where people live, the energy is used to maintain proper lighting, temperature and ventilation. Hence, natural ventilation is rapidly becoming a significant part in the design strategy for non-domestic buildings. Ventilation has the potential to reduce the environmental impact of building operation due to a lower energy demand for cooling. A traditional, naturally ventilated building can readily provide a high ventilation rate. On the other hand, the mechanical ventilation systems are very expensive. Heating and energy consumption which are examined in this book are interesting topics not just for people in the industry, but for the general interest as well. Home owners are also on the look-out for suitable technologies to keep overhead as low as possible in energy savings, and the Editor provides strategies on how to do this.

Federal Land Policy, Resource Management, Agency Appropriations and Revenues

Felicia Martin

In series: Environmental Research Advances

2015. 142 pp.

Hardcover: 978-1-63482-168-1. $120.00.
e-book: 978-1-63482-169-8. $120.00.

The Property Clause in the U.S. Constitution grants Congress the authority to acquire, dispose of, and manage federal property. The 113th Congress is considering multiple federal land and natural resources policy and management issues. These issues are complex and often interrelated, and include how much and which land the government should own, and how lands and resources should be used and managed. These issues affect local communities, industries, ecosystems, and the nation. This book introduces some of the broad themes and issues Congress considers when addressing federal land policy and resource management. This book also discusses appropriation and revenues of federal land management agencies.

Fluvial Geomorphology and Riparian Vegetation: Environmental Importance, Functions and Effects on Climate Change

Noel Duncan

In series: Plant Science Research and Practices


Softcover: 978-1-63482-462-0. $82.00.
e-book: 978-1-63482-486-6. $82.00.

The main mesological factors that determine vegetation activity are moisture and temperature (Ferreras Chasco, 2000). Under certain conditions of moisture and temperature a limitation in growth can appear and, if these conditions do not improve, plants can enter into a state called vegetative paralysis. This book discusses the land surface of the basin of the Guadaira River, and it pays attention to the study of riparian vegetation on different channels that belong to its countryside stretch. It also presents research on the modern spatiotemporal variability of the morphology of High Arctic proglacial rivers; and provides a review on the general properties of ancient Martian systems, focusing on possible issues related to the lack of biogenic effects on Mars, and analyzing mainly riverbank related erosional and depositional structures.

Geologic Carbon Dioxide Storage on Federal Lands: Potential and Allocations

Theresa Wise

In series: Environmental Remediation Technologies, Regulations and Safety


Hardcover: 978-1-63483-560-2. $120.00.
e-book: 978-1-63483-561-9. $120.00.

As part of a global effort to assess the storage potential for captured carbon dioxide (CO2), this book estimates and characterizes the storage potential that lies beneath some of the more than 400 million acres of Federal land available for lease. Estimated at between 126 to 375 billion metric tons of CO2, the majority of this storage potential (about 85 percent) is located west of the Mississippi River, where most of the leasable Federal acreage (92 percent) is found. In assessing the potential for storage beneath Federal lands, the book addresses issues such as Federal control, location of emission sources, and pipeline rights-of-way, as well as laws and regulations relevant to Federal leasing.

Heavy Metals, Algae and Microbial Activities in Marine Systems

Ahmed El Nemr (Director of National Institute of Oceanography and Fisheries, Kayet Bey, El-Anfoushy, Alexandria, Egypt)

In series: Environmental Research Advances


Hardcover: 978-1-63482-314-2. $310.00.

Heavy metals, algae, and microbial activities in marine systems are the main targets of this book. The book is divided into 8 sections and covers heavy metal assessment, bio-monitoring of organic pollutants, pollutant removal, biota, biological activity, algae, energy, and global systems and greenhouse environments.

Indian Irrigation Projects: Maintenance and Sustainability Issues

Christopher Flores

In series: Water Resource Planning, Development and Management


Hardcover: 978-1-63483-261-8. $120.00.
e-book: 978-1-63483-262-5. $120.00.

Over 100 irrigation projects and systems can be found on Indian reservations primarily across the western United States. The scarcity of water in much of the western United States makes irrigation critical to agricultural activities. The Department of the Interior’s Bureau of Indian Affairs (BIA) manages 16 irrigation projects on Indian reservations in the western United States. This book focuses on BIA’s estimated deferred maintenance cost for its irrigation projects; shortcomings that the Government Accountability Office (GAO) identified in BIA’s management of its irrigation projects; and issues GAO identified that needed to be addressed to determine the long-term direction of BIA’s irrigation program.

Insecticides: Occurrence, Global Threats and Ecological Impact

Jaime Montgomery

In series: Environmental Remediation Technologies, Regulations and Safety


In the first chapter of the book, the immunotoxicological risk arising from xenogenous substances is emphasized. Immunotoxicology investigates unwanted adverse effects of xenobiotics on the immune system of man and animals. With regards to insecticides and pest control, several studies showed that the insect endocrine system, especially anti-stress neuropeptides, could be used as a potential target for pest control. The second chapter examines the enhancement of insecticide efficacy specifically by adipokinetic hormones. In the third chapter, the authors propose, based on the combined use of different methods such as the use of biological control agents of insect vectors of aflatoxigenic fungi, plus the use of food grade antioxidants in sublethal doses, could help reduce aflatoxins in stored maize. Maize is a crop of major economic importance in the world because it is used as human and/or livestock feed. This chapter reviews the integrated management of insect vectors of aflatoxigenic fungi in stored maize. The fourth and last chapter of this book summarizes the relationship between soil nematode communities as bioindicators of soil health and quality and application of insecticides used for the control of Western corn rootworm (WCR) in the maize field.

**Kitchen Exhaust Ventilation:** Adoption and Capture Efficiency Issues

*Mallory P. Michaels*

In series: *Environmental Research Advances*


Softcover: 978-1-63463-642-1. $62.00.

Cooking and cooking burners emit pollutants that can adversely affect indoor air quality in residences and significantly impact occupant health. Effective kitchen exhaust ventilation can reduce exposure to cooking-related air pollutants as an enabling step to healthier, low-energy homes. This book identifies barriers to the widespread adoption of kitchen exhaust ventilation technologies and practice and proposes a suite of strategies to overcome these barriers.

**Land Use, Land-Use Change and Forestry**

*Mark P. McHenry, Surendra N. Kalshreshtha and Silvia Lac (Forestry/Environmental Independent Consultant, Maracá, Assunção, Porto Alegre, RS, Brazil)*

In series: *Environmental Research Advances*


Hardcover: 978-1-63483-426-1. $190.00.

Land Use, Land-Use Change and Forestry includes research from selected international authors and institutions that consider land use management to be an important aspect in the context of climate change and development. Our team of editors and authors hope to add a valuable contribution to the literature to address global climate change in relation to agricultural-forestry ecosystems and development in vulnerable locations. Land Use, Land Use Change and Forestry book chapters include a wide variety of topics on changes in land use practices, carbon sequestration, forest degradation, as well as policies that affect land use and development. It also includes a description of the current state of land use, land-use change and forestry in South Asian countries (Chapter 1); an evaluation of biodiversity and peoples’ willingness to pay (Chapter 2); modelling of carbon sequestration in forests (Chapter 3); trade-off analysis in economic and environmental objectives (Chapter 4); use of radar imagery in detecting forest degradation (Chapter 5); assessment of carbon sequestration in woodlots (Chapter 6); solutions for improved survival of ruminants in arid and semi-arid environments and associated carbon sequestration (Chapter 7); policy interventions for land use changes (Chapter 8); accomplishing land use change from subsistence to commercial farming in Mozambique (Chapter 9); and an international and multi-sectoral approach for partnering to achieve positive agricultural developmental land use change (Chapter 10). Our team of editors, reviewers, and authors are honored to be part of this project: truly an example of international cooperation and articulation within the climate change community. The chapters and authors of Land Use, Land-Use and Forestry were carefully selected through a rigorous peer review process considering publication records, relevant and high quality contributions to this topic, and priming international cooperation. For this book and its contents, the intended audience includes the international climate change community including: contributors to the UNFCCC-IPCC process, policymakers, consultants, project developers, researchers and their institutions. Land Use, Land-Use Change and Forestry aims to be a valuable addition to multidisciplinary and international cooperation efforts (policies, cultural practices, new technologies, and adaptation measures), to development of land use policies, governmental and nongovernmental agencies worldwide and the general public. The editors of Land Use, Land-Use Change and Forestry believe the book is an effective tool to help the international community progress in understanding and management of land use changes in addressing climate change through international collaboration and cooperation.

**Nuclear Waste Treatment:** Assessments of Washington State’s Hanford Site

*Christie Maldonado*

In series: *Waste and Waste Management*


Hardcover: 978-1-63483-562-6. $120.00.
e-book: 978-1-63483-563-3. $120.00.

The Department of Energy (DOE) faces significant technical challenges in successfully constructing and operating the Waste Treatment and Immobilization Plant (WTP) project that is to treat millions of gallons of highly radioactive liquid waste resulting from the production of nuclear weapons. In December 2000, DOE awarded Bechtel a contract to design and construct the WTP project at DOE’s Hanford Site in Washington State. This project—one of the largest nuclear waste cleanup facilities in the world—was originally scheduled for completion in 2011 at an estimated cost of $4.3 billion. Technical challenges and other issues, however, have contributed to cost increases and schedule delays. This book examines remaining technical challenges, if any, the WTP faces; the cost and schedule estimates for the WTP; and steps DOE is taking, if any, to improve the management and oversight of the WTP project. Moreover, DOE recently reported that nuclear waste is leaking from two of its underground storage tanks. DOE has been experiencing delays in the construction of the WTP, a collection of facilities that are to treat the tank waste for disposal. These recently reported leaks and intrusions, combined with construction delays, have raised questions among regulators, the public, and Congress about the risks posed by continuing to store waste in the aging tanks. The book examines the condition of the tanks; actions DOE has taken or planned to respond to the recent tank leaks and water intrusions; and the extent to which DOE’s tank management plans consider the condition of the tanks and the delays in completing construction of the WTP.

**Offshore Wind:** Technologies, Ecological Risks and Prospects

*Chester Mendoza*

In series: *Environmental Remediation Technologies, Regulations and Safety*


Offshore wind has been envisaged as making a critical contribution in Europe in satisfying the electricity demand in a low-carbon generation scenario. In fact, offshore environment provides a windier and steadier source compared to onshore wind energy. Offshore wind turbine rotors and generators create value by “farming” the wind, converting its energy into electricity. Costly infrastructure – the very high towers,
deep seabed foundations, buried high voltage insulated cables, on-platform transformers and complete subsea transmission grid – and expensive at-sea maintenance are required because this electricity is not where it is needed. This book discusses offshore wind technologies and examines the ecological risks and prospects of offshore wind.

Polycyclic Aromatic Hydrocarbons
Clifford Boone
In series: Environmental Science, Engineering and Technology
2015.
Hardcover: 978-1-63483-641-8. $110.00.
Polycyclic aromatic hydrocarbons (PAHs) are relatively stable contaminants, recalcitrant in soils and less easy to degrade than other organic compounds. One of the major sources of PAHs are petrogenic. The fuel components and ubiquitous environmental pollutants of PAHs are examined in the first chapter of this book. The second chapter presents data regarding firefighters’ occupational exposure to PAHs within the period of the last fifteen years. Total occupational exposure to PAHs through their urinary monitoring is also reviewed. The third chapter focuses on the sources, distributions and toxicity of PAHs in sediments and the associated risk assessments of human exposure to these compounds via bottom-dwelling biota consumption from the Niger Delta drainage basin, in Southeast Nigeria.

Rural Water Systems: Challenges and Drinking Water Needs
Gloria Simmons
In series: Water Resource Planning, Development and Management
2015. 95 pp.
e-book: 978-1-63483-241-0. $62.00.
According to the Census Bureau, approximately 27 percent of the U.S. population lives in a rural area. The smallest water systems account for 77 percent of all systems, and many water systems are not in compliance with drinking water regulations. Seven federal agencies provide funding or technical assistance to rural communities in developing drinking water and wastewater systems and complying with federal regulations. The nation faces costly upgrades to aging and deteriorating drinking water and wastewater infrastructure. Many rural communities face significant challenges in financing the costs of replacing or upgrading aging and obsolete drinking water and wastewater infrastructure. This book focuses on the federal agencies that provide funding or technical assistance to rural communities and fiscal year 2014 funding; and issues identified that affect rural communities’ ability to obtain funding for water and wastewater infrastructure. Furthermore, this book summarizes the Safe Drinking Water Act (SDWA) and its major programs and regulatory requirements.

Sustainable Development and Environment Management: Innovations, Sciences and Technologies
Abdeen Mustafa Omer (Associated Researcher, Energy Research Institute (ERI), Nottingham, UK)
In series: Environmental Remediation Technologies, Regulations and Safety
2015. 403 pp.
Hardcover: 978-1-63463-973-6. $270.00.
This is an introduction to present sustainable development including its processes, challenges and prospects. We are living in an era of rapid technological change where innovation has increased exponentially. Accordingly, companies with cutting-edge research are facing lots of challenges in creating new products to enable a sustainable human existence and to ensure their acceptance by the society, especially when we hear of reports like tomorrow’s market signaling that the current trends are leading to an unsustainable human society. The relevance and importance of the study is discussed in the communication, which also highlights the objectives of the study and the scope of the book.

Waste Management: Challenges, Threats and Opportunities
Rajeev Pratap Singh (Institute of Environment and Sustainable Development, Banaras Hindu University Varanasi, India) and Abhijit Sarkar (Department of Botany, Raiganj Surendranath Mahavidyalaya, Sudarshanpur, West Bengal, India)
In series: Waste and Waste Management
Over the last couple of decades, rapid urbanization, unplanned industrialization, and a rising population jointly created several issues worldwide, particularly in developing and underdeveloped countries. One such issue that requires urgent attention is the ever-increasing waste problem which has become an exasperation for regional and local governments and an issue of both national and international importance. Waste in any form and character are the byproduct of anthropogenic activities. To move forward towards a cleaner and greener future, we need to deduce sustainable technologies - to reduce, reuse and recycle our waste. This book includes important information and views on new developments of waste management technologies, especially from developing and underdeveloped countries. In this book, there are contributions of experts from different countries. Each one of them shows interesting research outputs on waste management technologies which are both economical and eco-friendly; and if applied properly, can lead us towards a ‘zero-waste’ world.

Wastewater Treatment: Processes, Management Strategies and Environmental/Health Impacts
Lydia M. Barrett
In series: Environmental Science, Engineering/Health Impacts
Hardcover: 978-1-63482-467-5. $190.00.
e-book: 978-1-63482-491-0. $190.00.
Over the past few years, the occurrence of pharmaceutical residues in the environment has attracted great interest regarding the possible harmful effects of many of these pollutants to living organisms. One of the main sources of pharmaceuticals in the environment is the discharge of effluents from wastewater treatment plants (WWTPs), where their removal is often incomplete. Natural wastewater treatment systems such as constructed wetlands constitute a relevant option to conventional methods due to their efficiency, low establishment costs and reduced operation and management requirements. This book discusses processes involved with wastewater treatment as well as management strategies and their impact on the environment.

Wildland Fires: A Worldwide Reality
António José Bento Gonçalves and António Avelino Batista Vieira (Dept. of Geography, Social Sciences Institute, University of Minho, Campus de Azurém, Guimarães, Portugal)
In series: Environmental Remediation Technologies, Regulations and Safety
Finally, the proximate composition and some nutritional and functional parameters inherent in the composition, and its genotypic variations, fermentation and drying processes, and the chemical and biochemical basis of these operations; and the procedures of conching, tempering, molding and enrobing. The microbiological and physicochemical factors that affect the safety and quality of chocolate are also compiled. The composition and importance of the triglycerides that make up cocoa butter and the physico-chemical factors associated with the crystallization and stability of these fats in the manufacture of chocolate are evaluated. A review and discussion of the conventional perception as regards the types and composition of chocolate, comparing it to recent reports in literature which scientifically demonstrate that chocolate can be considered as a functional food, are available in this book. An assemblage of published information of the different aspects that make up the sensory quality of chocolate, basic techniques of photography and styling, and its applications in the chocolate as well as the parameters inherent in the composition, and physical properties involved in the final appearance of the chocolate is discussed. The organization, the day to day running, production and quality control of the products made by the Venezuelan socialist enterprise "Cacao Oderí" and the activities of the chocolate School de La Alba are shown. Finally, the proximate composition and some nutritional and functional properties of cocoa by-products (pod husks and bean coats) were analyzed in order to propose them for feed and food uses.

From Medicinal Chemistry to Food Science: A Transfer of In Silico Methods Applications
Pietro Cozzini (Department of Food Science, University of Parma, Parco Area delle Scienze, Parma, Italy)
In series: Food Science and Technology
e-book: 978-1-63483-605-0. $190.00.
The aim of this book is to illustrate the big opportunity to transfer computational techniques, well accepted and used in medicinal chemistry to food science; through this, we hope to discover new pollutants, possible dangerous food additives, contaminants from industries, xenosterogens, etc. The paradigm is: if a molecule can interact with a receptor (i.e. a Nuclear Receptor), it can modify the signaling pathway and should be investigated to discover negative effects on food. The interaction can be predicted using in silico techniques well known by medicinal chemists to discover small lead compounds or to study the behavior of a protein ligand interaction. The book starts with an introduction about the computational methods applied to food safety by authors coming from a big food company, who elucidate the importance of this approach for industries and food agencies. In Chapter Two, the authors give an overview of in vivo tests for food contaminant and toxin evaluation. In Chapter Three, in vitro and in silico models of digestion are compared. In Chapter Four, the authors, belonging both to an in silico lab and a wet lab use a case study of polyphenols to show how to merge in silico prediction and in vitro controls to gain time and money in estrogen receptors. Additionally, polyphenol binding studies use a molecule modeling approach. In Chapter Five, a non-typical docking approach is presented: a reverse docking approach. Chapter Six and Seven introduce the problem of receptor flexibility and how to treat this important characteristic that must be considered in computational simulations. Chapter Eight is a review about QSAR methods well considered in this approach. Chapter Nine show a non-conventional informatics approach to ab initio in silico protein structure prediction. The last chapter is dedicated to the informatics requirements for in silico simulations to help researchers approaching this field.

Fruit and Pomace Extracts: Biological Activity, Potential Applications and Beneficial Health Effects
Jason P. Owen
In series: Food and Beverage Consumption and Health
The use of natural or naturally-derived antioxidants, instead of synthetic antioxidants, to produce foods with a longer shelf life and a higher degree of safety is a growing trend. Fruit and fruit-processing by-products are considered to be an important source of bioactive molecules (vitamins C, E, carotenoids, phenolic compounds and dietary fiber) of great interest for the food industry, although their content varies greatly depending on origin, source, type of extract and concentration levels. This book discusses biological activity, potential applications and beneficial health effects of fruit and pomace extracts.

Marine Oils (From Sea to Pharmaceuticals)
Ioannis Zabetakis (Laboratory of Food Chemistry Department of Chemistry, National and Kapodistrian, University of Athens, Greece)
In series: Food Science and Technology
This book is about the fish we eat, fish that not only sustains us but also provides us with pleasure and well-being. Fish is also a valuable source of nutraceuticals and pharmaceuticals. We follow a holistic approach in this book viewing fish in its entirety from the food that fish need in order to grow to the pharmaceutical applications of fish oil. 2014 is a historic year, it is the first year in human history where the amount of fish we consume from aquaculture will surpass that from the wild. As it seems that aquaculture will play a vital role in the future feeding of mankind, it should be considered imperative that it be done in a responsible and sustainable way. Food security is both the top political and scientific priority today. With this book, we try to provoke some thoughts as to how fish is produced, how it is valorised and what could be done in the future. We address within this book the issue of resource management, fish nutritional requirements, aquatic food security, nutritional value of marine oils and fish themselves as well as how we can further exploit marine oil usage in the production of nutraceuticals and pharmaceuticals.

**Phytosterols: Food Sources, Functions and Health Benefits**

**Deanna Garner**

In series: *Progress in Food Science and Technology* 2015. 231 pp.

Hardcover: 978-1-63483-477-3. $190.00.

The consumption of phytosterols (plant sterols and/or stanols) can reduce cardiovascular risk by reducing hypercholesterolemia. In addition to reducing intestinal cholesterol absorption, phytosterols (PS), which are structurally similar to cholesterol, have other potential beneficial effects in humans. There are a wide range of plants that have phytosterols in their composition. In this book, the food sources of phytosterols are explored. The authors evaluate whether a decrease in carotenoids associated with the consumption of a therapeutic dose of PS alters oxidative stress parameters. Furthermore, the characterization of oils by phytosterol analysis was studied and is examined in this book. An overview of phytosterols in olive oil is given as well, particularly, the use of HPLC and GC coupled to various detection systems to isolate sterols from olive oil in order to focus on the occurrence of phytosterols and their role in human health.

**Quercetin: Food Sources, Antioxidant Properties and Health Effects**

**Gregory Malone**

In series: *Food Science and Technology* 2015.

Hardcover: 978-1-63483-595-4. $190.00.

Quercetin is a ubiquitous phytochemical and a major flavonoid consumed in the human diet. It is also a part of the active principles of several medicinal plants and is used as a supplement for the treatment of several diseases. The authors of this book discuss the latest advances in quercetin research, its antioxidant properties as well as health benefits.

**GENETICS**

**Allelic Forms of the FMR1 Gene: Fragile X Syndrome, Primary Ovarian Insufficiency and Tremor Ataxia Syndrome among Others**

*Montserrat Milà (Biochemistry and Molecular Genetics Department, Hospital Clinic de Barcelona, Barcelona, Spain)*


Hardcover: 978-1-63321-914-4. $160.00.

The FMR1 gene is an example of how a single gene can have different phenotypic effects. Indeed, since its discovery in 1991 it has revealed new facets: classic Fragile X syndrome (FXS), Fragile X premature ovarian insufficiency (FXPOI), Fragile X tremor-ataxia syndrome (FXTAS) and other emerging disorders from which we are continuously learning more about this gene. The chapters of this book provide an update of the different allelic forms of the FMR1 gene. Chapter 1 is a description of the classical Fragile X syndrome including clinical findings in males and females, the FMR1 gene, molecular bases, the FMRP protein, animal models, genetic counseling, newborn screening and diagnosis. Chapters 2 and 3 review the two main disorders associated with FMR1 premutation: FXPOI and FXTAS. FXPOI is a new clinical entity in which carrier premutation (PM) females present early ovarian dysfunction, with menopause occurring 5 years earlier than non-carrier family members. FXTAS is a late-onset inherited neuropsychiatric degenerative disorder that occurs predominantly in male carriers of the FMR1 premutation. Chapters 4 and 5 present the most recent advances in the current knowledge of other disorders associated with the FMR1 gene: Chapter 4 describes the psychopathological alterations of the different phenotypes associated with either premutation or full mutation. Chapter 5 is focused on the pathologies associated with the premutation such as fibromyalgia, thyroid disease and hypertension, among others. A comprehensive review of genetic counseling is done in Chapter 6 including all types of alleles related to the FMR1 gene and point mutations. Finally, although at present there is no treatment for any of these pathologies, an update of the clinical trials on therapies for all these FMR1 gene-related disorders and their current status is made in Chapter 7.

**GEOLOGY**

**Bentonite: Characteristics, Uses and Implications for the Environment**

*Ajay Kumar Mishra (University of South Africa)*


Hardcover: 978-1-63482-142-1. $190.00.

Bentonite are usually found in deep geographical areas. They are produced from rock, fossils, weathering of volcanic ash and disposal of high-level of radioactive waste in many countries. Bentonite mainly consist of clay mineral such as montmorillonite and kaolinite. They mainly exist in cationic form of organic compounds such as aromatic or aliphatic hydrocarbon and are employed to modify high cations exchange capacity, higher structural integrity, thermal conductivity, high chemical buffering capacity, and stiffness. Bentonite is a layer of natural silicate clay mineral having numerous properties such as large specific surface area, great absorption and interlayer exchangeable cation. Bentonite consists of outstanding physico-chemical properties
which make it applicable in the areas such as water treatment, medical, groundwater barrier, farming, and construction. They are well known to be one of the most versatile and inexpensive treatments. The current book describes the bentonite characteristic, uses and implications for the environment in many areas of environmental science in particular, such as remediation, clean energy, water research and waste management. Researchers working in the area will benefit from the fundamental concepts and advanced approaches described in the book. The book is going to also be beneficial to researchers who are working for their graduate and postgraduate degrees in the area of science and technology. The book also provides a platform for all researchers as it covers a wide background in the subject from recent literature, abbreviations, and summaries. Additionally, this book covers a broader research area of chemistry, physics, environmental science, materials science, polymer science and engineering to present an interdisciplinary approach. This book contains the fundamental knowledge as well as recent advancements in the research and development of bentonite. The book also covers recent approaches and prospects about the current research and development of bentonite.

Crystals and Crystal Growth

Wilfrid Carter
In series: Geology and Mineralogy Research Developments
Softcover: 978-1-63463-791-6. $82.00.
e-book: 978-1-63463-822-7. $82.00.

Hydrothermal crystal growth offers a complementary alternative to many of the classical techniques of crystal growth used to synthesize new materials and grow bulk crystals for specific applications. This specialized technique is often capable of growing crystals at temperatures well below their melting points and thus potentially offers routes to new phases or the growth of bulk crystals with less thermal strain. Borate crystals are widely used as nonlinear optical, laser and luminescent materials due to their diversified structures, and good chemical and physical properties. The growth of high-quality borate crystals is required for their applications. A fundamental problem for borate crystal growth is the high-temperature melt structures in the crystal growth systems. This book discusses several crystals and the crystal growth processes.

Handbook of Late Cretaceous Planktic Foraminifera (Practical Classification, Biostatigraphic) M. Dan Georgescu (University of Calgary, Department of Geosciences, Calgary, Alberta, Canada)
In series: Paleontology, Geosciences and Stratigraphy
2015.

Developing the evolutionary history and classification in the planktic foraminifera of the Late Cretaceous age also led to the proliferation of taxa names and an unprecedented expansion in terminology. This new data is spread out over several tens of articles published in international journals and books. Handbook of Late Cretaceous Planktic Foraminifera (Practical Classification, Biostatigraphy) brings a variety of this data into the practical field in a ready-to-use form. The species and genera of all the Cretaceous planktic foraminiferal groups are described and illustrated, and additional readings are recommended. Each species is dedicated to one of the 237 plates illustrated with high-quality scanning, electron microscope photographs. The large-sized illustrations are designed to allow the reader to connect quickly with the gross test architecture data with those pertaining to the wall ultrastructure, ornamentation, porosity and high detail morphological features of the test. Fossil material was collected from a variety of localities worldwide, but most of them are from sites in the Atlantic, Indian and Pacific Oceans. With higher than 95% of estimated coverage, the handbook is designed as a useful identification tool for a variety of professionals interested in using the Late Cretaceous planktic foraminifera. Revised stratigraphical ranges for all the 237 species are given in a chart calibrated on the classical Cretaceous Stage/Age scale in which the species are ordered by genus.

Health

Corn and Coconut Oil: Antioxidant Properties, Uses and Health Benefits
Constantin Apetrei (Associate Professor, Faculty of Sciences and Environment, Dunarea de Jos University of Galati, Galati, Romania)
In series: Nutrition and Diet Research Progress

Corn and coconut oils are important vegetable oils containing many valuable compounds necessary for life. These oils are known to have nutritional and valuable healthy qualities/properties, attributed mainly to fatty acid composition, toccols, carotenoids, polyphenols, etc. The antioxidant properties confer many health benefits, such as reducing the risk of cardiovascular disease, cancer, and other diseases. Fatty acids and related metabolite derivatives from coconut and corn oils are known to have excellent antimicrobial properties as well. This book covers different multi- and interdisciplinary approaches related to the production, chemical composition, quality and authentication, uses, antimicrobial properties, and health benefits of corn and coconut oils, described by important authors from all over the world. This book will be helpful for a wide range of readers, from university students to researchers.

Internet

4G & Beyond: The Convergence of Networks, Devices and Services
Abdulrahman Yarali (Telecommunication Systems Management, Murray State University, Murray, KY, USA)
In series: Electronics and Telecommunications Research
Hardcover: 978-1-63483-398-1. $190.00.

From the transition of analog to digital communication, along with seamless mobility and high computing power of small handheld devices, the wireless communications industry has seen tremendous changes leading to the integration of several telecommunication networks, devices and services over the last 30 years. The rate of this progress and growth has increased particularly in the past decade because people no longer use their devices and networks for voice only, but demand bundle contents such as data download/streaming, HDTV, HD video, 3D video conferencing with higher efficiency, seamless connectivity, intelligence, reliability and better user experience. In this book, there are nine chapters which cover wireless networking evolution and technology advancements. High level discussions on this important and fast growing industry are presented by technology, academic, and industry communities. The content of this book will shed some light on this subject and the chapters presented in this book discuss the design and implementation of various short and long range wireless/wireline networking. The challenges faced in providing applications and services to meet user experiences ubiquitously and securely are presented.
Broadband Internet: Selected Availability and Cost Issues
Kenneth Palmer
In series: Internet Theory, Technology and Applications
 Sofcover: 978-1-63482-431-6. $62.00.
Over the past two decades, the Internet has had profound and rapidly growing effects on the economy, culture, and social interactions of Americans. Yet more than one in four households in the United States have not adopted broadband technology to access the Internet at home (on a computer, tablet, or mobile device). About 29 percent of households that have not adopted home Internet service cited cost as the primary reason. The number of Internet service providers (ISP) from which consumers can choose varies by speed. This book examines fixed and mobile Internet service providers. It also assesses the impact of broadband availability in the workplace; examines broadband availability, from the most basic speed levels, which allow a user to access several basic web tools, to the fastest speeds, for which developers are now beginning to design applications; examines information available about the application of UBP by Internet service providers; issues related to UBP selected consumers report are also important to them; and the potential effects of UBP on consumers.

Cybersecurity and Cyber-Information Sharing: Legal and Economic Analyses
Julia M. Morgan
In series: Internet Theory, Technology and Applications
Hardcover: 978-1-63483-137-6. $145.00.
Over the course of the last year, a host of cyberattacks has been perpetrated on a number of high profile American companies. The high profile cyberattacks of 2014 and early 2015 appear to be indicative of a broader trend: the frequency and ferocity of cyberattacks are increasing, posing grave threats to the national interests of the United States. While considerable debate exists with regard to the best strategies for protecting America’s various cyber-systems and promoting cybersecurity, one point of general agreement amongst cyber-analysts is the perceived need for enhanced and timely exchange of cyber-threat intelligence both within the private sector and between the private sector and the government. This book examines the various legal issues that arise with respect to the sharing of cybersecurity intelligence, with a special focus on two distinct concepts: (1) sharing of cyber information within the government’s possession and (2) sharing of cyber-information within the possession of the private sector. Furthermore, the authors analyze the incentives for companies to share information about cybersecurity breaches with other companies and the federal government, and conclude with a discussion on several bills passed on information sharing in cybersecurity.

Cyberspace Threat Landscape: Overview, Response Authorities, and Capabilities
Cody L. Barker
In series: Internet Theory, Technology and Applications
Hardcover: 978-1-63482-338-8. $120.00.
e-book: 978-1-63482-339-5. $120.00.
Cyberspace is defined by the Department of Defense as a global domain consisting of the interdependent networks of information technology infrastructures and resident data, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers. Attacks in cyberspace have seemingly been on the rise in recent years with a variety of participating actors and methods. As the United States has grown more reliant on information technology and networked critical infrastructure components, many questions arise about whether the nation is properly organized to defend its digital strategic assets. Cyberspace integrates the operation of critical infrastructures, as well as commerce, government, and national security. Because cyberspace transcends geographic boundaries, much of it is outside the reach of U.S. control and influence. This book provides an overview of cyberspace threats, and discusses cyber incident response practices.

Internet Crimes Against Children: Annotated Bibliography, Provisions of Select Federal and State Laws, and Major Cases
Audrey L. Winter
In series: Law, Crime and Law Enforcement
2015. 228 pp.
Communication technologies, such as computers and cell phones, and social-networking sites like My Space enable the rapid creation and dissemination of harassing and pornographic text, pictures, and video. Studies show that whereas adults generally use technology only as a tool, adolescents consider technology, including text messaging and chat rooms, to be an essential part of their social life. Cyberbullying and victimization begin as early as second grade for some children, and by middle school, students as a group experience or engage in all known forms of cyber abuse and online aggression. Online exchange of sexually explicit content typically begins in middle school. This book provides an annotated bibliography, provisions of select federal and state laws, and major cases of internet crimes against children.

Internet Policies and Issues. Volume 5
B.G. Kutais
In series: Internet Policies & Issues
In the ever-changing realm of the Internet, lawmakers face a steady stream of new areas potentially requiring regulation and oversight. This book is part of a series exploring the dynamic universe of the 21st century. This volume of the series discusses topics on cybersecurity, innovation and the internet economy; service overlay network use in enabling end-to-end QoS guarantees in the next generation internet; internet governance and the domain name system; state taxation of internet transactions, as well as laws and taxation for “Amazon”; internet policies in China; the application to the internet of the Americans with Disabilities Act; and a statement on the Cable Act at 20.

Internet Policies and Issues. Volume 11
B.G. Kutais
In series: Internet Policies and Issues
In the ever-changing realm of the Internet, lawmakers face a steady stream of new areas potentially requiring regulation and oversight. This book is part of a series exploring the dynamic universe of the 21st century. This volume of the series discusses topics on computer networks, the internet and green IT; remote automatic checking systems for multiple emergency lights via the internet; internet gambling; internet pharmacies; internet infrastructure in native communities; and China’s censorship of the internet and social media.

Internet Policies and Issues. Volume 12
B.G. Kutais
In series: Internet Policies and Issues
Manufacturing

Additive Manufacturing (AM): Emerging Technologies, Applications and Economic Implications
Albert Thornton
In series: Manufacturing Technology Research
Hardcover: 978-1-63483-850-0. $110.00.
e-book: 978-1-63482-657-0. $110.00.
The introduction of additive manufacturing or 3D printing has brought about a whole new dimension of possibilities in manufacturing technology. This book includes research on powder-bed electron beam additive manufacturing (EBAM) which has the potential to offer innovative solutions to many challenges facing the manufacturing industry. The feasibility of the use of a 3D printer to recreate patient-specific anatomical modeling (in this case, of the pelvic rim) are also examined. A discussion on why the use of this technology to customize implants, plates and the operative procedure to a patient's unique anatomy leads to improved outcomes is lead by the authors. The third chapter deals with selective laser melting (SLM) and presents a review regarding the state-of-the-art mechanical performance of the SLM manufactured titanium and aluminum alloys (due to wide demand of light-weight parts in the aerospace and automotive industries). The authors of the fourth chapter discuss the feasibility of mobile additive manufacturing systems powered by photovoltaic modules for different applications. The book concludes with a review on functionally graded materials (FGM), which can be produced by laser metal deposition, which belongs to the class of additive manufacturing. LMD is capable of producing three dimensional (3D) parts directly from the 3D image by adding materials layer by layer. In this chapter, laser metal deposition of titanium alloy composite are described and also characterized.

Additive Manufacturing Materials: Standards, Testing and Applicability
Lillian White
In series: Manufacturing Technology Research
2015. 139 pp.
Hardcover: 978-1-63483-302-8. $120.00.
e-book: 978-1-63483-303-5. $120.00.
This book is the first step in a process to develop standards appropriate for the testing of the mechanical properties of metal parts made via additive manufacturing. This book investigates the current state-of-the-art methods for determining the properties of metal powders. This assessment evaluates both existing standards that provide guidance for powder property measurement methods, as well as technical publications describing methods that are not covered as completely by standards. Furthermore, the analysis shows that additive manufacturing-specific materials standards for characterizing the properties of metal powders and metal parts do not have to be developed from scratch. Decades of powder property testing (born out of powder metallurgy processes) and mechanical property testing has resulted in a suite of existing standards that can form the basis needed for some additive manufacturing materials.

Electrical Discharge Machining (EDM): Types, Technologies and Applications
M. P. Jahan (Department of Architectural and Manufacturing Sciences, Western Kentucky University, USA)
In series: Manufacturing Technology Research
2015.
Electrical Discharge Machining (EDM) is one of the earliest and most widely used non-conventional machining processes. In recent years, the use of EDM has increased significantly in industries, mainly due to the extensive use of hard and difficult-to-cut materials, i.e. hardened steels, carbides, titanium alloys, nickel super alloys and so on. The EDM process is being used extensively for many important applications in die and mold, aerospace, automotive, macro-electronic and biomedical industries. As a result, extensive research has been carried out on various aspects of EDM. Taking those facts into consideration, this book aims to provide a comprehensive overview of the various types, technologies and applications of EDM. The book
starts with chapters on the two major types of EDM: die-sinking EDM and wire-EDM. Subsequently, several EDM-based hybrid machining processes, such as: ultrasonically aided EDM, powder-mixed EDM, and simultaneous micro-EDM/ECM have been discussed in detail. This book includes chapters on the detail of EDM surface and modeling and simulation of the EDM process. This book also contains chapters on the novel and innovative applications of EDM as well as machining of newer materials, such as: shape memory alloy, reaction-bonded silicon carbide, metal matrix composites, silicon based semiconductors, and non-conducting polymers. It is a useful resource for students and researchers who are planning to start their research on the area of EDM and related processes. It can also serve as a reference for students, academics, researchers, engineers, and working professionals in non-traditional manufacturing processes related industries.

**MARINE BIOLOGY**

**Marine Dinoflagellates**

*R. Santhanam (Fisheries College and Research Institute, Tamilnadu Veterinary and Animal Sciences University, Thoothukudi, India)*

In series: *Marine Biology*


Hardcover: 978-1-63463-981-1, $160.00.


Marine dinoflagellates, one of the most important components in phytoplankton are receiving much attention owing to their toxicity. They are responsible for causing toxic blooms and associated poisonings such as Paralytic shellfish poisoning (DSP), Neurotoxic shellfish poisoning (NSP), Diarrheic shellfish poisoning (DSP), Azaspiracid shellfish poisoning (ASP) and ciguatera fish poisoning (CFP) in humans all over the world. However, recent research has shown that such toxins could be of great use therapeutically. Aspects such as the identification of dinoflagellate species; harmful dinoflagellate blooms and associated poisonings as well as their bioluminescence and biotechnological applications have been dealt with in detail. A comprehensive book on marine dinoflagellates is hitherto wanted and needed, and it is hoped that the present publication would cater to the needs of students of life science disciplines in general and marine biology and fisheries science disciplines in particular.

**Towards Sustainable Fisheries Management: A Perspective of Fishing Technology Weaknesses and Opportunities with a Focus on the Mediterranean Fisheries**

*Alessandro Lucchetti, Antonello Sala, Suzan Kholeif and Emilii Notti (Consiglio Nazionale delle Ricerche (CNR) – Istituto di Scienze Marine (ISMAR), Sede di Ancona. National Research Council (CNR) – Institute of Marine Sciences (ISMAR), Italy)*

In series: *Fish, Fishing and Fisheries*


Hardcover: 978-1-63463-698-8, $170.00.

e-book: 978-1-63463-816-6, $170.00.

In the last decades, the human harvesting of marine resources became more efficient as the understanding of the habits and behaviours of the various species available in the sea gradually increased. Technologies naturally developed over time and fishing systems became more sophisticated and increasingly adapted to catch the most desirable species and sizes. This evolution is still in progress and technological development goes on especially in the Mediterranean area, where small and relatively old fishing vessels are traditionally used. These technical advances in fishing gears have generally led to more efficient fishing operations and improved access to resources and fishing grounds. On the other hand, general awareness on the environmental problems due to the exploitation of fisheries resources has also increased. Therefore, in order to preserve fishery resources and marine environments, fishing gears and their impacts need to be further investigated and less impacting techniques should be developed. In this regard, fishing technologists are responsible to provide fishery managers as well as fishermen and stakeholders, with useful advice and technical solutions for mitigating adverse impacts of fishing gears. By taking these problems into account, the book contents are based on the requirements of ecosystem-approach to fisheries management. The Code of Conduct for Responsible Fisheries of the FAO (1995) encouraged the use of selective, environmentally safe and cost effective gear and techniques. Thus the book aims at providing information on sustainable fishing technologies, and transfers the expertise on fishing technology to Mediterranean fisheries scientists and end-users such as fisheries managers, administrators, controllers etc. This book is structured to provide information on fishing gear technology, selectivity, bycatch-impact reduction and fishing vessel technology, with particular attention to the Mediterranean context. The information included might be used to learn how to assess the impacts and selectivity of different fishing gears and find technical solutions to mitigate these impacts and to address scientific studies. Furthermore, advice and technical solutions on the properties of fishing vessels affecting energy efficiency have been also considered in order to address possible technical changes to the currents boats. Finally the contents of this book might be considered as a useful tool when preparing management measures as well as for the establishment, enforcement or improvement of fishing rules.

**MATERIALS SCIENCE**

**Advances in Materials Science Research. Volume 20**

*Maryann C. Wythers*

In series: *Advances in Materials Science Research*


The authors of this book discuss the latest advances in materials science research. The chapters include a discussion on a mathematical model used to study the behavior of piezoelectric materials and its applications in energy harvesting; the highly reactive etchant gas, chlorine trifluoride, and its applications relating to the silicon carbide (SiC) device process; the rheological properties and structure of poly(vinyl chloride)(PVC)/plasticizer systems; a comprehensive review of ultrafine grained TiNi-based SMAs presented in terms of processing techniques, microstructure evolution, thermo-mechanical properties, biocompatibility and applications; and a chapter on the properties of silk/hydrocell blended fabrics and the applications of selected functional finishes.

**Advances in Materials Science Research. Volume 21**

*Maryann C. Wythers*

In series: *Advances in Materials Science Research*


Hardcover: 978-1-63483-381-3, $190.00.


This book provides the most recent developments in the field of materials science, with chapters focused on advances in thermoluminescence research; a new structural explanation for plastic deformation behavior, including yielding and necking, using in situ Raman spectroscopy to investigate the uniaxial drawing and stress relaxation processes; an examination of the fast pyrolysis of woody biomass carried out with and without a zeolite catalyst; a review of proposals that have been made for the assessment of geologic materials in relation to their contribution to external gamma dose radiation; a
comprehensive summary of practical X-ray analysis applied to the study of welding fluxes at high temperatures; and state-of-the-art research on calcium orthophosphate-containing biocomposites and hybrid biomaterials suitable for biomedical applications.

**Advances in Materials Science Research. Volume 21**
*Maryann C. Wythers*
In series: *Advances in Materials Science Research*
Hardcover: 978-1-63483-547-3. $190.00.
This book presents a comprehensive review of recent advances in materials science research. The chapters included in this volume are conductive composites as versatile substrates for modeling of interfaces and sensors; the use of fiber reinforced polymers to improve load carrying capacity of damaged concrete; functionally graded materials in dentistry; electrochemical synthesis and characterization of electroactive copolymers deriving from five-ring with six-ring aromatic compounds and their perspectives for cost-effective optoelectronic applications; structural health monitoring of composite aircraft; semiconductor nano-materials for water splitting; dendrimer and its role for the advancement of nanotechnology and bioengineering; parametric identification of nonlinear model of hydrogen thermal desorption from structural materials; testing 1D ternary photonic band gap material structure for use in temperature unstable environments; the effect of temperature variation on transmission properties of 1D photonic band gap material structure and random multilayer structure; and altering spectrum tuning capability, and temperature sensitivity in 1D ternary photonic band gap material structures.

**Analytical Models of Thermal Stresses in Composite Materials IV**
*Ladislav Ceniga (Institute of Materials Research, Slovak Academy of Sciences, Slovak Republic)*
In series: *Materials Science and Technologies*
Hardcover: 978-1-63463-750-3. $190.00.
This book is the fourth volume in a series of books that present original results in the study of analytical models of thermal stresses in composite materials. Within the analytical modelling, two- and three-component composites are replaced by multi-particle-matrix and multi-particle-envelope-matrix systems, respectively, which consist of isotropic and/or anisotropic components represented by spherical particles (without or with an envelope of the particle surface) periodically distributed in an infinite matrix. In addition to the thermal stresses, analytical models of thermal-stress induced phenomena (crack formation, limit state, energy barrier, strengthening, lifetime prediction) are also discussed. Illustrative examples of applications of these analytical models are examined against real engineering materials (superconductive and structural ceramic composites). Results of this book are applicable within basic research (solid continuum mechanics, theoretical physics, materials science and engineering) as well as within engineering practices.

*Mahmood Aliofkhazraei (Tarbiat Modares University, Faculty of Engineering, Department of Materials Engineering)*
In series: *Materials Science and Technologies*
This is the first volume of the four volume set of Comprehensive Guide for Mesoporous Materials. The discovery and application of mesoporous materials in the different industries, including the catalyst industry, is one of the major advances over the past two decades. One of the important mesoporous materials is zeolite. Over the past decade, different types of zeolites have been produced in the nanometer range dimensions. Porosities can also be regular or irregular. Due to more research done on mesoporous materials, knowledge of this science has increased. Researchers are now able to make mesoporous materials with dimensions equal to the predetermined requirements to use in engineering, such as with molecular separation membranes. This volume mainly discusses the synthesis and characterization of mesoporous materials. Some of the mesoporous materials discussed in this volume are alumina, carbon, silica and also polymeric materials. There are 15 chapters in this volume; each one includes examples of these interesting materials, supported by appropriate figures for better clarification.

*Mahmood Aliofkhazraei (Tarbiat Modares University, Faculty of Engineering, Department of Materials Engineering)*
In series: *Materials Science and Technologies*
This is the second volume of the four volume set of the Comprehensive guide for Mesoporous Materials. Mesoporous materials are found abundant in biological systems and minerals and some of these materials have long been used in various industries. Recent advances at the nanoscale level has caused an increase in the use of these materials. This volume mainly discusses the analysis and functionalization of mesoporous materials.

*Mahmood Aliofkhazraei (Tarbiat Modares University, Faculty of Engineering, Department of Materials Engineering)*
In series: *Materials Science and Technologies*
This is the third volume of the four volume set of Comprehensive Guide for Mesoporous Materials, mainly discussing different properties and the development of mesoporous materials. Many applications for these materials have been recognized. Ultra precision methods also developed for commercialization of these materials. Like many nanostructured materials, mesoporous materials are also found in abundance in nature, such as in cell walls that are made of mesoporous membranes although they are much more complicated. During past decades in the oil industry, natural mesoporous materials known as zeolites are widely used. However, most of them are now produced artificially.

*Mahmood Aliofkhazraei (Tarbiat Modares University, Faculty of Engineering, Department of Materials Engineering)*
In series: *Materials Science and Technologies*
This is the final volume of the four volume set of Comprehensive Guide for Mesoporous Materials. Mesoporous materials are found abundant in biological systems and minerals and some of these materials have long been used in various industries. Recent advances in scientific understanding and manipulating in nanoscale caused an increase in the usage of these materials. One of the most important applications of mesoporous membranes are due to the special ability of pores. For example, controls of specific DNA structures and molecules filtration are possible. This volume mainly discusses the application and commercialization of mesoporous materials.

**Electro-Optic Effects in Thermotropic Liquid Crystals**
Hristo Petkov Hinov (Institute of Solid State Physics, Bulgarian Academy of Sciences, Laboratory of Liquid Crystals, Sofia, Bulgaria)
Since the discovery of the first liquid crystal in 1888 by the Austrian biologist Friedrich Reinitzer with the considerable assistance of the German physicist Otto Lehman, who in that time had been universally recognized authority in the field of microscope technique, thousands and thousands of liquid crystals have been synthesized among them nematics, short-pitch cholesterics and various kinds of smectics such as smectic-A and smectic-C. The smectic-A or smectic-C phases grow from a nematic or unwound large-pitch cholesteric oriented in the middle part of the cells and from strongly-deformed nematic or unwound large-pitch cholesteric layer in the boundary regions of the liquid crystal cells.

**Humic Substances and Natural Organic Matter**
Laurence Bates
Hardcover: 978-1-63483-387-5. $160.00.
Humic acids (HA) make up an important component of soil humus related to the maintenance of soil water-holding capacity, stabilization of soil structure and fertility and vital activity of soil micro-organisms, plants and animals. Additionally, obtaining humic substances (HS) from vermicompost has shown to be a promising alternative for large scale use in agriculture. Humic substances (HS) are also major components of natural organic matter (NOM) in soil and water as well as in geological organic deposits. This book includes chapters on vermicompost-derived liquid humus in low-input and small-scale farming; the production of liquid organic fertilizers enriched with humic substances from olive mill wastes; mechanisms of protective action of the HUMI preparation on wheat plant response to toxic ions; the application of surface-enhanced Raman scattering and fluorescence spectroscopy on silver plasmonic nanoparticles as innovative techniques to study humic substances; the complexation of metal ions with humus substances in soils and water and the final chapter examines the natural organic matter in drinking water.

**Layered Double Hydroxides (LDHs): Synthesis, Characterization and Applications**
Ian T. Sherman
Hardcover: 978-1-63482-024-0. $160.00.
E-book: 978-1-63482-040-0. $160.00.
Layered double hydroxides (LDHs) are clay-type materials with extraordinary properties, whose structure is composed of stacked inorganic metal oxide layers built by connected sheets. The crystal structure of layered double hydroxides is based on positive charged brucite-like mainlayers and balanced by reversible exchangeable interlayer anions, additional cations and water molecules. Due to their negligible toxicity and buffering properties, LDHs are commercially employed as antacids and they are increasingly studied as vehicles in drug and gene delivery systems. This book discusses the synthesis, characterization and applications of layered double hydroxides.

**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)
Fluorite-based oxide materials such as stabilized zirconias, doped ceras, 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 for pollution gas/liquid managements and chemical substance syntheses. Concurrently with such expanding technological applications, the rapid progress of various technological, 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 Approach of Added-Value Zinc Oxide Powders for Polymeric Fibrous Matrices with Engineered Architectures for High Performance Textiles**
Narcisa Vrinceanu and Paraschiva Postolache (“Lucian Blaga” University of Sibiu, Romania)
In series: Materials and Manufacturing Technology
MATHEMATICS

A Proposed Cloud Computing Business Framework
Victor Chang (Senior Lecturer in Computing, Leeds Beckett University, School of Computing, Creative Technologies and Engineering, Leeds, UK and Electronics and Computer Science, University of Southampton, Southampton, UK)
In series: Computational Mathematics and Analysis
Hardcover: 978-1-63482-017-2. $170.00.
This book gives an overview of Cloud Computing (CC) and presents a literature review explaining the development of CC. Selected frameworks are discussed, including those suitable for this research. Technical and organisational challenges for CC are also identified. This book focuses on organisational challenges and recommendations to address organisational challenges. To help organisations achieve good Cloud design, deployment and services, there is a need for the proposal and development of a framework, the Cloud Computing Business Framework (CCBF), which explains how three research questions are connected together. The CCBF is a conceptual and an architectural framework to be validated through modelling, simulation, experiments and hybrid case studies. The architecture of the CCBF is presented to explain how different key areas can relate to each other and fit into the framework. Results of case studies, simulations, modelling and experiments are used to validate CCBF and are discussed in details which collaborators find results of CCBF useful for their Cloud adoption. Selected results have been published including four journals and one book chapter. Finally, future work plans are proposed and followed-up steps are explained.

Advances in Linear Algebra Research
Ivan Kyrchei (Pidstryhach Institute for Applied Problems of Mechanics and Mathematics, NAS of Ukraine)
In series: Mathematics Research Developments
Hardcover: 978-1-63463-565-3. $185.00.
This book presents original studies on the leading edge of linear algebra. Each chapter has been carefully selected in an attempt to present substantial research results across a broad spectrum. The main goal of Chapter One is to define and investigate the restricted generalized inverses corresponding to minimization of constrained quadratic form. As stated in Chapter Two, in systems and control theory, Linear Time Invariant (LTI) descriptor (Differential-Algebraic) systems are intimately related to the matrix pencil theory. A review of the most interesting properties of the Projective Equivalence and the Extended Hermite Equivalence classes is presented in the chapter. New determinantal representations of generalized inverse matrices based on their limit representations are introduced in Chapter Three. Using the obtained analogues of the adjoint matrix, Cramer’s rules for the least squares solution with the minimum norm and for the Drazin inverse solution of singular linear systems have been obtained in the chapter. In Chapter Four, a very interesting application of linear algebra of commutative rings to systems theory, is explored. Chapter Five gives a comprehensive investigation to behaviors of a general Hermitian quadratic matrix-valued function by using ranks and inerties of matrices. In Chapter Six, the theory of triangular matrices (tables) is introduced. The main “characters” of the chapter are special triangular tables (which will be called triangular matrices) and their functions parapermanents and parapermanents. The aim of Chapter Seven is to present the latest developments in iterative methods for solving linear matrix equations. The problems of existence of common eigenvectors...
and simultaneous triangularization of a pair of matrices over a principal ideal domain with quadratic minimal polynomials are investigated in Chapter Eight. Two approaches to define a noncommutative determinant (a determinant of a matrix with noncommutative entries) are considered in Chapter Nine. The last, Chapter 10, is an example of how the methods of linear algebra are used in natural sciences, particularly in chemistry. In this chapter, it is shown that in a First Order Chemical Kinetics Mechanisms matrix, all columns add to zero, all the diagonal elements are non-positive and all the other matrix entries are non-negative. As a result of this particular structure, the Gershgorin Circles Theorem can be applied to show that all the eigenvalues are negative or zero.

Advances in Mathematics Research. Volume 19
Albert R. Baswell
In series: Advances in Mathematics Research
"Advances in Mathematics Research" presents original studies on the leading edge of mathematics. Each article has been carefully selected in an attempt to present substantial research results across a broad spectrum. Topics discussed include the complexities of math skills development; construction of an NP problem with an exponential lower bound; misconceptions and misunderstandings (M&M) of exploratory factor analysis; exploratory structural equation modeling; quantum information measures and molecular phase equilibrium; a mathematical model and optimization of rectangular mufflers hybridized with one-channel splitters by SA method; worst-case analysis versus average-case analysis for combinatorial optimization problems; mathematical and statistical applied methods; and quantum cryptography within several sequential attacks in BB84 protocol.

Advances in Mathematics Research. Volume 20
Albert R. Baswell
In series: Advances in Mathematics Research
Hardcover: 978-1-63482-741-6. $190.00.
"Advances in Mathematics Research" presents original studies on the leading edge of mathematics. Each article has been carefully selected in an attempt to present substantial research results across a broad spectrum. Topics discussed include using mathematical tessellation to model spherical particle packing structures; further results on fractional calculus for non-differentiable functions applications to z-transform and generalized functions; low earth orbit satellite constellations for local telecommunication and monitoring services; algorithm for autonomously calibrating reference flat of interferometer and residual influence of linear shift with two-flat method; dealing with non-significant interactions statuses between treatments by a suggested statistical model; stochastic simultaneous perturbation as powerful method for state and parameter estimation in high dimensional systems; bounded trajectories of unstable piecewise linear systems and its applications; mathematical modeling for predicting battery lifetime through electrical models; and mathematical modeling of the lithium-ion battery lifetime using system identification theory.

Boolean Functions: Theory, Fundamentals and Engineering Applications
Allen Hines
In series: Mathematics Research Developments
Hardcover: 978-1-63483-023-2. $110.00.
Symmetric Boolean functions have played an important role in many aspects of design automation for many years. This book summarizes developments and provides a collection of new tools and techniques that can be used to advance the study of Boolean functions. Moreover, Boolean functions provide the necessary framework for expressing the operation of logic gates, which are the key building units for the accomplishment of signal processing tasks in fundamental and system-oriented levels. The book concludes with a discussion on how Boolean functions can be used to ensure the minimum degree of logical functionality between light-wave modulated signals.

Computational Recipes of Linear and Non-Linear Singular Integral Equations and Relativistic Mechanics in Engineering and Applied Science. Volume I
Evangelos G. Ladopoulos (Civil Engineer, Mechanical Engineer, Interpaper Research Organization, Athens, Greece)
In series: Computational Mathematics and Analysis
The present book deals with the computational recipes of the finite-part singular integral equations, the multidimensional singular integral equations and the non-linear singular integral equations, which are widely used in many fields of engineering mechanics and mathematical physics with an applied character, like elasticity, plasticity, thermoelastoplasticity, viscoelasticity, viscoplasticity, fracture mechanics, structural analysis, elastodynamics, fluid mechanics, potential flows, hydraulics and aerodynamics. Such types of linear and non-linear singular integral equations form the latest technology in the solution of very important problems of solid and fluid mechanics and therefore should be given special attention by the reader. The Singular Integral Operators Method (S.I.O.M.) is introduced and investigated for the numerical evaluation of the multidimensional singular integral equations. This approximation method in many cases offers important advantages over “domain” type solutions, like finite elements and finite difference, as well as analytical methods such as complex variable methods. Additionally, a special field of applied mechanics is introduced, named as Relativistic Mechanics, which is a combination of the classical theory of elasticity and general relativity. Relativistic Mechanics has two main branches: Relativistic Elasticity and Relativistic Thermo-Elasticity and according to the above theory, the relative stress tensor for moving structures has been formulated and a formula has been given between the relative stress tensor and the absolute stress tensor of the stationary frame. This leads to the Universal Equation of Elasticity and the Universal Equation of Thermo-Elasticity.

Computational Recipes of Linear and Non-Linear Singular Integral Equations and Relativistic Mechanics in Engineering and Applied Science. Volume II
Evangelos G. Ladopoulos (Civil Engineer, Mechanical Engineer, Interpaper Research Organization, Athens, Greece)
In series: Computational Mathematics and Analysis
Hardcover: 978-1-63482-451-4. $190.00.
The present book deals with the computational recipes of the finite-part singular integral equations, the multidimensional singular integral equations and the non-linear singular integral equations, which are widely used in many fields of engineering mechanics and mathematical physics with an applied character, like elasticity, plasticity, thermoelastoplasticity, viscoelasticity, viscoplasticity, fracture mechanics, structural analysis, elastodynamics, fluid mechanics,
potential flows, hydraulics and aerodynamics. Such types of linear and non-linear singular integral equations form the latest technology of very important problems of solid and fluid mechanics, which should be given special attention by the reader. The Singular Integral Operators Method (S.I.O.M.) is introduced and investigated for the numerical evaluation of the multidimensional singular integral equations. This approximation method in many cases offers important advantages over "domain" type solutions, like finite elements and finite difference, as well as analytical methods such as complex variable methods. Additionally, a special field of applied mechanics is introduced, named as Relativistic Mechanics, which is a combination of the classical theory of elasticity and general relativity. Relativistic Mechanics has two main branches: Relativistic Elasticity and Relativistic Thermo-Elasticity and according to the above theory, the relative stress tensor for moving structures has been formulated and a formula has been given between the relative stress tensor and the absolute stress tensor of the stationary frame. This leads to the Universal Equation of Elasticity and the Universal Equation of Thermo-Elasticity.


Kartlos Joseph Kachiashvili, D.Yu. Melikdzhanian and A.I. Prangishvili (Technical University, Georgia)
In series: Mathematics Research Developments

Hardcover: 978-1-63463-683-4. $185.00.
e-book: 978-1-63463-714-5. $185.00.
Algorithms were always an important part of many branches in the sciences. In many manuals and handbooks, algorithms of problems of computational mathematics are focused on the manual performance or by means of a calculator. In this book, descriptions of algorithms, their solutions and main characteristics are discussed. The present work is the outcome of many years of the authors’ work on solving different problems and tasks from domains of instruction making, metrology, system analysis, ecology, data analysis from ecology, agriculture, medicine and creation of corresponding universal computer packages and systems.


Kartlos Joseph Kachiashvili, D.Yu. Melikdzhanian and A.I. Prangishvili (Technical University, Georgia)
In series: Mathematics Research Developments

Hardcover: 978-1-63463-684-1. $185.00.
Algorithms were always an important part of many branches in the sciences. In many manuals and handbooks, algorithms of problems of computational mathematics are focused on the manual performance or by means of a calculator. In this book, descriptions of algorithms, their solutions and main characteristics are discussed. The present work is the outcome of many years of the authors’ work on solving different problems and tasks from domains of instruction making, metrology, system analysis, ecology, data analysis from ecology, agriculture, medicine and creation of corresponding universal computer packages and systems.

Federal Influence on Innovation: Policy Effects and Proposals

Rachael A. Young
In series: Economic Issues, Problems and Perspectives

Hardcover: 978-1-63463-627-8. $120.00.

In this book, the Congressional Budget Office (CBO) examines the effects on innovation of existing policies and systems and the possible effects of a variety of proposals for changing those policies and systems. This book also discusses the current status of the research tax credit; the role of trade secrets in innovation policy; and the patent system for specific industries.

Foundations of Iso-Differential Calculus. Volume 4: Iso-Dynamic Equations

Svetlin Georgiev (Faculty of Mathematics and Informatics, Department of Differential Equations, Sofia University, Sofia, Bulgaria)
In series: Mathematics Research Developments

Hardcover: 978-1-63482-016-5. $170.00.
This book is intended for readers who have had or currently have a course in difference equations or iso-differential calculus. It can be used for a senior undergraduate course. Chapter 1 deals with the linear first-order iso-difference equations, equilibrium points, eventually equilibrium points, periodic points and cycles. Chapter 2 is introduces iso-difference calculus and the general theory of the linear homogeneous and nonhomogeneous iso-difference equations. Chapter 3 studies the systems of linear iso-difference equations and the linear periodic systems. Chapter 4 is devoted to the stability theory. They are considered the nonautonomous linear systems, Lyapunov's direct method, and stability by linear approximation. Chapter 5 discusses the oscillation theory. The oscillation theory is defined as the iso-self-adjoint second-order iso-difference equations and they are given some of their properties. They are considered some classes of nonlinear iso-difference equations. Chapter 6 studies the asymptotic behavior of some classes of iso-difference equations. Time scales iso-calculus is introduced in Chapter 7. They are given the main properties of the backward and forward jump iso-operators. They are considered the iso-differentiation and iso-integration. They are introduced as the iso-Hilger's complex plane and the iso-exponential function.

Foundations of Iso-Differential Calculus. Volume 5: Iso-Stochastic Differential Equations

Svetlin Georgiev (Faculty of Mathematics and Informatics, Department of Differential Equations, Sofia University, Sofia, Bulgaria)
In series: Mathematics Research Developments

Hardcover: 978-1-63482-146-9. $190.00.
This book is intended for readers who have had a course in iso-differential calculus and theory of probability. It can be used for a senior undergraduate course.
Functional Analysis and Probability
Mark Burgin (Department of Mathematics, University of California, Los Angeles, CA, USA)
Hardcover: 978-1-63482-619-8, $230.00.


Game Theory and Applications, Volume 17: Game-Theoretic Models in Mathematical Ecology
Vladimir Mazalov, Dmitry Novikov, Guennady Ougolnitsky and Leon Petrosjan (Institute of Applied Mathematical Research, Karelian Research Center RAS, Russian Federation)
In series: Game Theory and Applications
Edited by: Leon Petrosjan and Vladimir V. Mazalov (St. Petersburg State University, Russia) 2015. 247 pp.
Hardcover: 978-1-63483-489-6, $110.00.
The idea of this book is to demonstrate the tendency of modern research in mathematical ecology using the optimal control theory and game-theoretic methods. The book introduces the modelling of environmental systems through conceptual game-theoretic models, showing the importance of the equilibrium behavior under resource extraction. Using discrete and continuous models of biological and physical processes, the behavior of ecological-economic systems is represented by models with analytic or numerical solutions. A range of mathematical methods including analytic and approximate methods for equilibrium definition, cooperative and collective behavior determination are used to explore such models. The main feature of the presented investigations is characterized by time consistent, stabilized, collective and cooperative concepts in ecological-economic systems. This book is recommended for researchers and post-graduate students of management, economic and in the applied mathematics departments.

Ordinary and Partial Differential Equations
Raymond Brewer
In series: Mathematics Research Developments 2015.
Hardcover: 978-1-63483-227-4, $110.00.

Disease in the prey population increases the risk of prey outcomes in predation or to be harvested. In this book, an eco-epidemiological model consisting of predator-prey model with SIS disease in the prey population is proposed and analyzed. Furthermore, the authors discuss a mathematical S-E-I-L (Susceptible-Latently infected-Infected-Lost of sight) model for the spread of a directly transmitted infectious disease in an age-structured population; examine how starting from the classical Chebyshev ordinary differential equation (ODE), a generic realization of its Lie algebra of point symmetries sl(3;R) is obtained in terms of the Chebyshev polynomials of first and second kind; and give a comparative summary of different recent contributions to the theme of the linear stability and nonlinear dynamics of solitary waves in the nonlinear Dirac equation in the form of the Gross-Neveu model.

Structural Equation Modeling (SEM): Concepts, Applications and Misconceptions
Larry Rivera

Hardcover: 978-1-63482-892-5, $110.00.

Structural equation modeling (SEM) is a general, cross-sectional statistical modeling technique. The chapters in this book propose a Bayesian approach based on SEM; an examination of predictors and outcomes related to school climate using latent class analysis and the testing of specific effects and contrasts in three types of mediation models followed by a discussion on the common types of mediation models and their different types of effects.

Partial Differential Equations: Classification, Properties and Applications
Deborah E. Richards
Hardcover: 978-1-63482-643-3, $190.00.
e-book: 978-1-63482-754-6, $190.00.

This book includes research on the Lax-Milgram theorem, which can be used to prove existence and uniqueness of weak solutions to partial differential equations and several examples of its application to relevant boundary value problems are presented. The authors also investigate nonlinear control problems for couple partial differential equations arising from climate and circulation dynamics in the equatorial zone; the integration of partial differential equations (PDE) with the help of non-commutative analysis over octonions and Cayley-Dickson algebras; and the existence and properties of solutions, applications in sequential optimal control with pointwise in time state constraints.

Sub-Independence: A Useful Concept
G.G. Hamedani and Mehdi Maadooliat
(Mathematics, Statistics and Computer Science, Marquette University, WI, US)
Softcover: 978-1-63463-476-2, $62.00.

The concept of sub-independence is defined in terms of the convolution of the distributions of random variables, providing a stronger sense of dissociation between random variables than that of uncorrelatedness. If statistical tests reject independence but not lack of correlation, a model with sub-independent components can be appropriate to determine the distribution of the sum of the random variables. This monograph presents most of the important classical results in probability and statistics based on the concept of sub-independence. This concept is much weaker than that of independence and yet can replace independence in most limit theorems as well as well-known results in probability and statistics. This monograph, the first of its kind on the concept of sub-independence, should appeal to researchers in applied sciences where the lack of independence of the uncorrelated random variables may be apparent but the distribution of their sum may not be tractable.

MECHANICAL ENGINEERING

Additive Manufacturing: Costs, Cost Effectiveness and Industry Economics
Felipe Brewer
Hardcover: 978-1-63483-364-6, $145.00.
The use of additive manufacturing has increased significantly in previous years. Additive manufacturing is used by multiple industry subsectors, including motor vehicles, aerospace, machinery, electronics, and medical products. Currently, however, additive manufactured products represent less than one percent of all manufactured products in the U.S. As the costs of additive manufacturing systems decrease, this technology may change the way that consumers interact with producers. Additive manufacturing technology opens up new opportunities for the economy and society. It can facilitate the customized production of strong light-weight products and it allows designs that were not possible with previous manufacturing techniques. This book provides aggregate manufacturing industry data and industry subsector data to develop a quantitative depiction of the U.S. additive manufacturing industry.

**Mechatronics: Principles, Technologies and Applications**

Eugenio Brusa (Dip. Ingegneria Meccanica e Aerospaziale, Politecnico Di Torino, Corso Duca Degli Abruzzi, Torino, Italy)

In series: Mechanical Engineering Theory and Applications

Hardcover: 978-1-63482-801-7. $190.00.

Mastering the art of ‘mechatronics’ currently looks like one of the most attractive tasks of modern engineering technology and science. Many applications resort to the interdisciplinary approach of mechatronics to enhance the performance, quality and safety of either product or process. Some are very traditional (like hard disk drives, biomedical, automotive and aerospace systems) while others are fairly new (like micro and nano electromechanical systems, unmanned air vehicles, intelligent machining, manufacturing systems or bioinspired devices). This book describes some practical examples, which demonstrate how different competences, disciplines and technologies meet in an innovative mechatronic system. They deal with several domains like advancements in neonatal intensive care, hypoxic-ischaemic brain injury of term and near-term infants remains a significant problem throughout the world. After asphyxia, infants may suffer from long-term neurological sequelae, including death, cerebral palsy, learning difficulties, epilepsy and other significant cognitive, developmental and behavioral problems in 40% of survivors. This book discusses the risk factors, prevalence and neurological impacts of asphyxia.

**Model Predictive Control: Theory, Practices and Future Challenges**

Corrine Wade

In series: Mechanical Engineering Theory and Applications


Although industrial processes are inherently nonlinear, many contributions for controller design for those plants are based on the assumption of a linear model of the system. However, in some cases it is difficult to represent a given process using a linear model. Model Predictive Control (MPC) is an optimal control approach which can effectively deal with constraints and multivariable processes in industries. Because of its advantages, MPC has been widely applied in automotive and process control communities. This book discusses the theory, practices and future challenges of model predictive control.

**Natural Ventilation: Strategies, Health Implications and Impacts on the Environment**

Oscar T. Haynes

In series: Mechanical Engineering Theory and Applications


Despite the continuous effort from the scientific community and the advancements in neonatal intensive care, hypoxic-ischaemic brain injury of term and near-term infants remains a significant problem throughout the world. After asphyxia, infants may suffer from long-term neurological sequelae, including death, cerebral palsy, learning difficulties, epilepsy and other significant cognitive, developmental and behavioral problems in 40% of survivors. This book discusses the risk factors, prevalence and neurological impacts of asphyxia.

**Organ Manufacturing**

Xiaohong Wang (Center of Organ Manufacturing, Department of Mechanical Engineering, Tsinghua University, Beijing, China)

In series: Mechanical Engineering Theory and Applications

Hardcover: 978-1-63482-957-1. $270.00.
This is the first time that human organs, such as the heart, liver, kidney, stomach, uterus, skin, lung, pancreas and breast can be manufactured automatically and precisely for clinical transplantation, drug screening and metabolism model establishment. Headed by Professor Xiaohong Wang (also the founder and director) in the Center of Organ Manufacturing, Department of Mechanical Engineering, Tsinghua University, this group has focused on organ manufacturing for over ten years. A series of technical bottleneck problems, such as vascular and nerve system establishment in a construct, multiple cell types and material system incorporation, and stem cell segmental engagement, have been overcome one by one. Two technical approaches have been exploited extensively. One is multiple nozzle rapid prototyping (RP), additive manufacturing (AM), or three-dimension (3D) printing. The other is combined mold systems. More than 110 articles and 40 patents with a series of theories and practices have been published consequently. In the future, all the failed organs (including the brain) in the human body can be substituted easily like a small accessory part in a car. Everyone can get benefit from these techniques, which ultimately means that the lifespan of humans, therefore, can be greatly prolonged from this time point. This book examines the progress made in the field and the developments made by these researchers (and authors) in the field.

Progress in Microscale and Nanoscale Thermal and Fluid Sciences
Lixin Cheng (Department of Engineering, Aarhus University, Denmark)
In series: Mechanical Engineering Theory and Applications
Hardcover: 978-1-63463-983-5. $170.00.
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, chips cooling etc. have been becoming 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. Quite a few studies have been conducted to understand the very complex phenomena involved at microscale and nanoscale. 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 under investigation. 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.

Sliding Mode Control (SMC): Theory, Perspectives and Industrial Applications
David T. Ellis
In series: Mechanical Engineering Theory and Applications
2015.
Hardcover: 978-1-63483-091-1. $110.00.
Sliding mode control was first introduced in the 1950s. It is a nonlinear control technique with many unique properties. In this book, different aspects of SMC are explored. Chapters include new developments in research on a sliding mode governor for hydropower plants; integral sliding mode control (I-SMC) for a variable speed wind turbine system and a I-SMC method for load frequency control (LFC) of nonlinear power systems with wind turbines; the control of a stand-alone photovoltaic (PV) system; leader-follower-based formation control of a group of mobile robots; the application of Takagi-Sugeno (T-S) fuzzy model in coordinated control of multiple robots system; an induction motor speed control using the nonsingular terminal sliding-mode control method; adaptive nonsingular terminal sliding mode (NTSM) tracking control scheme based on backstepping design presented for Micro-Electro-Mechanical Systems (MEMS) vibratory gyroscopes; and a hybrid actuator and its control using a cascade sliding mode technique.

Stainless Steel: Microstructure, Mechanical Properties and Methods of Application
Alokesh Pramanik and Animesh Kumar Basak
(Department of Mechanical Engineering, Curtin University, Western Australia)
In series: Mechanical Engineering Theory and Applications
Hardcover: 978-1-63482-080-6. $170.00.
Stainless steel, termed as the ‘miracle metal’ is all around us in numerous applications ranging from everyday household items to sophisticated biomedical applications. Stainless steel is one of the fastest growing segments in metal industries. New developments and a wide range of research on stainless steel is taking place all around the world in order to obtain superior quality stainless steel and expand its applications to meet growing demands. Taking those facts into account, this book compiles recent developments in the properties, applications and further processing of stainless steel and recent research trends. The book includes high-tech characterization techniques of stainless steel to address the decomposition behaviour; decomposition-induced transformation to the correlated property-microstructure; powder metallurgy to produce difficult-to-cast stainless steel components, depassivation/repassivation behaviour, various surface treatment processes as well as a wide range of machining techniques to address the need of machinability of stainless steel.

MEDIA AND COMMUNICATIONS

Optical Communication Systems: Fundamentals, Techniques and Applications
Karla P. Boyd
In series: Media and Communications - Technologies, Policies and Challenges
Hardcover: 978-1-63482-833-8. $110.00.
Optical communication, also known as optical telecommunication, is communication at a distance using light to carry information. It can be performed visually or by using electronic devices. In this book, the authors propose systems of microring resonators (MRRs) that use localized spatial and temporal soliton pulses to form optical communication signals. The main advantage of using soliton pulses in optical communication systems is that the shape of the pulse remain almost unaltered over a long distance. The third chapter introduces digital signal processing for Nyquist-WDM systems. The last chapter in this book provides an in-depth analysis performed on the transmission, reflection and directive properties of nanoantennas.
MEDICINE

Endocrine Diseases: Risk Factors, Diagnosis and Management
Kenneth Hines
In series: Endocrinology Research and Clinical Developments
Hardcover: 978-1-63482-592-4. $110.00.
The human body's endocrine system includes eight major glands, which make hormones and travel through the bloodstream to tissues or organs. In this book, the authors' focus on the risk factors, genetics, diagnosis and management of gynecomastia (a benign condition characterized by enlargement of the male breast) and addresses the puzzling controversies surrounding menopausal hormone replacement therapy (HRT) and its health outcomes, which have been the subject of extensive investigation in recent years. The book concludes with a bibliography on recent titles published in the field that readers might find of interest.

NANOTECHNOLOGY

Advanced Materials - Studies and Applications
Ivan A. Parinov, Shun-Hsyung Chang and Somnuk Theerakulpisut (Vorovich Mechanics and Applied Mathematics Research Institute, Southern Federal University, Russia)
In series: Nanotechnology Science and Technology
Hardcover: 978-1-63463-749-7. $185.00.
Advanced materials and their applications based on nanotechnology and piezoelectric approaches are a tremendous interest in modern science and techniques. This book presents processing techniques, physics, mechanics, and applications of novel materials. The book concentrates on some nanostructures, ferro- and magnetoelectric crystals, materials and composites, materials for solar cells and polymeric composites. There are present nanotechnology approaches, modern piezoelectric techniques, and also studies of the structure-sensitive properties of the materials. Great attention is devoted to novel devices with high accuracy, longevity and extended possibilities to work with wide temperature and pressure ranges, which show characteristics defined by used materials and composites with improved properties opening new possibilities in the study of various physical processes, in particular the transmission and receipt of signals under water.

Advances in Nanotechnology. Volume 13
Zacharie Bartul and Jérôme Trenor
In series: Advances in Nanotechnology
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 preparation and characterization of gold nanoparticles in liquid solutions; Nano-ZnO reinforced poly(ether ether ketone) biocomposites; magnetic nanoparticles; nanostructured materials as catalyst supports in olefins polymerization; gold clusters and nanoparticles in zeolites and zeolite-like materials; hybrid dispersed magnetic nanomaterial with core-shell structure based on polydiphenylamine-2-carboxylic acid; hybrid magnetic nanomaterial based on polyphenoxazine and Co nanoparticles; synthesis, characterization and significant applications of PANI-Zr(IV)sulphosalicylate nanocomposite; and synthesis of manganese oxide nanoparticles using similar process and different precursors.

Advances in Nanotechnology. Volume 14
Zacharie Bartul and Jérôme Trenor
In series: Advances in Nanotechnology
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 nanotransporters for anticancer drug delivery; nanotechnologies for biomedical metallic materials; environmental contaminants detection and remediation using nanoparticles; two- and three-dimensional structure design of counter electrode based on carbon nanotube/graphene in dye-sensitized solar cells; clathrate hydrates and nano particles; nanoparticles formation via low pressure spray pyrolysis: physical fundamentals and puzzles; examination of non-agglomerated nanodiamonds inside aluminum matrix composites by synchrotron radiation; and fabrication of advanced nanosensors and their applications.

Capillary Electrophoresis (CE): Principles, Challenges and Applications
Christian Reed
In series: Nanotechnology Science and Technology
This book examines challenges and applications, as well as principles of capillary electrophoresis. Some of the topics discuss include the preparation and application of photosensitive capillary electrophoresis coatings; the application of capillary zone electrophoresis to trace analyses of inorganic anions in seawater; theoretical principles and applications of high performance capillary electrophoresis; and the application of capillary zone electrophoresis methods for polyphenols and organic acids to separate different extracts.

Comprehensive Guide for Nanocoatings Technology. Volume 1: Deposition and Mechanism
Mahmood Allokhazraei (Tarbiat Modares University, Faculty of Engineering, Department of Materials Engineering, Tehran, Iran)
In series: Nanotechnology Science and Technology
This is the first volume of a four volume set of the Comprehensive Guide for Nanocoatings Technology. Nanocoatings are a kind of thin film with at least one nanometric dimension. The main difference between nano and ordinary coatings is in their structure and properties. To recognize these differences, it is required to study the properties and structure of nanocoatings. The properties of every substance are controlled by their constituents. In this regard, properties of coatings depend on the constituent grains and particles. The chemical, physical, and mechanical properties of nanocoatings including their electrical resistivity, permeability, corrosion and abrasion resistance, and magnetic properties, which are a function of structure and particle size of coatings. It is evident that use of these features creates many...
potential applications. This volume mainly discusses the deposition and growth mechanism of nanocoatings. There are 16 chapters in this volume; each one includes examples of these interesting materials, supported by appropriate figures for better clarification.

**Comprehensive Guide for Nanocoatings Technology. Volume 2: Characterization and Reliability**

*Mahmood Aliofkhazraei (Tarbiat Modares University, Faculty of Engineering, Department of Materials Engineering, Tehran, Iran)*

In series: *Nanotechnology Science and Technology*


Hardcover: 978-1-63482-647-1, $230.00.

This is the second volume of the four volume set for the Comprehensive Guide for Nanocoatings Technology. This volume mainly discusses the characterization and reliability of nanocoatings. There are 16 chapters in this volume; each one includes examples of these interesting materials, supported by appropriate figures for better clarification.


*Mahmood Aliofkhazraei (Tarbiat Modares University, Faculty of Engineering, Department of Materials Engineering, Tehran, Iran)*

In series: *Nanotechnology Science and Technology*


Hardcover: 978-1-63482-648-8, $270.00.

This volume mainly discusses the properties and development of nanocoatings. There are 18 chapters in this volume; each one includes examples of these interesting materials, supported by appropriate figures for better clarification.

**Comprehensive Guide for Nanocoatings Technology. Volume 4: Application and Commercialization**

*Mahmood Aliofkhazraei (Tarbiat Modares University, Faculty of Engineering, Department of Materials Engineering, Tehran, Iran)*

In series: *Nanotechnology Science and Technology*


Hardcover: 978-1-63482-649-5, $270.00.

This volume mainly discusses the application and commercialization of nanocoating. There are seventeen chapters in this volume, each including examples of interesting materials supported by appropriate figures for better clarification.

**Innovations in Nanomaterials**

*Al-Nakib Chowdhury, Joe Shapter, and Abu Bin Imran (Department of Chemistry, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh)*

In series: *Nanotechnology Science and Technology*

2015.

Hardcover: 978-1-63483-548-0, $230.00.

Nanomaterials represent a world of new possibilities and exciting opportunities. The problems facing mankind currently and those it will face in the future are and will be incredibly complex. As such, novel and innovative solutions to these problems will have to be explored. Problems centered, for example, in supplying enough energy or water in the future will have to be solved via sustainable solutions, as it is now clear that the continuation of current practices for an ever-increasing load will mean irreparable damage to the planet. The solutions to these challenges and others will have to be based on new approaches. These novel approaches will have their foundations in the development of new materials and protocols. The rise of nanotechnology over the last fifteen years or so now provides the opportunity for development of innovative and ground breaking approaches to society’s pressing problems. This book provides a snapshot of the current development of new materials, ranging from nanoparticles to nanotubes to graphene to various hybrid materials and composites. These materials will without a doubt be the cornerstones of the novel approaches used to tackle mankind’s most pressing problems in the 21st century. Specifically, this book explores the application of graphene in membranes, electrodes, biological applications and catalysis. There is also a basic exploration of nanocarbon chemistry. Biological interactions with nanomaterials are explored to develop bionics, sensors, medicines or imaging agents, and to detect and assess the materials’ toxicity in various environments. Some fundamental work exploring nanostructures and transport properties is included and the use for such material as sensors, membranes or electrodes is discussed extensively.

**Nanoscale-Arranged Systems for Nanotechnology**

*Kirill L. Levie (General and Technical Physics, National Mineral Resources University, St. Petersburg, Russia)*

In series: *Nanotechnology Science and Technology*


Hardcover: 978-1-63482-353-1, $190.00.
e-book: 978-1-63482-354-8, $190.00.

In this research compendium volume of Smart Nanocomposites, various aspects related to nanoscale-arranged systems are discussed. Synthesis, characterization, modeling, and examples of practical usage are in the list of topics brought up in this book. In the discussion are unusual phase transition properties of some oxides, transport properties, electrochemical characterization methods, and optical, electronic, and chemo-sorption properties of nano-structured systems synthesized by various approaches.

**Piezoelectrics and Nanomaterials: Fundamentals, Developments and Applications**

*Ivan A. Parinov (Vorovich Mathematics, Mechanics and Computer Sciences Institute, Southern Federal University, Head of Laboratory, Russia)*

In series: *Nanotechnology Science and Technology*


Hardcover: 978-1-63483-319-6, $190.00.
e-book: 978-1-63483-351-6, $190.00.

The advanced materials, based on piezoelectric and nanotechnology approaches and their numerous applications are very important for modern science and techniques. Fast development of used theoretical, experimental and numerical methods caused by improvement of experimental equipment, theoretical and numerical approaches and computer hard- and software are analyzed. These achievements allow us to understand and estimate very fine processes and transformations occurring during processing, loading and operation of modern materials and devices under intense internal and external influences. This edited book, divided in ten chapters, is devoted to the fundamentals, developments and applications of modern piezoelectrics and nanomaterials.
**NATURAL DISASTERS**

Current International Perspectives on Wildland Fires, Mankind and the Environment

Brigitte Leblon (Faculty of Forestry and Environmental Management, University of New Brunswick, Canada) and Martin E. Alexander (Faculty of Agricultural, Life and Environmental Sciences, University of Alberta, Canada)

In series: Natural Disaster Research, Prediction and Mitigation

Hardcover: 978-1-63463-682-7. $185.00.

The book deals with the marginalization of a minority tribal group (the Lodhas) in the West Bengal state of India and the role of a democratic welfare state in improving the living conditions of the tribe. The Lodha tribal community of West Bengal has a long history of drawing the attention of administrators, anthropologists, social activists and the media. In the colonial times, this community was designated as a ‘criminal tribe’ and carried the social stigma during the post-colonial period, although the Government created category after category (e.g. ‘Denotified’ and ‘Primitive Tribal Group’) to designate this marginalized community. The grass root level reality, which emerged from media reports, anthropologists’ accounts and activists’ literature, revealed that the marginalization of the Lodhas continued long after the Independence of the country. What seemed to lacking in the long narrative of the Lodhas is an empirical, comprehensive and specific location based field study on the assessment of the various attempts by the Government and the administration towards the process of development of this marginalized tribal community of West Bengal. Under this broader context, this book is a modest attempt to make a location based empirical assessment of the ground realities of the development of the Lodhas, which revealed from the beginning until today, the governmental attempts towards the improvement of the living conditions of the community which were misplaced, and as a result, the funds remained wasted and did not work at all, although variations in terms of utilization were also observed. It is therefore recommended that a more careful and down to earth approach which is sensitive towards the needs of the community should be undertaken to demarginalize the Lodhas of West Bengal. The book would be helpful for the graduate students and instructors in Social Anthropology, Sociology, Political Science, Economics, History, Public Administration, Development Studies, Social Work and Rural Development. It will be also useful for doctoral level students in the various branches of social science. The book would be of use to the government officials, policy makers, NGO workers and other development practitioners working in the field.

**Cyclonic and Geomagnetic Storms: Predicting Factors, Formation and Environmental Impacts**

Victoria P. Banks

In series: Natural Disaster Research, Prediction and Mitigation

Hardcover: 978-1-63482-360-9. $110.00.

Solar activity causes changes in the magnetic field on the surface of the Earth. If these changes are insignificant, they do not affect life on Earth. However, rapid variations of the geomagnetic field, the so-called magnetic storms, which have the character of shock waves, may adversely affect living organisms (including humans), and the technical systems that people use. The book presents a conceptual design that allows prediction of electrical power system emergency conditions caused by magnetic storms. Finally, the authors’ present a comprehensive analysis of perturbations in the low- and mid-latitude ionosphere during moderate recurrent geomagnetic storms.

**Deep-Well Injections and Induced Seismicity:**

Understanding the Relationship (with accompanying CD-ROM)

James B. Fernandez

In series: Natural Disaster Research, Prediction and Mitigation

Hardcover: 978-1-63482-557-3. $120.00.
e-book: 978-1-63482-558-0. $120.00.

The development of unconventional oil and natural gas resources using horizontal drilling and hydraulic fracturing (fracking) has created new demand for wastewater disposal wells that inject waste fluids into deep geologic strata. An increasing concern in the United States is that injection of these fluids may be responsible for increasing rates of seismic activity. The U.S. Environmental Protection Agency (EPA) Underground Injection Control (UIC) program regulates injection of fluids related to oil and gas production as Class II injection wells for the protection of underground sources of drinking water (USDWs). Because seismic events from injection have the potential to cause endangerment of underground sources of drinking water, the UIC program director should be aware of that potential and be prepared with response options should seismic events become a concern. This purpose of this book is to discuss the relationship between deep-well injections and induced seismicity.

**NUCLEAR MATERIALS AND DISASTER RESEARCH**

Abandoned U.S. Uranium Mines: Locations, Radiation Hazards, Reclamation and Remediation (with accompanying CD-ROM)

Sabrina Myers

In series: Nuclear Materials and Disaster Research

Hardcover: 978-1-63483-068-3. $120.00.
e-book: 978-1-63483-069-0. $120.00.

The U.S. Department of Energy (DOE) defines an abandoned uranium mine (mine) as a named mine or complex developed to extract uranium ore for atomic energy defense-related activities of the United States from 1947 to 1970, as verified by purchase of ore by the U.S. Atomic Energy Commission (AEC) or other means. This book addresses five issues which include the location of defense-related abandoned uranium mines on federal, state, tribal, and private lands; the extent of radiation hazards, other public health and safety threats, and environmental degradation caused, or may have been caused, by the mines; a priority ranking to reclaim and remediate the mines; the potential cost and feasibility of reclamation and remediation in accordance with applicable federal law; and the status of any mine reclamation and remediation efforts. This book is accompanied by a CD-ROM which includes three reports on defense-related uranium mines locations; the radiological risk to human health and the environment; and prioritization.

**Biological Responses, Monitoring and Protection from Radiation Exposure**

K.P. Mishra, Ph.D. (Vice Chancellor, Nehru Gram Bharti University, Allahabad, India)

In series: Nuclear Materials and Disaster Research

Uranium migration properties are explored through the geological resources, including human society because of its uranium. It continues with the legacy of uranium mining and the Joachisthal silver mines. This book starts with a short history of uranium.

Uranium is a naturally occurring, ubiquitous heavy metal. In various e

Hardcover: 978-1-63463-852-4. $170.00.

This book deals with urgent and timely issues related to radiation health effects and protection that are examined by both young researchers as well as experts. The book is organized into three major sections: biological responses, population monitoring and approaches to protection from radiation exposure. Contributors have provided state of the art research in their respective chapters. Radiation action produces damage to multiple targets in the exposed cells or human body and understanding of molecular mechanisms of the underlying processes becomes central to the monitoring of effects and health consequences of radiation exposure. Many experts have highlighted the outcome of epidemiological studies on human populations in high background radiation areas in different locations around the world as well as consequences and scopes for mitigating radiation health effects after radiation accidents such as Chernobyl in Ukraine and the Fukushima Daiichi Accident in Japan. This book also provides important direction for treatment of radiation for exposed victims. In the concluding chapters, contributors have provided new approaches for protection against ionizing radiation exposure. This book contains rich content on basic aspects of radiation induced cellular response which may give deeper insight to beginners in research, teaching, industry and regulatory authorities for basic understanding of radiobiological processes and molecular mechanisms. The book will prove an authentic reference source for updates in radiation science. It is hoped that students, teachers, experts, safety officers, regulatory officials and policy-makers will find the book handy for gaining a broad view of radiation damage to biological systems, monitoring health consequences and for new approaches in developing effective protection against radiation exposure.

Nuclear Safety in the Wake of the Fukushima Daiichi Accident: Actions of Selected Countries

Glenn Freeman

In series: Nuclear Materials and Disaster Research
Hardcover: 978-1-63482-280-0. $120.00.
e-book: 978-1-63482-281-7. $120.00.

The March 2011 accident at Japan’s Fukushima Daiichi nuclear power plant led to a worldwide review of nuclear power programs. NRC licenses and oversees civilian nuclear reactors. The State Department coordinates policy matters with international organizations and treaties, including those dealing with nuclear safety. This book examines the actions nuclear regulatory bodies from selected countries have taken to strengthen nuclear safety; the extent to which these countries have established automated systems to collect and transmit accident data and steps international organizations have taken to support nuclear regulatory bodies and promote nuclear safety worldwide since the accident.

Uranium: Sources, Exposure and Environmental Effects

Joyce R. Nelson

In series: Nuclear Materials and Disaster Research
Hardcover: 978-1-63482-827-7. $190.00.

Uranium is a naturally occurring, ubiquitous heavy metal. In various chemical forms, natural uranium is found in all soils, rocks, seas and oceans. It is also present in drinking water and food. Uranium was discovered in 1781 by Klaprot, a pharmacist in Berlin, in the Joachisthal silver mines. This book starts with a short history of uranium. It continues with the legacy of uranium mining and the authors go on to discuss the environmental and health effects of depleted uranium, which has the unique potential to threaten all natural resources, including human society because of its radiotoxic effects. Uranium migration properties are explored through the geological structures and the groundwater systems based on the determination of its total concentration essential for environmental studies. Other chapters examine the recovery of uranium from phosphate rock; the influence of uranium on the environment and the studies of content of uranium in soil, building materials, drinking water and even in the urine of specific population such as in the Czech Republic, a uranium rich territory; the types of uranium deposits; uranium bioremediation as an eco-friendly, promising approach, which will play an irreplaceable role in global nuclear energy development; discussions on uranium as one of the most widespread contaminants in groundwater in mining areas, as well as in surface waters in Brazil; and an examination of fuel materials that have been developed for use in nuclear power reactors including uranium. Bulk uranium-based systems are very complex and it is difficult to draw unambiguous conclusion on their properties and reaction mechanisms from experiments. Therefore in this book, laboratory experiments using simple model systems - thin films, for single effect studies which have a ground-breaking nature are explored in detail in this book.

Oceanography

Coastal and Beach Erosion: Processes, Adaptation Strategies and Environmental Impacts

Dianna Barnes

In series: Coastal and Oceanic Landforms, Development and Management

The coastal environment is a dynamic system in which natural and human processes combine and interact, modifying geomorphological, physical and biological features, and in which beaches represent the most vulnerable areas. Coastal erosion is caused by many different processes like changes in prevailing wind direction, coastal currents, re-establishment of a new equilibrium profile, sea level rise, sea level fall, exceptional storms, hurricanes/cyclones, and tsunami events. This book discusses the processes, adaptation strategies and environmental impacts of coastal and beach erosion.

Ocean Acidification Strategic Research and Monitoring Plan

Elisabeth Irvine

In series: Oceanography and Ocean Engineering
Hardcover: 978-1-63482-059-2. $120.00.
e-book: 978-1-63482-060-8. $120.00.

Ocean acidification is the process whereby seawater becomes less alkaline (or more acidic). It is a concern to Congress because of the potential harm ocean acidification may cause to marine resources, and resource dependent industries and communities. The chemistry of the Earth's oceans is changing as increasing amounts of anthropogenic carbon dioxide from the atmosphere dissolves into the water. The intent of this book is to guide research and monitoring investments that will improve our understanding of ocean acidification and its potential impacts on marine species and ecosystems. It will further the development of adaptation and mitigation strategies to conserve marine organisms and the resources and services provided by the ecosystems in which they live.
OPTICS AND LASERS

Laser Ablation: Fundamentals, Methods and Applications
Christoph Gerhard, Stephan Wieneke, and Wolfgang Viöl (University of Applied Sciences and Arts, Laboratory for Laser and Plasma Technologies, Von-Ossietzky-Stræe, Göttingen, Germany)
In series: Lasers and Electro-Optics Research and Technology
Hardcover: 978-1-63482-589-4. $190.00.

Laser ablation is an established and versatile tool in modern manufacturing. At the same time, the basics and applications of laser ablation are the subject of numerous current research studies. Both facts demonstrate a huge interest in the topic as well as the enormous potential of this technique for a number of applications, such as laser materials processing and laser-based materials testing. This book, “Laser Ablation – Fundamentals, Methods and Applications”, addresses scientists, researchers and application engineers who work in the continuously growing field of laser ablation. It also acts as a reference book for professors, lecturers and students of corresponding study courses or professional training programs. Written by an international board of authors, this book provides an overview on laser sources used for laser ablation, the basics of laser beam guidance and shaping as well as laser-matter-interactions and the main underlying mechanisms of laser ablation. Different laser-based material processing and modification methods along with specific applications and recent developments of laser ablation techniques are presented. Laser-plasma-hybrid techniques, the laser-based fabrication of nanoparticles and heterostructures, and laser surface functionalization are merely some of the methods aforementioned. Furthermore, several laser-induced effects are discussed against the background of relevant applications in microelectronics, photovoltaics, packaging and patterning.

PHARMACOLOGY

Simvastatin Delivery: Challenges and Opportunities
Alberto A. C. C. Pais, João J. S. Sousa and Carla Vitorino (Department of Chemistry, University of Coimbra, Rua Larga, Coimbra, Portugal)
In series: Pharmacology - Research, Safety Testing and Regulation

This book presents an overview of recent developments for an “old drug”, simvastatin. It belongs to the class of statins, the most commonly prescribed drugs for the treatment of dyslipidemia or related diseases, being considered of superior effectiveness for that purpose. Now, millions of patients benefit from the use of simvastatin in preventing coronary heart disease (25 million in 2005 in the United States alone). Additionally, simvastatin has been recently identified as a multifaceted drug, addressing different physiological and pathological conditions, thus extending beyond the conventional cholesterol-dependent mechanisms. It has triggered the development of new strategies in order to promote the respective delivery through novel routes of administration. In this book, a comprehensive selection of topics is presented, encompassing aspects that firstly include chemical synthesis, pharmacology and pharmacoeconomics. In the second part, several delivery systems for new therapeutic areas are explored. These comprise of nanoemulsions administered through the parenteral route, nanostructured lipid carriers for transdermal delivery and supramolecular systems for local applications. Cancer therapy and bone regeneration are some of the therapeutic targets addressed along with the classical treatment of hypercholesterolemia, now in drug combination therapies. This book benefits from the participation of recognized experts from different areas. These include researchers from pharmaceutical technology, pharmacology, synthetic chemistry, and members of regulatory boards.

PHYSICS

Advances in Applied Physics Research
Gabriel Waters
In series: Physics Research and Technology

This new book presents and discusses current research in the field of applied physics. Topics discussed include radiation effects in piezoelectric AlGaN/GaN heterostructures; fluorescence resonance energy transfer between CdTe quantum dots and organic dye; and band offsets in dielectric/InGaZnO4 thin film transistors.

Advances in Dark Energy Research
Miranda L. Ortíz
In series: Physics Research and Technology
Hardcover: 978-1-63483-090-4. $160.00.

This book addresses the latest advances in dark energy research, including addressing the problem with regard to both the origin of dark energy and the origin of dark matter; vacuum energy as the origin of accelerating expansion and issues which arise from such a hypothesis; born reciprocity and cosmic accelerations; cosmic acceleration for harmonic gravitational connections; showing time as a function of the cosmological comoving distance, using the Friedmann-Lemaître-Robertson-Walker model, the dark energy problem using a theory with a minimal length on the order of Planck’s length; and a discussion on the kinematic aspects of the accelerated universe expansion process.

Advances in General Relativity Research
Cameron Williams
In series: Physics Research and Technology
2015.

This book addresses the latest advances in general relativity research, including the classical world and spinor formalisms; keys to understanding gravity; the continuum mechanics of space-time; new evidences on matter without energy-stress tensor; a new approach to study gravitational stability of the solutions to the Einstein equations; Mord theory; polynumbers field theory; the algebra, geometry and physics of hyperland; S2-like star orbits near the galactic center in RN and Yukawa gravity; geodesic analysis in multidimensional gravity models; and the collapsing of general relativity and the singularity in the event of the Big Bang and black holes.

Advances in Solitons Research
Alison Abbott
In series: Physics Research and Technology
2015.
Hardcover: 978-1-63483-640-1. $110.00.
The term “soliton” was coined only in 1965, to reflect the particle-like nature of solitary waves that remain intact even after mutual collisions. The book includes the latest developments in the field, including the main properties of erupting solids, considering the case of optical fiber systems described by the complex Ginzburg-Landau equation (CGLE); the propagation of ultrashort solitons in fiber-optic systems in the presence of intrapulse Raman scattering; the connection between rogue waves and modulation instability; the properties of solitary waves in coupled electrical nonlinear transmission lines; the results of experimental observations of solitary waves and their interactions, the engineering applications based on the management of solitary waves on coupled NLTIs; and finally, the effects of inhomogeneous exchange within ferromagnetic insulators.

Einstein and Others: Unification
Valeriy V. Dvoeglazov (Univ. de Zacatecas, Zacatecas, Mexico)
In series: Contemporary Fundamental Physics
Edited by: Valeriy V. Dvoeglazov (Univ. de Zacatecas, Zacatecas, Mexico)
Hardcover: 978-1-63463-276-8. $170.00.
We continue the Book Series “Contemporary Fundamental Physics”. The thematic issue “Einstein and Others: Unification” contains articles related to the problem of the unification of interactions and to other fundamental problems of the modern physics. The book includes an Editorial Introduction, and nine articles. This book may be considered as continuation of the books “Einstein and Poincaré: The Physical Vacuum” and “Einstein and Hilbert: Dark Matter”, published by us a few years ago. The authors are: S. Capozziello, M. De Laurentis, L. Fabbri and S. Vignolo, D. J. Cirilo Lombardo, S. I. Kruglov, V. V. Varlamov and M. V. Beloborodova, C. Pierre, W. A. Rodrigues Jr. and E. Capelas de Oliveira, A. Krasulin, and V. V. Dvoeglazov.

Fusion Energy and Power: Applications, Technologies and Challenges
Lionel Romero
In series: Physics Research and Technology
Hardcover: 978-1-63482-548-1. $110.00.
The worldwide fusion community continues its research efforts on magnetic confinement as the most promising, long-term, environmentally-friendly power source. Despite the ongoing fusion research efforts in many countries, the technology and materials-related challenges remain formidable and will hinder and delay the first fusion demonstration plant for decades. In this book, the current understanding of technology-related challenges facing fusion research are explored. Advances in fusion neutronics integral experiments in the benchmark mock assemblies for the blanket of a fusion-fission hybrid energy reactor are also described in brief. Cold Fusion (CF) is examined as well, with the authors’ argument backed by evidence that cold fusion (CF) can become more understandable, and hence more enable to engineering, especially control engineering. The final chapter details the Force Free Helical Reactor (FFHR) and its implications on fusion power.

Gauge Theories and Differential Geometry
Lance Bailey
In series: Mathematics Research Developments
In series: Physics Research and Technology
2015.
Hardcover: 978-1-63483-546-6. $190.00.
This book revisits the mathematical foundations of thermodynamics and gauge theory by using new differential geometric methods coming from the formal theory of systems of partial differential equations and Lie pseudogroups. The gauge theory of gravity is also established, in which spinorial and ventorial matter fields serve as gravitating sources. The potential applications of the present gauge theory of gravity, including quantum-vacuum-energy gravity, cosmological constant problem and gravity-gauge unification is also addressed. The third chapter focuses on a gravitational gauge theory with spin connection and vierbein as fundamental variables of gravity. Next, the place and physical significance of Poincaré gauge theory of gravity (PGTG) in the framework of gauge approach to gravitation is discussed. A cutoff regularization method in gauge theory is discussed in Chapter Five. The remaining chapters in the book focus on differential geometry, in particular, the authors show how fractional differential derived from fractional difference provides a basis to expand a theory of fractional differential geometry which would apply to non-differentiable manifolds; a review of the infinitesimal Baker-Campbell-Hausdorff formula is provided and the book concludes with a short communication where the authors focus on local stability, and describe how this leads naturally into the question of finite-time singularities and generalized soliton solutions.

Horizons in World Physics. Volume 283
Albert Reimer
In series: Horizons in World Physics
2015. 228 pp.
Hardcover: 978-1-63482-500-9. $190.00.
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 results across a broad spectrum, including radiation of axions and neutrinos from the center of the milky way; foundations of modern Hamiltonian biomechanics; the Earth’s natural pulsed electromagnetic field in a very-low frequency band; theoretical review of magnetic excitation and optical characteristics of LaCoO3 compound; screening dependence study of driving forces for atomic migration in dilute alloys; and new trends in the gravitational lenses modeling.

Horizons in World Physics. Volume 284
Albert Reimer
In series: Horizons in World Physics
Hardcover: 978-1-63482-661-7. $190.00.
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 results across a broad spectrum, including novel ways for manufacturing extremely high-effective solar cells; the possibility of superluminal computing for hypercomputation; selected problems of philosophical reflection of freedom in physics; quantum entanglement in connection with dark energy- from historical to modern theories; laser-induced breakdown and detonation in gas-particle and gas-droplet mixtures; the paleo classical interpretation of quantum theory; and minimal length, measurability, continuous and discrete theories.

Horizons in World Physics. Volume 285
Albert Reimer
In series: Horizons in World Physics
Hardcover: 978-1-63482-826-0. $190.00.
In this next volume of Horizons in World Physics, chapters include research on a low-energy theory of the Nambu-Goldstone excitation spectrum and the corresponding speed of sound of an interacting Fermi
mixture of Lithium-6 and Potassium-40 atoms in a two-dimensional optical lattice; the scientifically difficult subject of physics of shocks in plasma; hydrothermal synthesis as a method for synthesis of nanotubes; an alternative to the Higgs Mechanism; a possible revision in the current corpuscular photon model; an examination of the nature of a new kind of space-time curvature effects; radial systems of dark globules in the Southern Hemisphere; possible correlations among physical frames and quantum mechanics; and the role of neutral mesons in electromagnetic and nuclear forces.

**Horizons in World Physics. Volume 286**

*Albert Reimer*


This book presents the latest developments in world physics, including chapters on the origin, types and prospect of gamma-ray bursts (GRBs); a phenomenological model for studying the acceleration of particles in relativistic shocks and their synchrotron and Compton emission; a new search method of sources of arrival direction particles of ultrahigh energy; a review of the recent works where it is revealed, for the first time, the nuclear spin effects in living Nature; laser induced fluorescence spectroscopy (LIF) techniques, its main principles and applications and its uses in the detection of molecular species such as OH radicals and in direct current magnetron sputtering (DCMS); research on the formation of the heterogeneous mangles inside the moon by solar neutrons; an overview of silica fibers, paying particular attention to their dispersive and nonlinear properties, which have been developed in recent years to enhance the supercontinuum generation; and a demonstration on how the changing of dilatonic coupling function changing in black-hole like solutions could provide some information about model parameters, working within the frames of the gravity model from Einstein-dilaton-Gauss-Bonnet (EDGB) string inspired theory.

**Manganese-Based Thin Films and Heterojunctions**

*Zhigao Sheng, Ling Hu and Yuping Sun (High Magnetic Field Laboratory, Key Laboratory of Materials Physics, Institute of Solid State Physics, Chinese Academy of Sciences, Anhui, P.R. China)*


Mixed-valence manganites have attracted considerable attention since the late 19th century. The intriguing interplay of charge, spin and orbital ordering in the manganites systems superimposed by interface/surface effects provides a scientific platform beneficial for both fundamental and application-oriented research. The fundamental basis for understanding physical properties and designing new functionalities of manganites is the concept of the symmetry of order parameters which can be manipulated by controlling the interplay of electronic degrees of freedom. This book explores the possibility of externally modifying the properties of manganite based thin films and heterojunctions by epitaxial strain or artificial boundaries, which could give us new insights to generating properties at the interface between film and heterointerface. The book describes some of the sophisticated concepts concerning manganese-based films and heterojunctions in detail, bringing us closer than ever to understanding the research progress and main trends. What we can learn from the book is highly thought-provoking: the explanation of the strain stabilization and strain induced effects in manganite based films and heterointerfaces; the comparison between electrical transport in manganite based heterojunctions and semiconductor junctions; and, in particular, the interpretation of the photinduced and photovoltaic effect in manganite based films and heterojunctions. Furthermore, the magneto-tunability at the manganite based heterointerfaces leading to the design of new functionalities will be highlighted at last.

**New Developments in Quantum Optics Research**

*Nicole Stewart*


This book focuses on new developments in quantum optics research. Chapters include computer-aided design (CAD) flow for large-scale quantum circuits; the effects of cooperation between the Stokes and anti-Stokes modes in Raman scattering processes and an analysis of the different properties, such as entanglement and quantum degree of polarization for two-mode states of the radiation field which is of great importance for a deeper understanding of the correlations that occur in the system.

**New Research on Quantum Entanglement**

*Lori Watson*


Quantum entanglement is a quantum mechanical phenomenon with applications in various fields. This book includes research on the time travel hypothesis, in the context of general relativity, the fundamental importance in the open quantum systems theory of the border line between "system" and "environment" and its applications; and a scheme of ghost imaging and the physics behind it with two EPR states.

**Non-linear Cooperative Effects in Open Quantum Systems: Entanglement and Second Order Coherence**

*Nicolae Alexandru Enaki (Quantum Optics and Kinetic Processes Lab, Institute of Applied Physics, Academy of Sciences of Moldova, Chisinau, Republic of Moldova)*


This monograph, "Non-linear Cooperative Effects in Open Quantum Systems: Entanglement and Second Order Coherence" is dedicated to the large auditory of specialists interested in the modern approaches in quantum open systems, cooperative phenomena between excited atoms and the field of the non-linear interaction. Special attention is dedicated to the problems of non-linear interaction with vacuum fields and thermostat with finite temperature, but quantum aspects of laser generation of light in non-linear interaction with finite numbers of cavity modes remain the center of attention. In many situations, the limit to the traditional cooperative phenomena of open quantum systems and thermodynamics are taken into consideration. As the book contains the class of non-linear effects of generations of the particle in such cooperative phenomena, the author’s aim was to describe squeezed problems and affect entanglement between the generation photons and phonons in cooperative processes. The new phenomenon of cooperative emission in the single- and two-quantum processes are carefully described for large audiences of specialists in the field of quantum optics and condensed matter physics, chemistry and biology.
Nonlinear Quantum Mechanics and its Applications
Pang Xiao Feng (Institute of Life Science and Technology, University of Electronic Science and Technology of China, Sichuan, China)
In series: Classical and Quantum Mechanics
This book describes complete nonlinear quantum mechanics, in which the fundamental and necessity theoretical principle and wave-particle duality of microscopic particles were the foundation of this principle and its experimental evidences, the mechanisms of generation of the nonlinear interactions and its effects, as well as the methods solving nonlinear quantum mechanical problems, its distinctions with linear quantum mechanics and early nonlinear quantum mechanical idea and models, the completeness and correctness and universality of new theory as well as its applications in different systems containing polymers, physical and biological systems, which are exhibited in this book. Plenty of interesting results of these systems and a large number of novel properties of microscopic particles including the electron, proton, phonon, photon, exciton, polaron, magnon and Boson involving their localizations and classical features are stated in detail. This book is intended for researchers, teachers, graduate students, and upper level undergraduate students.

Quantum Spacetime: Mimicry of Paths and Black Holes
Marco Spaans (Kapteyn Astronomical Institute, University of Groningen, Groningen, The Netherlands)
In series: Classical and Quantum Mechanics
e-book: 978-1-63482-735-5. $110.00.
Since its inception, general relativity has been unresponsive to a marriage with the quantum aspects of our universe. Following the ideas of Einstein, one may pursue an approach that allows spacetime itself to take centre stage. The quantum properties of matter are then carried by the dynamics of spacetime shape and connectivity. This monograph introduces the reader to the foundations of quantum spacetime in a manner accessible to researchers and students. Likewise, interested laymen that lack a strong background in quantum mechanics and early nonlinear quantum mechanical ideas and models, the completeness and correctness and universality of new theory as well as its applications in different systems containing polymers, physical and biological systems, which are exhibited in this book. Plenty of interesting results of these systems and a large number of novel properties of microscopic particles including the electron, proton, phonon, photon, exciton, polaron, magnon and Boson involving their localizations and classical features are stated in detail. This book is intended for researchers, teachers, graduate students, and upper level undergraduate students.

Biodegradable Polymers. Volume 1: Advancement in Biodegradation Study and Applications
Chih-Chang Chu (Cornell University, Ithaca, NY, USA)
In series: Polymer Science and Technology
These 2 volume books strive to provide to our readers the most up-to-date core information available in the published literature as well as our yet to be published studies with ample illustrations (total 416) on biodegradable polymers. Much of the information used in this book is from the authors’ own research activities over the past several decades. These 2 volume books contain a compilation of new developments in the creation and use of biodegradable polymers including the relatively new polymers designed from the ground up (i.e., designing new monomers), the modification of existing biodegradable polymers to achieve particular new goals and functions, new fabrication methods for better efficiency, purity and yields, new engineering methods to formulate existing biodegradable polymers into new physical forms, and new applications of existing or new biodegradable polymers in biomedical and environmental arenas. These 2 volume books contain a total of 28 chapters grouped under 2 volumes. Volume 1 has a total of 14 chapters and 2 sections: Section I Basic degradation study and phenomenon (6 chapters), and Section II Biomedical and environmental applications (8 chapters). Volume 2 has also 14 chapters, and focuses on newly designed biodegradable polymers, and their formulation into different physical forms. The chapters in both volumes have both new original articles and information and review articles with updated and new information. Although the bulk of the chapters in this book (> 90%) deal with issues in biomedical fields which are far more challenging, demanding, and costly to resolve, two chapters deal with use of biodegradable materials for environmental impacts. The books are designed for material and polymer scientists and engineers and biomedical engineers in both universities and in industries with an interest in the biomedical field. Biomaterial scientists and engineers, biomedical engineers and even medical professionals who have used implantable polymeric-based medical devices for their practice will find these books coverage of the latest developments and challenges useful either as a comprehensive review or an up to date report of the developments in the field of biodegradable polymers. The contributors include both academic scientists and research scientists in industry, from 10 different countries in North (USA) and South America (Brazil, Argentina), Asia (China, Korea, Singapore) and Europe (Germany, Italy, Spain, Portugal). Therefore, these 2 volume books are truly internationally as well as multidisciplinary-oriented, covering science and engineering without borders.

Spiner Structures in Geometry and Physics
Viktor Mikhailovich Red’kov, Olga Vladimirovna Veko, Elena Mikhailovna Ovsiyuk, Alexandru Oana, Mircea Neagu, and Vladimir Balan (Laboratory of Theoretical Physics, National Academy of Sciences of Belarus, Republic of Belarus)
In series: Physics Research and Technology
Hardcover: 978-1-63463-625-4. $270.00.
This book is devoted to investigating the spinor structures in particle physics and in polarization optics. In fact, it consists of two parts joined by the question: Which are the manifestations of spinor structures in different branches of physics. It is based on original research. The main idea is the statement that the physical understanding of geometry should be based on physical field theories. The book contains numerous topics with the accent on field theory, quantum mechanics and polarization optics of the light, and on the spinor approach.
Biodegradable Polymers. Volume 2: New Biomaterial Advancement and Challenges
Chih-Chang Chu (Biomedical Engineering Program, Dept. of Fiber Science and Apparel Design, Cornell University, Ithaca, New York, USA)
In series: Polymer Science and Technology
Hardcover: 978-1-63483-633-3. $270.00.
These 2 volume books strive to provide to our readers the most up-to-date core information available in the published literature as well as our yet to be published studies with ample illustrations (total 416) on biodegradable polymers. Much of the information used in this book is from the authors’ own research activities over the past several decades. These 2 volume books contain a compilation of new developments in the creation and use of biodegradable polymers including the relatively new polymers designed from the ground up (i.e., designing new monomers), the modification of existing biodegradable polymers to achieve particular new goals and functions, new fabrication methods for better efficiency, purity and yields, new engineering methods to formulate existing biodegradable polymers into new physical forms, and new applications of existing or new biodegradable polymers in biomedical and environmental arenas. These 2 volume books contain a total of 28 chapters grouped under 2 volumes. Volume 1 has a total of 14 chapters and 2 sections: Section I Basic degradation study and phenomenon (6 chapters), and Section II Biomedical and environmental applications (8 chapters). Volume 2 has also 14 chapters, and focuses on newly designed biodegradable polymers, and their formulation into different physical forms. The chapters in both volumes have both new original articles and information and review articles with updated and new information. Although the bulk of the chapters in this book (> 90%) deal with issues in biomedical fields which are far more challenging, demanding, and costly to resolve, two chapters deal with use of biodegradable materials for environmental impacts. The books are designed for medical and polymer scientists and engineers and biomedical engineers in both universities and in industries with an interest in the biomedical field. Biomedical scientists and engineers, biomedical engineers and even medical professionals who have used implantable polymeric-based medical devices for their practice will find these books coverage of the latest developments and challenges useful either as a comprehensive review or an up to date report of the developments in the field of biodegradable polymers. The contributors include both academic scientists and research scientists in industry, from 10 different countries in North (USA) and South America (Brazil, Argentina), Asia (China, Korea, Singapore) and Europe (Germany, Italy, Spain, Portugal). Therefore, these 2 volume books are truly internationally as well as multidisciplinary-oriented, covering science and engineering without borders.

PROTEINS

Advances in Protein Folding Research
Matthew Hale
In series: Protein Biochemistry, Synthesis, Structure and Cellular Functions
2015.
Hardcover: 978-1-63483-593-0. $110.00.
e-book: 978-1-63483-613-5. $110.00.
An important but relatively unknown protein modification is PHBylation. In this book, the authors review the physical properties and molecular characteristics of PHB, and discuss the influences of PHBylation on protein folding. In the second chapter, protein-folding mechanisms, namely the framework model and nucleation-condensation mechanism are discussed. The final chapter examines the fundamental physical law governing protein folding - the Thermodynamic Principle.

Blood Lipids and Lipoproteins: Biochemistry, Disorders and Role of Physical Activity
Melissa R. Ruiz
In series: Protein Biochemistry, Synthesis, Structure and Cellular Functions
Hardcover: 978-1-63482-591-7. $82.00.
e-book: 978-1-63482-626-6. $82.00.
Circulating high-density lipoprotein (HDL) cholesterol (HDL-C) is a marker associated with cardiovascular health. Exercise is generally known to increase the HDL-C levels, and this can, in part, explain its cardioprotective effects. The authors present data regarding the association between exercise and the HDL quality and further encourages taking into consideration the view of HDL quality in relation to exercise, in addition to HDL-C. In contrast, this book also includes research on low density lipoproteins, specifically describing research in which atherogenic LDL possesses numerous alterations of carbohydrate and human blood plasma and represents a cascade of successive changes in the lipoprotein particle. Lastly, arachidonic acid has shown to effect blood lipid levels. The authors of this book focused on the problem of arachidonic acid metabolism, belonging to the group of n-6.

New Research on Molecular Chaperones
Jaime Wyatt
In series: Protein Biochemistry, Synthesis, Structure and Cellular Functions
2015.
Hardcover: 978-1-63483-543-5. $110.00.
In this book, the current advances on the functional role of molecular chaperones in protozoa’s mechanisms of response to stressful conditions, as well as an overview of studies focusing on molecular chaperones as potential targets for designing novel anti-parasitic drugs, are examined. In the second chapter, the current progress regarding the structure-function relationship as well as its association with the chaperone-like activity of the mammalian PDI/PRP4/HB protein are discussed. The final chapter focuses on the cytoplasmic and nuclear functions of URI/Bud27 in different organisms.

ROBOTICS

Human-Robot Interactions: Principles, Technologies and Challenges
Diana Coleman
In series: Robotics Research and Technology
Hardcover: 978-1-63463-735-0. $110.00.
Considering the spread of computers and the technological advances of recent years, research on persuasive intelligent user interfaces with a fifty-fifty relationship for communicating with humans is necessary. Recently, anthropomorphic user interfaces have been developed, such as virtual agents and robots. To make the interaction between humans and robots more effective, the human must be able to perceive the robot’s actions, manipulate the controls, interpret the robot’s actions, interpret the control information and make decisions on what to do next. This book discusses the principles, technologies and challenges in human-robot interactions.
Mobile Robotics: Principles, Techniques and Applications
Anna Montgomery
In series: Robotics Research and Technology
Hardcover: 978-1-63482-641-9, $82.00.
Robots or biological intelligent machines are characterized by open, adaptive systems which have autonomy and hierarchical structure. In recent years, more and more mobile robots have been applied in indoor transportation applications. In this book, the study of mobile robotics in life sciences is presented and a number of relatively technical difficulties are considered. A design methodology of behavior-based distributed control architecture for autonomous mobile robots is presented. The third chapter presents the virtual environment implementation for project simulation and conception of supervision and control systems for mobile robots. Finally, the last chapter deals with the controllers and compensators that are widely used in the design and development of mobile robotic devises for various applications such as exploration, search and rescue, surveillance, or object manipulations and transport.

Robot Kinematics and Motion Planning
Wayne Adams
In series: Robotics Research and Technology
2015.
Hardcover: 978-1-63483-391-2, $190.00.
e-book: 978-1-63483-418-6, $190.00.
The authors of this book focus on the latest developments in robot kinematics and motion planning. The first chapter seeks to identify the governing rules implemented in the central nervous system (CNS) to solve redundant mapping problems from an experimental observation approach. The novelty of this chapter is in the obtained motion planning results for a constraint elbow joint during reaching movements. The second chapter focuses on the problems that exist in the two-norm and infinity-norm and solutions to these problems involving bi-criteria (BC) motion planning schemes of different joint-level vectors. In the third chapter, trajectory generation methods for the application of thermal spraying processes are introduced. In the fourth chapter, an investigation on the robot kinematics is proposed to find the rules of motion in an application case. The results demonstrate the motion behavior of each axis in the robot that consequently permits the identification of the motion problems in the trajectory. In the fifth chapter, kinematic properties of a new planar parallel manipulator is investigated by means of the theory of screws.

SCIENCE AND TECHNOLOGY

Automated Fingerprint Identification: Background and Interoperability Strategy
Edward P. Jackson
In series: Privacy and Identity Protection
Hardcover: 978-1-63483-304-2, $120.00.
e-book: 978-1-63483-305-9, $120.00.
From its inception more than 100 years ago, fingerprint technology has come a long way. This book provides background on and traces the recent history of automated fingerprint identification systems. Included in the book is a brief examination of standards and the role of algorithms. In its history, fingerprints have been used to identify criminal and terrorist suspects, perform background checks, and monitor immigration status, among other applications. Prints found at the scene of a crime, referred to as latent prints, are compared with fingerprint records of known individuals who have been convicted of or arrested for a crime. Law enforcement agencies have been working to automate this comparison process. This book also provides the current landscape of latent Automated Fingerprint Identification System (AFIS) interoperability, meaning the ability to share information between networks, systems, components, etc. The book addresses essential elements of interoperability, outlines recent advances in the field and provides a high-level strategic plan for Federal agencies to implement the necessary requirements for interoperability to enhance public safety.

Control Theory: Perspectives, Applications and Developments
Francisco Miranda (Center for Research and Development in Mathematics and Applications, University of Aveiro, and Instituto Politécnico de Viana do Castelo, Portugal)
In series: Systems Science Series
Control Theory is a field of applied mathematics and engineering that deals with the basic principles underlying the analysis and design of control systems. “Controlling a system” means to influence the behavior of the system in order to achieve a desired goal. Control theory deals with the use of a controller to achieve this purpose. Control theory has been recognized as a mathematical subject since the 1960’s; it has contributed to scientific and technological progress in many areas over the last few decades. Control theory has been extensively used in modern society, from simple applications such as temperature devices to sophisticated systems in space flight. The aim of this book is to solve different problems concerning control systems. This book joins a number of recent works in control theory and is useful as a source for researchers in this field concerning control systems.

Image Fusion: Principles, Technology and Applications
Christopher T. Davis
In series: Computer Science, Technology and Applications
Hardcover: 978-1-63482-115-5, $110.00.
The widespread use of image fusion methods (e.g. in military applications, surveillance or medical diagnostics), has increased the need for pertinent performance or quality assessment tools to compare results obtained with different algorithms or to obtain an optimal setting of parameters for a given fusion algorithm. This book discusses principles, different technologies and applications of image fusion.

Magnetic Resonance Imaging in Stem Cell Applications
Xiaoming Yang, M.D., Ph.D. (Department of Radiology, University of Washington School of Medicine, Seattle, WA, USA)
In series: Stem Cells - Laboratory and Clinical Research
Hardcover: 978-1-63463-910-1, $170.00.
Stem cell-based regenerative therapy has become a frontier in modern medicine. For the success of both basic research and clinical application of stem cell technology, it is essential to have noninvasive methods to monitor the delivery of transplanted stem cells, track migration/homing of stem cells to the targets, and assess survival and
function of the transplanted stem cells at the targets. Magnetic resonance imaging (MRI) represents a promising technology fitting in this necessity. So far, scientists from various disciplines around the world have done outstanding works in developing different MR techniques for in vivo imaging of stem cells, so-called cellular MRI. The aim of this book is to facilitate such translation of advanced cellular MRI techniques from laboratory benches to pre-clinical animal studies, and, ultimately, to clinical practice. The authors are from several countries around the world, with their expertise in the fields of stem cell science, biomedical engineering, medicine, pathology, medical imaging, and interventional radiology. We hope this book will provoke common interests, brainstorming and cooperation among professionals in both stem cell science and medical imaging, and bring regenerative medicine one step closer to benefiting the patients.

**Microalgae and Other Phototrophic Bacteria:**
*Culture, Processing, Recovery and New Products*
**Luis G. Torres Bustillos** (Bioprocess Department, UPB-I-Instituto Politecnico Nacional, Calle Acueducto, Col. Barrio La Laguna-Ticomán, Del Gustavo Madero, Mexico)

Microalgae are primary producers of oxygen and exhibit an enormous potential for biotechnological applications. Microalgae cultivation is also an interesting option for wastewater treatment. These microorganisms are efficient in recovering high amounts of nitrogen, inorganic phosphorus, and heavy metals from effluents. Furthermore, microalgae are responsible for the reduction of CO2 from gaseous effluent and from the atmosphere, reducing the greenhouse gases effect. On the other hand, microalgae biomass can be used for the production of pigments, lipids, foods, and renewable energy. The culture of microalgae is not a new issue, since for many decades they have been employed with aquaculture purposes. In fact, some species of Nostoc, Arthrospira (Spirulina) and Aphanizomenon species have been used as food for thousands of years for food applications. The treatment of wastewaters employing microalgae has been reported for decades (specifically for the elimination of phosphorus and nitrogen compounds). Nowadays, there is an increasing interest in the production of biofuels. Bioethanol, biogas, bio-methane, biodiesel and other novel products can be obtained using microalgae as biomass or metabolic products (sugars, lipids, etc.). In the near future, microalgae can be oriented (via molecular engineering) to the production of the hole biofuels, such as biodiesel or bio-turbosins. Microalgae and Other Phototrophic Bacteria is a book which will provide information for academics students, policy makers and the general public regarding the state of the art in the field, as well as detailed descriptions of the methodologies employed for culture, processing, recovery and new products. Aspects covered by this book are the microalgae and other phototrophic bacteria.

**SPACE SCIENCE**
*China’s Space Programs: Progress and Military Implications*
**Larry Rogers**

China’s position in the world has been evolving. It seeks increased influence and independence from foreign powers with the ultimate goal of preserving China’s sovereignty, independence, territorial integrity, and political system. Over the long term, China seeks to transform the international system to better suit its interests, and seeks to integrate itself into the existing international system over the short term with the goal of reshaping the Asia-Pacific political environment into one in which its interests must be given greater attention. China’s pursuit of space power is intended to support this strategy. China views the development of space power as a necessary move for a country that wants to strengthen its national power. Indeed, China’s goal is to become a space power on par with the United States and to foster a space industry that is the equal of those in the United States, Europe, and Russia. This book begins with an elaborate discussion on China’s progress in space technologies and examines the implications it has on the United States. Furthermore, this title reviews the evolution of China’s military thinking and the changed role of space within that context. It briefly examines China’s space capabilities and development before discussing its concepts for military space operations and concludes with future Chinese space operations.

**Cosmology with Clusters of Galaxies**
**Sandor Mihaly Molnar** (Department of Physics, National Taiwan University, Taipei, ROC)

This book presents a comprehensive review of the methods applied to derive cosmological parameters for a given model and test different cosmological models using the most massive collapsed structures in our Universe: clusters of galaxies. Clusters typically consist of hundreds of galaxies and high-temperature ionized gas trapped in their gravitational field dominated by dark matter extending out to 2-3 Mpc. The formation, evolution, and structure of these massive rare objects are sensitive probes of the assumed cosmology. This is a multidisciplinary field of astrophysics involving multi-wavelength observations, gravity theory, atomic physics, plasma physics, magneto-hydrodynamics, astrophysical cosmology and numerical simulations. Our understanding of the physics of clusters, which is essential when using them for cosmology, has been improved tremendously due to the recent advent of technology and observational strategy in multi-frequency observations, and enhanced by improved numerical simulations made possible by more advanced high performance computers. As a result of these developments, cosmology with clusters of galaxies has become a mature discipline recently, and provided an important contribution to establish our concordance cosmological constant dominated cold dark matter model. In the near future we expect a rapid expansion of this field due to results from new cluster surveys and multi-wavelength observations. This timely volume on this exciting newly established field discusses galaxy cluster physics and provides a detailed description of using clusters to derive cosmological parameters applying accurate measurements of individual clusters as well as using clusters as a statistical tool. A detailed discussion is given on degeneracies between derived parameters and the systematic effects, which are becoming a limiting factor. An account for using clusters to test different cosmological models is also presented. This volume provides an introduction to galaxy cluster cosmology for physics and astronomy graduate students and serves as a reference source for professionals.

**Geospatial Data: Background, Federal and State Use, and Duplication Challenges**
**Meredith Haynes**
The federal government collects, maintains, and uses geospatial information—data linked to specific geographic locations—to help support varied missions, including national security and natural resources conservation. To coordinate geospatial activities, in 1994 the President issued an executive order to develop a National Spatial Data Infrastructure—a framework for coordination that includes standards, data themes, and a clearinghouse. This book describes the geospatial data that selected federal agencies and states use and how much is spent on geospatial data; assess progress in establishing the National Spatial Data Infrastructure; and determine whether selected federal agencies and states invest in duplicative geospatial data.

Homage to the Discovery of Cosmic Rays, the Meson-Muon and Solar Cosmic Rays

_Jorge A. Perez-Peraza (Instituto de Geofísica, UNAM, C.U., Coyoacán, México, D.F., Mexico)

Hardcover: 978-1-62681-998-0. $230.00.
Softcover: 978-1-63483-084-3. $82.00.
e-book: 978-1-62808-042-1. $82.00.

There is the conjecture 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, Mexico, 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 Geofísica Mexicana, and others.

Human Space Exploration: Early Assessments of NASA's Next Steps

_Darrel Gibbs_

Softcover: 978-1-63482-172-8. $62.00.

NASA is undertaking a trio of closely-related programs to continue human space exploration beyond low-Earth orbit: the SLS vehicle; the Orion capsule, which will launch atop the SLS and carry astronauts; and the supporting ground systems. As a whole, the efforts represent NASA's largest exploration investment over the next decade, potentially as much as $22 billion, to demonstrate initial capabilities. Beyond 2021, NASA plans to incrementally develop progressively more-capable SLS launch vehicles complemented by Orion capsules and ground systems. This book examines the scope of NASA's preliminary cost estimates for the three programs. It examines the SLS program's progress toward and risks for its first test flight in 2017; and the extent to which the SLS program has plans in place to achieve its long-term goals and promote affordability.

New Frontiers in Space Propulsion

_Takaaki Musha (Advanced Science-Technology Research Organization, Yokohama, Japan)_


As we know, reaching the outer rim of the solar system in a relatively short period of time is impossible utilizing existing rocket technology. Radically ventured theories such as quantum vacuum propulsion must emerge if we have any desire to truly explore the far reaches of space. New concepts must be explored that may someday enable mankind interplanetary and interstellar travel. With this in mind, it is imperative for scientists to study and create new forms of space trajectory to achieve this goal. New propulsion physics for such means may or may not be discovered in the future. In this book, the science behind ideal methods of space propulsion (such as warp drive and gravity-control) are examined to show connections between known facts, anomalies and visions concerning this study. This term is known as "frontier physics"; scientists presently use accepted physical paradigms to speculate and hypothesize forms of physics that will aid in future developments. In this case, that development is advanced methods of space propulsion. Throughout this book, eminent researchers discuss an overview of new propulsion systems which cannot be achieved by the conventional propulsion systems. Some methods that surpass modern study which would aid in the development of advanced space propulsion includes zero-point energy, quantum electrodynamics, space-time curvature and faster-than-light warp drive travel. It is hoped that these topics will assist readers in their journey to understand progressive studies of space propulsion systems.

Planetary Influence on the Sun and the Earth, and a Modern Book-Burning

_Nils-Axel Mörnér (Paleogeophysics & Geodynamics, Stockholm, Sweden)_

Hardcover: 978-1-63482-837-6. $190.00.

This book is primarily concerned with fundamental components of solar physics, terrestrial geophysics and general climate issues. Phenomena such as planetary influence on solar variability, the Sun’s irradiance and solar wind continue to fascinate members of the scientific community. What is more astounding is the way in which our planet reacts to these occurrences; climate changes, sea levels, tides, ocean circulation and geomagnetism, all caused by the processes mentioned above. The pages that follow analyze and calculate the relationships between solar causation and terrestrial reaction. This work begins with a foreword from Walter Cunningham, the famous Apollo 7 astronaut who in 1968 took part in the first manned space flight. Section A is devoted to the concept of planetary-solar-terrestrial interaction and driving forces that represent a break-through in science. The book begins with a high-lightening of records indicating a planetary influence on solar activity and continues with multiple discussions of terrestrial variables. It concludes with an account of the physics behind the changes in the Sun and in the Earth. Section B presents the remarkable decision to terminate the journal of pattern recognition in physics because the authors concluded that we are now on our way into a new grand solar minimum. This inspires doubt in an accelerating global warming. In the name of science and ethics, five papers respond to this “modern book-burning”. Section C is devoted to general conclusions, co-authored by 19 eminent scientists in the field of solar physics, geophysics, geology, hydrology and climatology. It also includes a short note on concluding editorial views.

Space Technology Contribution in Engineering Services

_Rustam B. Rustamov, Bahar N. Aliyeva, Nargiz A. Babayeva, Sabina N. Hasanova and Maral H._
Remote Sensing is the method of measurement of the object properties on the Earth’s surface using data acquired from aircraft and satellites. This method makes it possible to carry out the measurement from the distance for the purpose of this research and to display those measurements over a two-dimensional spatial grid, i.e. images. Remote Sensing method, which is based on the data accessed from satellites, provides an opportunity to observe and monitor the Earth, collect appropriate information with further processing and integration of the Geographic Information System. This book’s aim is to reveal the opportunities of the application of Remote Sensing and Geographic Information System advances in wide areas of engineering applications through analyzing its own achievements and challenges as well as creative sources existing in the indicated area. This book examines the conceptual aspects of Remote Sensing and Geographic Information System. Its applications are based on implemented projects and its outcomes found a perfect reliable place in the field of engineering.

**TRANSPORTATION**

**Aircraft: Design, Technology and Safety**  
*Collin Parker*  
In series: *Transportation Issues, Policies and R&D*  
In early stages of an aircraft design process, it is necessary to determine the minimum thrust or power requirement and rapidly select the appropriate propulsion, which involves a tight coupling between flight performance and missions’ analyses, engine performance prediction and design optimization. The first chapter of this book provides an overview of how to determine the minimum thrust or power requirements for jet and propeller driver transport aircraft. The second chapter examines the comprehensive modeling and design of production processes of aircraft assembly. The final chapter focuses on the computational modeling of the Be-200 and Be-103 amphibious aircraft models.
AFRICA

African Growth and Opportunity Act: Selected Analyses
Hellen Edwards
In series: African Political, Economic, and Security Issues
Softcover: 978-1-63482-981-6. $62.00.
Signed in 2000, the African Growth and Opportunity Act (AGOA) is a trade preference program that seeks to promote economic development in 49 sub-Saharan African countries by allowing eligible countries to export qualifying goods to the United States without import duties. The act requires the U.S. government to conduct an annual eligibility review to assess each country’s progress on economic, political, and development reform objectives in order to be eligible for AGOA benefits. AGOA also requires an annual forum to foster closer economic ties between the United States and sub-Saharan African countries. This book examines U.S. government TCB assistance in support of AGOA; the extent to which U.S. Agency for International Development (USAID) has made efforts to develop strategic approaches to AGOA utilization; how the AGOA eligibility review process has considered economic, political, and development reform objectives described in the act; and how sub-Saharan African countries have fared in certain economic development outcomes since the enactment of AGOA.

AGRICULTURE

Agricultural Research Updates. Volume 9
Prathamesh Gorawala and Srushti Mandhatri
In series: Agricultural Research Updates
2015. 177 pp.
Hardcover: 978-1-63482-358-6. $160.00.
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 meeting the challenges of food security of 21st century by earthworms; the effect of organic sources of insect pest management strategies and nutrients on cotton insect pests; in vitro culture techniques; nanoscience applied in agriculture for food production; retrosynthetic strategies for the preparation of heterocyclic rings present in pesticides; application of soil and water assessment modeling tools in agricultural research; potato peels in the treatment of burn wounds; and enzymatic saccharification of lemon peel and antioxidative ability of saccharified peel solution.

Agricultural Research Updates. Volume 10
Prathamesh Gorawala and Srushti Mandhatri
In series: Agricultural Research Updates
Hardcover: 978-1-63482-745-4. $190.00.
e-book: 978-1-63482-746-1. $190.00.
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 meeting the challenges of food security of 21st century by earthworms; the effect of organic sources of insect pest management strategies and nutrients on cotton insect pests; in vitro culture techniques; nanoscience applied in agriculture for food production; retrosynthetic strategies for the preparation of heterocyclic rings present in pesticides; application of soil and water assessment modeling tools in agricultural research; potato peels in the treatment of burn wounds; and enzymatic saccharification of lemon peel and antioxidative ability of saccharified peel solution.

Crop Genetic Resources: Climate Issues, Economics and Policy
Sean W. Price
In series: Agriculture Issues and Policies
Climate change poses significant risks to future crop productivity as temperatures rise, rainfall patterns become more variable, and pest and disease pressures increase. The use of crop genetic resources to
develop varieties more tolerant to rapidly changing environmental conditions will be an important part of agricultural adaptation to climate change. Finding new genetic traits that can facilitate adaptation—and incorporating them into commercially successful varieties—is time-consuming, expensive, and technically difficult. This book reviews the types of genetic resources, the ways they have been used, and how they might be used in the future. The book also discusses economic, scientific, and institutional factors that will determine the extent of genetic resource use and the benefits it might bring to climate change adaptation. Moreover, this title evaluates economic and institutional factors influencing the flow of genetic resources, including international agreements, and their significance for agricultural research and development in the United States. Finally, the book examines the composition of U.S. and international seed markets, regulations affecting agricultural seeds, the structure and evolution of the seed industry, and trends in private and public R&D in plant breeding.

**Farms in the United States: Size, Structure and Forces of Change**

*Janine Grosso*

**In series: Agriculture Issues and Policies**


Hardcover: 978-1-63483-667-8, $120.00.

Large farms now dominate crop production in the United States. Although most cropland was operated by farms with less than 600 crop acres in the early 1980s, today most cropland is on farms with at least 1,100 acres, and many farms are 5 and 10 times that size. This ongoing shift in farm structure raises a host of questions. How extensive is this structural change? What forces have accompanied and contributed to the shift to larger farms? What implications do these structural shifts have for family farms? The shift of acreage to larger farms is part of a complex set of structural changes in crop agriculture. The number of mid-size crop farms has declined, while farm numbers at the extremes (large and small) are growing. Because of these changes, average farm size has changed little in the last three decades, even while cropland and crop production have shifted to much larger farms. This book documents the complex nature of modern farm structure and introduces statistics aimed at better tracking consolidation of land and production. Furthermore, this book looks at small acreage farms having gross sales of $10,000 or more in a given year to better understand the product choices and strategies used by small acreage farms that appear to be operating profitably.

**Federal Crop Insurance Subsidies: Issues and Reduction Proposals**

*Nichole Manning*

**In series: Agriculture Issues and Policies**


Hardcover: 978-1-63483-558-9, $120.00.
e-book: 978-1-63483-559-6, $120.00.

Many farm policymakers generally consider the federal crop insurance program as the principal tool to help farmers cope with the variable impact of weather on crop yields. The program makes available subsidized policies that farmers may purchase each year to protect against yield and/or revenue declines during a particular growing season. Policies are available for about 130 commodities, covering crops supported by traditional farm programs (e.g., corn, wheat, and soybeans) as well as many fruits, vegetables, tree nuts, nursery crops, pastureland, and other commodities. Farmers pay a portion of the premium, unlike farm programs, which are free. Premium subsidies for federal crop insurance have been instrumental in expanding program participation to levels acceptable to policymakers. This book examines current premium subsidies, proposals to limit them, and potential options for Congress. Furthermore, this book examines trends in federal crop insurance costs and farm sector income and wealth from 2003 through 2012; and the potential savings to the government and impacts on farmers, if any, of reducing federal premium subsidies for revenue policies.

**Local and Regional Food Systems: Trends, Resources and Federal Initiatives**

*Jillian Crawford*

**In series: Agriculture Issues and Policies**


Hardcover: 978-1-63482-775-1, $145.00.

Local and regional food systems generally refer to agricultural production and marketing that occurs within a certain geographic proximity (between farmer and consumer) or that involves certain social or supply chain characteristics in producing food (such as small family farms, urban gardens, or farms using sustainable agriculture practices). Sales of locally produced foods comprise a small but growing part of U.S. agricultural sales. USDA estimates that farm-level value of local food sales totaled about $4.8 billion in 2008, or about 1.6% of the U.S. market for agricultural products. An estimated total of 107,000 farms are engaged in local food systems, or about 5% of all U.S. farms. This book provides background on local and regional food systems, focusing on available data on direct-to-consumer sales, farmers’ markets, farm-to-school programs, community-supported agriculture (CSA), and community gardens. It highlights available resources within existing federal programs administered by USDA and other agencies that may be applied to support local food systems. This book also describes some of the Obama Administration’s initiatives that leverage existing USDA programs to support local food systems. Finally, this book discusses some of the legislative options that have been proposed by Congress and intended to broaden support for local and regional food systems.

**The Conservation Reserve Program: Issues and Considerations**

*Preston L. Cruz*

**In series: Agriculture Issues and Policies**


Hardcover: 978-1-63482-282-4, $145.00.

The Conservation Reserve Program (CRP) provides payments to agricultural producers to take highly erodable and environmentally sensitive land out of production and install resource conserving practices for 10 or more years. CRP was first authorized in the Food Security Act of 1985 and is administered by the U.S. Department of Agriculture’s (USDA’s) Farm Service Agency (FSA) with technical support from other USDA agencies. This book discusses the issues and considerations of the CRP.

**U.S. Agricultural Exports: Trade and Tax Issues**

*Amber Reid*

**In series: Agriculture Issues and Policies**


Hardcover: 978-1-63483-677-7, $120.00.

Trade, particularly exports, is critical to the vitality of American agriculture. On average, foreign markets absorb about one-fifth of U.S. agricultural production, thus contributing significantly to the health of the farm economy. The positive economic effects of trade in farm products are felt well beyond the farm gate. Farm product exports make up about 10% of total U.S. exports and contribute positively to the U.S. balance of trade. The economic benefits of agricultural exports also extend across rural communities, while overseas farm sales help to buoy a wide array of industries linked to agriculture, including transportation, processing, and farm input suppliers. Moreover, most of the future growth in food demand is expected to occur in developing
countries. This book discusses major agricultural trade issues in the 114th Congress, as well as provides the reader with a background and issues of agricultural exports and the 2014 Farm Bill programs. It concludes with alternative policies to agricultural export taxes that are less market distorting.

**U.S. Family Farms: Structure, Finances, and Agricultural Production Role**

*Kathleen Perry*

In series: *Agriculture Issues and Policies*  
Hardcover: 978-1-63483-629-6. $120.00.  
e-book: 978-1-63483-630-2. $120.00.

Most U.S. farms are family operations, and even the largest farms are predominantly family-run. Small farms are less profitable than larger farms, on average, and their operator households tend to rely on off-farm income for their livelihood. Generally speaking, farm operator households cannot be characterized as low-income when both farm and off-farm incomes are considered. Small family farms dominate the farm count, but midsize and large-scale family farms account for the bulk of farm production. Information on the different kinds of farms—and the farmers who operate them—is important for understanding the economic wellbeing of farm households and the implications of farm policy. This book proves accurate, detailed, and unbiased information on the structure and finances of U.S. farms, including the relationship of farm size and type to agricultural production, financial performance, sources of farm household income, and the extent of off-farm work. The book provides a sense of the financial position of family farms in general and of different types of family farms.

**U.S. Rice Industry: Elements and Global Competitiveness**

*Lillian Brewer*

In series: *Agriculture Issues and Policies*  

Rice, an ancient grain, is the primary staple for more than half the world’s population, through its role in the diets of billions of low-income, food-insecure consumers. Its vital role makes its availability and price politically sensitive for governments in several regions. Government intervention is often aimed at keeping prices affordable, especially for low-income consumers. In some cases, government intervention also encourages domestic production to promote national self-sufficiency. The United States faces little direct competition domestically and relies heavily on export markets; exports account for about half of the annual crop each year. This book investigates factors affecting the global competitiveness of the U.S. rice industry. It provides an overview of the rice industry in the United States and other major global producing and exporting countries and provides information on recent trade trends and developments in the global market for rice. It supplies a comparison of the competitive strengths and weaknesses of rice production and exports in the United States and other major exporting countries and assesses the impact of government policies and programs of major producing and exporting countries.

**ART**

**Arts Attendance in the Nation: Barriers, Motivations, and Survey of Arts Participation**

*Nicole L. Santiago*

In series: *Fine Arts, Music and Literature*  
2015. 142 pp.  
Hardcover: 978-1-63482-006-6. $120.00.

e-book: 978-1-63482-389-0. $120.00.  
The Survey of Public Participation in the Arts (SPPA) is the nation’s largest and most reliable survey of how American adults (ages 18 and older) engage with the arts. The study of arts participation patterns is cogent to arts organizations, arts funders, and cultural economists—who have used prior surveys to inform their understanding about arts audiences or to gauge public demand for specific arts experiences. At a more fundamental level, the SPAA showcases the stunning plurality of art forms, genres, venues, and events and activities that constitute arts participation as a whole. This book discusses the barriers, and motivations of individuals attending arts in the nation.

**ASIA**

**China’s Air Defense Identification Zone: Implications and Associated Issues**

*Emily Carpenter*

In series: *Asian Political, Economic and Security Issues*  
Hardcover: 978-1-63482-925-0. $120.00.  
e-book: 978-1-63482-926-7. $120.00.

This book analyzes the establishment of an air defense identification zone (ADIZ) over the East China Sea in November 2013 by the People’s Republic of China (PRC, or China), international responses to that action, its consequences, and related matters of national interest and strategy. The book examines the legal, military, and diplomatic aspects of China’s ADIZ, with a focus on U.S. interests and issues of concern to Congress. It also discusses questions that have risen concerning the U.S. relationship with the Senakaku islets in the East China Sea; and the territorial claims in East Asia that underlie the growing tensions, U.S. interests that are at stake, factors that may be driving the growing tensions, and possible options for Congress to consider.

**Encyclopedia of China (7 Volume Set)**

*Heather Louise Conner*

In series: *Asian Political, Economic and Social Issues*  
Hardcover: 978-1-63482-616-7. $1350.00.  

This encyclopedia presents important research on China. Some of the topics discussed herein include internet freedom in China; naval modernization; the Senakaku Islands dispute; U.S. and China relations; trade issues; Chinese investments in the U.S. economy; China’s banking system; the auto sector’s development; and Chinese medical research.

**BUSINESS**

**Advances in Business and Management. Volume 7**

*William D. Nelson*

In series: *Advances in Business and Management*  
Hardcover: 978-1-63482-026-4. $160.00.  

This book presents research in the field of business and management from around the world. This book examines e-commerce and its impact on expectations of customer service and quality control. It also explores the strategic advantage of employee training in marketing organizations; wealth management, building value through investing, and contingency plans after the global recession; health as a predictor of registered nurse retirement preparation; human resources
management and mergers and acquisitions; private saving for retirement; an investigation of multichannel shopping behavior; and self-determined relationship marketing.

Advances in Business and Management. Volume 8
William D. Nelson
In series: Advances in Business and Management
2015. 192 pp.
Hardcover: 978-1-63482-964-9, $190.00.
e-book: 978-1-63483-005-8, $190.00.
The authors of this book examine the latest research in business and management, including a comprehensive study on the hotel and tourism management industry; the perception of public managers regarding the implementation of codes of ethics; an analysis of the characteristics of the Multilateral Trading Facilities between 2008 and 2014; the audit market and auditor choice of Chinese listed firms between 2007 and 2012; a debate on the effectiveness of Family-Friendly Practices and Policies (FFPP) based on literature and research performed in Portugal; an analysis of humanistic management; an investigation of the dynamic economic impacts of global value chains (GVCs) participation in Asian developing economies; the effects of personal values on ethical judgements of auditors in relation to auditor-client conflict scenarios; and real-life examples of how corporate managers manage human resources (HR) to make it a truly evidence-based human resource management (EBHRM).

Business Intelligence, Strategies and Ethics
Kimberly Nelson
In series: Business Issues, Competition and Entrepreneurship
2015. 188 pp.
Hardcover: 978-1-63482-063-9, $160.00.
Knowledge has become the most important asset of the modern business. The term “business intelligence” (BI) has been used to describe processes and systems dedicated to the systematic and in-depth analysis of an organization and its competitive environment. The field of BI is an active and still growing area of computer applications in business and economy. Business ethics is a set of values, norms and principles that seeks to achieve respect for the rights generally recognised by society. The topic of ethical values has a range that is far too wide to conduct a thorough discussion of the concept within this contribution. One simple approach is to just use ethical value synonymously with goodness or virtuous behavior. This book discusses business intelligence, strategies and ethics.

Conducting Business With Senior Investors: Observations and Practices
Nancy Bell
In series: Business Issues, Competition and Entrepreneurship
Hardcover: 978-1-63483-622-7, $120.00.
In 2015, the Social Security Administration estimated that each day for the next 15 years, an average of 10,000 Americans will turn 65. In this context, the staff of the Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority (FINRA) issued a report to help broker-dealers assess, craft, or refine their policies and procedures for senior investors as they prepare for and enter into retirement. This book includes observations and practices identified in examinations that focused on how firms conduct business with senior investors. The examinations by the SEC’s Office of Compliance Inspections and Examinations (OCIE) and FINRA focused on the types of securities purchased by senior investors, the suitability of recommended investments, training of brokerage firm representatives, marketing, communications, use of designations such as “senior specialist,” account documentation, disclosures, customer complaints, and supervision.

Corporate Social Responsibility and Business Growth: Collateral Effects on Business and Society
Andrée Marie López-Fernández (Department of Doctoral Studies in Administrative Sciences at the Instituto Tecnologico y Estudios Superiores de Monterrey, EGADE Business School Mexico City Campus, Mexico)
In series: Business Issues, Competition and Entrepreneurship
Hardcover: 978-1-63483-322-6, $190.00.
Corporate social responsibility (CSR) is a concept that has been evolving since the 1950s; by 2015, it has evolved into an integral mindset, a strategy by which firms may promote and attain business and societal growth and development. CSR is a strong business strategy and a determining factor in stakeholder perceptions and ultimate decision making. As firms and society are acknowledged as equal parts of a symbiotic relationship, the effective engagement in CSR enables businesses to tackle and alleviate social issues, such as poverty, hunger, lack of healthcare, the environment’s destitution, and warrant empowerment and education, amongst others, whilst tending to core objectives and strategies. The effective design, execution, and transparent communication of corporate social responsibility endeavors, in fact, shape the outcome of business and social growth and development. The communication of CSR efforts is, therefore, vital to the fulfillment of strategic objectives because social networking sites (SNSs) are ubiquitous and have rapidly become a preferred source of information. Firms’ use of such platforms proves to be fruitful because SNSs not only enable stakeholder to stakeholder word of mouth, but also facilitate firm-to-stakeholder communication. As such, the notion of marketing CSR via social media is more than buzzword or trend. It is potential viral information, or viral marketing. The book offers strong results from the perspectives of both stakeholders and firms’ CSR-related practices in an emerging market. It also demonstrates that as corporate social responsibility is viewed as an investment, it provides fruitful outcomes for business as well as for the communities surrounding firms. CSR is addressed as a strategically co-created proactive plan that prompts sustained social and business growth and development.

Crisis Management: A Leadership Perspective
Jerry D. VanVector (Health Care Administrator - U.S. Army Medical Service Corps)
In series: Business Economics in a Rapidly-Changing World
2015.
Hardcover: 978-1-63483-395-0. $190.00.
Crisis management is a topic that occupies space among many of our most prominent and brilliant business minds in an array of management settings. What to do when an incident occurs, problems arise, or the unexpected befalls an organization takes issue among a variety of scenarios and situations. Crises reside within many aspects of contemporary business environments. Whether your specialization is logistics, airfield management, or IT infrastructure, crisis management is an ever-present concern. Crises can be found among a wide gamut of phenomenon, ranging from safety and security to infrastructure development and general management. There is no aspect of contemporary business or leadership that will not be affected by crises at one point or another. In this book, an international group of
professionals has assembled a collection of unique leadership perspectives related expressly to crisis management. The material examines multiple aspects of communication, leadership decision-making, and incident management. The book concludes with a model for improving crisis management among contemporary settings.

Providing a practical methodology, Crisis Management: A Leadership Perspective allows readers to decide for themselves what is most important for a given organization while providing readers with concepts, themes, and ideas related to process improvement, organizational planning, and communication techniques. Featured within the material are chapters related to safety and security, incident management and control, crisis response strategies via a balanced scorecard, data management, logistics management, and two unique combat theater case studies that involve crises management tactics and techniques. This book is an easy-to-read, practical guide related to crisis management; the text will only strengthen existing operational templates concerning what to do when crises strike an organization. Regardless of ones level of experience in crisis management, this book will prove to be a great addition to other texts related to similar topics.

**Decision-Making: Processes, Behavioral Influences and Role in Business Management**

**Rebecca Hudson**

In series: *Business Issues, Competition and Entrepreneurship*

2015. 91 pp.

Hardcover: 978-1-63482-959-5. $82.00.

This book examines various decision-making processes, influences and its role in business management. The chapters describe the original decision-making approach based on joint use of the multi-criteria method and the method of group preferences in business management; a discussion on the internationalization decision-making process of small-medium enterprises (SMEs); and an examination on the efficiency of computer decision support systems by developing a set of universal analytic models for increasing the efficiency of fuzzy input information processing.

**Global Financial Crisis: Causes, Consequences and Impact on Economic Growth**

**Jeanne Barnett**

In series: *Economic Issues, Problems and Perspectives*


Hardcover: 978-1-63483-481-0. $190.00.

The impact of the Global Financial Crisis was felt in 2008 and its repercussions are still with us today. In this book, the authors set the context for examining the crisis by looking at a regional crisis that occurred a decade earlier but whose lessons about financial fragility were soon forgotten. The authors then move to the present and discuss the views of a number of economics who to various degrees predicted or forewarned of the impending crisis. In the second chapter, the elements that caused the latest and current problems in the U.S. and consequently to all economies of the world, due to the systemic risk of globalization, are determined. The third chapter advocates the intangible and tacit knowledge in the knowledge based society of the 21st century, exacerbates the problem of moral agency in today’s organizations, making the boundaries and accountability of decision-making especially vague and ambiguous. The authors apply this concept as a means to enhance the moral agency to organizations in the context of the knowledge based society, and as a key part of responsible leadership after the global financial crisis of 2008. The fourth chapter reviews aspects of the new rules that apply to investment firms and to banks, making comment on individual provisions as necessary. In the last chapter, the serious effects of a bubble and its burst in small countries in Central and Eastern Europe are looked at and discussed in detail.

**Human Resource Management Challenges and Changes**

**Carolina Machado (University of Minho, Portugal) and Professor J. Paulo Davim (University of Aveiro, Portugal)**

In series: *Business, Management and Technology*

Edited by: Professor Carolina Machado (University of Minho, Portugal) and Professor J. Paulo Davim (University of Aveiro, Portugal)

2015. 188 pp.

Hardcover: 978-1-63463-744-2. $170.00.

The world where we live is changing faster than ever before. Different challenges and changes are putting pressure on organizations to become more flexible and dynamic. The process of change is not easy, at the same time all those involved (managers, engineers, researchers and academics) are facing considerable demands to be successful. Conscious of this reality, and drawing on the latest developments, ideas, research and best practices, this book intends to examine the implications of the latest challenges and changes taking place in the environment and, consequently, in the organizational arena. Furthermore, the authors in this book discuss how these challenges and changes affect the management and motivation of human resources belonging to these organizations. Designed to increase the knowledge and effectiveness of all those involved in human resource management, whether in the profit or non-profit sectors, or in the public or private sectors, this book can be used for academics, researchers, human resources managers, managers, engineers, and other professionals in related areas.

**Job Satisfaction: Determinants, Workplace Implications and Impacts on Psychological Well-Being**

**Rosalie Osbourne**

In series: *Business Issues, Competition and Entrepreneurship*


Hardcover: 978-1-63463-649-0. $190.00.

Job satisfaction is a central concept in work and organizational psychology as it is associated with important individual as well as organizational outcomes. Work is the number one activity that occupies most adults’ waking time. Being satisfied with one’s job, which is defined as a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experience, is related to important work-related and health-related outcomes (e.g., higher job performance, organizational commitment, organizational citizenship behavior, life satisfaction, lower absenteeism and lower counterproductive work behavior). This book discusses determinants of job satisfaction as well as workplace implications and the impact job satisfaction has on the psychological well-being of individuals.

**Job Stress: Risk Factors, Health Effects and Coping Strategies**

**Cecilia R. Hopkins**

In series: *Business Issues, Competition and Entrepreneurship*


This book begins by analyzing the relationship between occupational stress and workplace bullying in the educational sector. It continues to examine the insufficient recovery from job stress as a risk factor for
poor health and well-being: stress, burnout and coping strategies in the emergency and intensive care units of hospitals; pile-up stress from age discrimination on older working people's adjustments; and discusses the role of psychosocial safety climates in job stress and work-related injuries.

**Labor Force Characteristics: Race, Ethnicity, and Minimum Wage Workers**
*Zachary Cobbs*

In series: *Business Issues, Competition and Entrepreneurship*  
Hardcover: 978-1-63463-788-6. $145.00.  

Labor market differences among the race and ethnicity groups are associated with many factors, not all of which are measurable. These factors include variations across the groups in educational attainment; the occupations and industries in which the groups work; the geographic areas of the country in which the groups are concentrated, including whether they tend to reside in urban or rural settings; and the degree of discrimination encountered in the workplace. This book describes the labor force characteristics and earnings patterns among the largest race and ethnicity groups living in the United States—Whites, Blacks, Asians, and Hispanics—and provides detailed data through a set of supporting tables. The book also includes a limited amount of data for American Indians and Alaska Natives and for Native Hawaiians and Other Pacific Islanders, people who are of Two or More Races, detailed Hispanic ethnicity and, for the first time, detailed Asian groups. This book also discusses minimum wage worker characteristics from 2013.

**Large Financial Institutions: The "Living Wills" Requirement and Economic Issues Associated with "Too Big To Fail!"**
*Franklin Pierce*

In series: *Financial Institutions and Services*  

One of the chief objectives of the Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA) is to promote financial stability within the United States, without the need for emergency governmental assistance to troubled firms. This book reviews the legal structure of the DFA's living will requirements; and examines some of the steps that these institutions might voluntarily take, which, in the view of the FRB and FDIC, would improve their resolvability, including strategic divestiture; legal reorganization; amendment of default trigger provisions of qualified financial contracts; and increasing their long-term, unsecured debt as a proportion of their assets.

**Market Research in the Federal Procurement Process: Analysis and Select Assessments**
*Cherese Hartell*

In series: *Marketing and Operations Management Research*  
Softcover: 978-1-63482-008-0. $62.00.  

The federal government spends hundreds of billions of dollars annually to acquire goods and services from the private sector to support agency missions. Market research—the process used to collect and analyze data about capabilities in the market that satisfy agency needs—is critical to inform decisions about how best to acquire these goods and services. This book assesses selected agencies' market research guidance and policy and how selected agencies conducted market research on selected procurements. It describes the most common elements of the federal procurement process and resources that may be used in that process.

**Minimum Wages: Overview of State Provisions and Federal Policy**
*Vivian Haywood*

In series: *Business Issues, Competition and Entrepreneurship*  
Hardcover: 978-1-63482-123-3. $120.00.  
e-book: 978-1-63482-123-0. $120.00.

The Fair Labor Standards Act (FLSA), enacted in 1938, is the federal legislation that establishes the general minimum wage that must be paid to all covered workers. While the FLSA mandates broad minimum wage coverage, states have the option of establishing minimum wage rates that are different from those set in it. Under the provisions of the FLSA, an individual is generally covered by the higher of the state or federal minimum wage. This book begins with a discussion of FLSA minimum wage coverage. It provides a summary of state minimum wage laws; and an examination of rates and mechanisms of adjustments in states with minimum wage levels above the FLSA rate.

**Multinational’s CSR Practices in Developing Countries: An International Perspective**
*Aldo Ouedraogo (University of Moncton, Canada)*

In series: *Business Issues, Competition and Entrepreneurship*  

This book explores the relationship between multinationals and developing countries. Some of multinational’s corporations claim to be taking steps to improve their CSR practices through the use of voluntary initiatives such as codes of conduct, environmental certification, social audits, fair trading and social investments. However, that kind of voluntary initiative may be limited in some developing countries where companies are not subjected to the same pressures and market opportunities that make many corporations responsible in developed countries. The challenge for corporate social responsibility (CSR) in developing countries is guided by a vision distilled into the UN Millennium Development Goals. Unfortunately, these global aspirations remain far from being met in many developing countries today. The book also examines the promotion of corporate environmental and social responsibility in specific developing countries. While concepts like corporate social responsibility have become more fashionable in many developing countries, they have essentially been introduced from abroad. Thus, on one hand, the lack of interest within some developing countries is not surprising considering the current context of economic, political and social crisis, which generates other priorities. On the other hand, an institutional framework supportive of CSR practices has emerged in some developing countries. In these countries, corporate policies to promote responsible social and environmental behaviors have been increasingly important among foreign-based companies.

**Organizational Culture: Leadership Strategies, Outcomes and Effectiveness**
*Cameron P. Fuller*

In series: *Business Issues, Competition and Entrepreneurship*  
Hardcover: 978-1-63482-595-5. $190.00.  
e-book: 978-1-63482-634-1. $190.00.
Today, organizational or corporate culture, as it is called by some authors when they talk about commercial organizations, is seen as crucial for the growth and development of modern enterprises. It is believed that organizational culture is one of the basic conditions that forms the base for effective functioning and success of the company. The chapters in this book discuss knowledge management success - subject to the five dimensions of organizational culture (i.e., persistent learning, interpersonal trust, power distance, long-term orientation and team spirit); the sources of power and this dimension of leadership; the process of organizational culture change in one particular company and its five major stages; the relationship between organizational culture and business performance; discussions on the impact of organizational culture on knowledge management success, including in multinational corporations (MNCs); and an examination of servant leadership (an emerging phenomenon that emphasizes service to others) and work group work outcomes.

**Patent Infringement Litigation: Trends and the Role of Patent Examinations**

*Lindsey Gonzales*

In *series: Intellectual Property in the 21st Century*

Hardcover: 978-1-63483-527-5. $120.00.
e-book: 978-1-63483-535-0. $120.00.

In August 2013, the U.S. Government Accountability Office (GAO) issued a report, for which they performed a required study on patent litigation. The study aimed to find out what was known about the extent and characteristics of patent litigation; to survey knowledgeable stakeholders about factors influencing patent litigation; to identify judicial developments that could impact patent litigation; and to examine actions taken by the United States Patent and Trademark Office (USPTO or Office) that could affect future patent litigation. The report concluded with a recommendation that the Secretary of Commerce direct the Director of PTO to consider examining trends in patent infringement litigation, including the types of patents and issues in dispute, and to consider linking this information to internal data on patent examination to improve the quality of issued patents and the patent examination process. The USPTO agreed that it would be appropriate to undertake an investigation of trends in patent infringement litigation, and to consider how any trends discovered could potentially be linked to its own internal patent examination data. The USPTO further agreed that it would be appropriate to consider whether the results of the investigation could be used to support its ongoing efforts to improve the patent examination process, and ultimately the quality of issued patents. In addition, the USPTO chose to include inter partes review (IPR) proceedings in the study, with the goal of gaining additional insights that could lead to enhanced patent quality. The USPTO carried out the investigation as recommended by GAO, and this book details the methodology and results.

**Patents: International Protection for Small Business and the Prior User Rights Defense**

*Shawn Bennett*

In *series: Intellectual Property in the 21st Century*

2015. 121 pp.
Hardcover: 978-1-63483-626-5. $120.00.
e-book: 978-1-63483-627-2. $120.00.

Economic research shows that small businesses are the primary driver of job creation in the United States. Yet, the capacity of American small businesses to create jobs is at risk. American firms compete and grow by supplying products and services that consumers demand, and by internationalizing their businesses through licensing, franchising, or exporting. For many small companies, patent protection prevents competitors from simply copying their innovations, and aids in attracting investor capital needed to grow, build market share, and create jobs. The aim of this book is to show how the U.S. Patent and Trademark Office, in coordination with other Federal departments and agencies, can best support businesses with international patent protection. Moreover, upon its signing in 2011, the Leahy-Smith America Invents Act (AIA) substantially overhauled U.S. patent law. Included in AIA was the expansion of the prior user rights defense to infringement and broadening the classes of patents that are eligible for the new limited prior user rights defense. (Here, prior user rights, is a defense to patent infringement afforded to a party that was commercially using, or engaged in substantial preparations for commercial use of, an invention later patented by another party). In the debate about the impact of an expanded prior user rights defense on the patent system and innovation more generally, the U.S. Patent and Trademark Office produced a report detailing its findings and recommendations on the operation of prior user rights in the industrialized world, which is discussed further in this book.

**Pension Plan Valuation: Discount Rate Determinations and Differences**

*Patricia Edwards*

In *series: Retirement Issues, Plans and Lifestyles*

Hardcover: 978-1-63483-238-0. $120.00.
e-book: 978-1-63483-239-7. $120.00.

A pension is a voluntary benefit offered by employers to assist employees in providing for their financial security in retirement. Public and private sector defined benefit pension plans are subject to different rules and guidance regarding discount rates—interest rates used to determine the current value of estimated future benefit payments. This book addresses the significance of differences in approaches used to determine discount rates among public and private plans; purposes for measuring the value of a plan’s future benefits and key considerations for determining discount rate policy; and approaches selected countries have taken to choose discount rates.

**Poor Performing Federal Employees: Trends and Responses**

*Kelvin Schneider*

In *series: Business Issues, Competition and Entrepreneurship*

Hardcover: 978-1-63483-374-5. $120.00.
e-book: 978-1-63483-375-2. $120.00.

Federal agencies’ ability to address poor performance has been a long-standing issue. Employees and agency leaders share a perception that more needs to be done to address poor performance, even as a small number of poor performers can affect agencies’ capacity to meet their missions. This book describes and compares avenues for addressing poor performance; describes issues that can affect an agency’s response to poor performance; determines trends in how agencies have resolved cases of poor performance since 2004; and assesses the extent to which OPM provides guidance that agencies need to address poor performance.

**Protecting Workers’ Rights With U.S. Trade Partners: Federal Efforts**

*Samuel T. Stokes*

In *series: Business Issues, Competition and Entrepreneurship*

2015. 146 pp.
Hardcover: 978-1-63483-176-5. $120.00.
e-book: 978-1-63483-177-2. $120.00.

Protecting workers’ rights is a top priority for the Obama Administration, and the Office of the United States Trade Representative (USTR) and the Department of Labor (DOL) are leading the Administration’s efforts to improve labor laws and working conditions with trading partners in virtually every region of the globe.
These efforts are made in close coordination with other U.S. agencies and in collaboration with Congressional and other stakeholders, as well as international partners such as the International Labour Organization (ILO). This book discusses the Administration’s efforts in a number of key countries—Guatemala, Colombia, Jordan, Bahrain, Bangladesh, Swaziland, Haiti and Burma—in which USTR and DOL have had intensive engagement on labor issues in recent years. The book examines steps that selected partner countries have taken, and U.S. assistance they have received, to implement these provisions and other labor initiatives and the reported results of such steps; submissions regarding possible violations of FTA labor provisions that DOL has accepted and any problems related to the submission process; the extent to which U.S. agencies monitor and enforce implementation of FTA labor provisions and report results to Congress.

**Small Business Considerations, Economics and Research, Volume 7**
*Peter R. Bennett and Margaret O. Myers*

In series: Small Business Considerations, Economics and Research


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 management and technical assistance training programs; federal broadband deployment programs and small business; women-owned small business programs; and cosponsored activities that can benefit small businesses but lack a consistent feedback mechanism.

**Small Business Credit Programs: Elements and Analyses**
*Bradley N. Holloway*

In series: Business Issues, Competition and Entrepreneurship

2015. 159 pp.
Hardcover: 978-1-63482-563-4. $120.00.
e-book: 978-1-63482-564-1. $120.00.

Congressional interest in small business access to capital has increased in recent years because of concerns that small businesses might be prevented from accessing sufficient capital to enable them to assist in the economic recovery. Small businesses, defined as having fewer than 500 employees, have played an important role in net job growth during previous economic recoveries, particularly in the construction, housing, and retail sectors. Several laws were enacted during the 111th Congress to enhance small business access to capital. This book examines the Small Business Lending Fund, and the State Small Business Credit Initiative.

**Small Business Innovation Research and Small Business Technology Transfer Programs: Background and Issues**
*Thomas H. Chavez*

In series: Business Issues, Competition and Entrepreneurship

Hardcover: 978-1-63482-532-0. $145.00.

The Small Business Innovation Research (SBIR) program was established in 1982 by the Small Business Innovation Development Act to increase the participation of small innovative companies in federally funded R&D. In establishing the program, Congress found that technological innovation plays an important role in job creation, productivity improvements, and U.S. competitiveness; that small businesses are among the most cost-effective performers of R&D and particularly capable of bringing R&D results to market in the form of new products; and that despite the role of small businesses as—the principal source of significant innovations in the Nation, the vast majority of federally funded R&D is performed by large businesses, universities, and federal laboratories. This book provides background and examines issues in the SBIR and small business technology transfer programs.

**Small Business Innovators: Insights From Accelerators, Additive Manufacturing and Supply Chain Analysis**
*Mary Brown*

In series: Business Issues, Competition and Entrepreneurship

Hardcover: 978-1-63483-265-6. $145.00.

Innovation in the United States has been one of the driving forces in our development as one of the leading economies in the world. Small companies comprise the overwhelming majority of all businesses in the United States and they must be able to effectively and efficiently bring their innovative products and services to market and grow. In this book, the U.S. Small Business Administration’s Office of Advocacy focuses on additive manufacturing (also referred to as 3D printing) to determine if barriers, best practices, and big ideas found in that industry are instructive for technology industries generally. Moreover, small firms play an increasingly important role in U.S. manufacturing, and now account for almost half of America’s manufacturing employment. Dense networks of these small manufacturers are vital to the process of taking a product from concept to market, and the exchange of manufacturing know-how across suppliers is essential for the diffusion of the new products and innovative processes that give U.S. manufacturing its cutting edge. However, these small firms face barriers to innovation, a key element in strengthening U.S. competitiveness. The book describes these barriers, and offers suggestions about ways to increase innovation by small manufacturers and improve the flow of innovation and information within supply chains. Furthermore, the accelerator phenomenon has been cited nationally and internationally as a key contributor to the rate of business startup success. Accelerators select and invite a small group of entrepreneurs to startup boot camps, providing mentoring, resources, and, most important, industry connections during these programs. This book aims to help entrepreneurs and policymakers by categorizing a variety of startup assistance programs to determine what factors distinguish accelerators from other programs, as well as create a starting point for developing meaningful metrics to determine the relevance of accelerators for policymakers. The Office of Advocacy is the voice of small business within the federal government. Their mission includes collecting and disseminating data on the status of American small businesses. This book provides a snapshot of small businesses in each state, territory, the District of Columbia, and the United States using the most recently available government data. The profiles showcase several different data points associated with the nation’s small businesses including but not
limited to the number of small businesses, how many jobs small businesses create, how many small businesses export, and the leading small business industries in each state.

**Structured Financial Products and Financial Engineering: A Tax Avoidance Investigation**  
*Lenora Osborne*  
In *Business Issues, Competition and Entrepreneurship*  
Hardcover: 978-1-63463-785-5, $145.00.  

For the last decade, the U.S. Senate Permanent Subcommittee on Investigations has presented case histories showing how financial institutions, law firms, accountants, and others have designed and implemented complex financial structures to take advantage of and, at times, abuse or violate U.S. tax statutes, securities regulations, and accounting rules. This book offers yet another detailed case study of how two financial institutions – Deutsche Bank AG and Barclays Bank PLC – developed structured financial products called MAPS and COLT, two types of basket options, and sold them to one or more hedge funds, including Renaissance Technologies LLC and George Weiss Associates, that used them to avoid federal taxes and leverage limits on buying securities with borrowed funds.

**The Patent System: Key Developments and Issues for Further Consideration**  
*Deanna Hoffman*  
In *Business Issues, Competition and Entrepreneurship*  
Hardcover: 978-1-63482-267-1, $120.00.  
e-book: 978-1-63482-268-8, $120.00.

Following several years of legislative discussion concerning patent reform, the Congress enacted P.L. 112-29, signed into law on September 16, 2011. The Leahy-Smith America Invents Act, or “AIA,” made significant changes to the patent system. This book discusses the changes made as well was key developments and issues for further consideration in the patent system.

**Whistleblowers: Selected Issues and Protections**  
*Andre Pope*  
In *Business Issues, Competition and Entrepreneurship*  
2015. 96 pp.  
Softcover: 978-1-63482-290-9, $62.00.  

Generally speaking, whistleblowers are those who expose misconduct (e.g., fraud, abuse, or illegal activity) within an organization. Legal protections for employees who report illegal misconduct by their employers have increased dramatically since the late 1970s when such protections were first adopted for federal employees in the Civil Service Reform Act of 1978. Since that time, with the enactment of the Whistleblower Protection Act of 1989, Congress has expanded such protections for federal employees. Congress has also established whistleblower protections for individuals in certain private-sector employment through the adoption of whistleblower provisions in at least 18 federal statutes. This book provides an overview of key aspects of the 18 selected federal statutes applicable to individuals in certain private-sector industries. It also examines steps OSHA has taken to include auto industry employees in its whistleblower program and the extent to which OSHA collaborated with DOT components to address potential safety violations; and the number of transportation-related whistleblower claims in the last 6 years and stakeholder-identified factors that may affect those numbers.

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**Children**

**Child Abuse and Neglect: National Maltreatment Data and State Statutes**  
*Virginia Rhodes*  
In *Children’s Issues, Laws and Programs*  
Hardcover: 978-1-63482-718-8, $250.00.  

All 50 states, the District of Columbia, and the U.S. Territories have child abuse and neglect reporting laws that mandate certain professionals and institutions to report suspected maltreatment to a child protective services (CPS) agency. Most states recognize four major types of maltreatment: neglect, physical abuse, psychological maltreatment, and sexual abuse. Although any of the forms of child maltreatment may be found separately, they can occur in combination. This book provides data collected on child maltreatment from 2013; and discusses statutes identifying persons who are required to report suspected child maltreatment to an appropriate agency, such as child protective services, a law enforcement agency, or a State’s toll-free child abuse reporting hotline.

**Child and Adolescent Health Issues (A Tribute to the Pediatrician Donald E Greydanus)**  
*Joav Merrick*  
In *Pediatrics, Child and Adolescent Health*  
Edited by: *Joav Merrick*  
In *Children’s Issues, Laws and Programs*  
Hardcover: 978-1-63463-574-5, $170.00.  

This book is dedicated to professor Greydanus as he enters the septuagenarian decade of his life! Greydanus has been a pioneer in the field of especially adolescent health, but also in general pediatrics and child health with major contributions to research and teaching material. His contributions for many decades has inspired students and other pediatricians to “do their best: Doch dyne plicht.” In this book you will find a potpourri of research and knowledge of child and adolescent health information from an international perspective on topics that have been and still is the interest of the pediatrician Greydanus: Body shape and sexual health, research related to work, study and health of children and adolescents, injury, abuse and safety for children and adolescents and finally several interesting chapters about autism.

**Child Neglect: Assessment and Prevention**  
*Franklin Moss*  
In *Children’s Issues, Laws and Programs*  
Hardcover: 978-1-63482-771-3, $120.00.  
e-book: 978-1-63482-772-0, $120.00.

Each day, the safety and well-being of some children is threatened by child abuse and neglect. Intervening effectively in the lives of these children and their families is not the sole responsibility of any single agency or professional group, but rather is a shared community concern. In the area of neglect, both the field and the community increasingly recognize the impact of many factors such as poverty, unemployment, and housing, as well as individual and family characteristics. This book delves deeper into the root causes, symptoms, and consequences of neglect, as well as the interdisciplinary ways to prevent both its occurrence and recurrence. This book also reviews definitions and strategies for assessing neglect, presents
lessons learned about prevention and intervention, and suggests sources of training and informational support. Strategies for addressing neglect, beginning with prevention, are included.

Foster Care in Indian Tribes: Challenges and Federal Assistance
Margaret Evans
In series: Children’s Issues, Laws and Programs
2015. 69 pp.
Softcover: 978-1-63483-144-4, $62.00.
Title IV-E of the Social Security Act provides federal support for foster care and adoption assistance programs. Since 2008, 5 tribes have been approved to operate their own title IV-E foster care programs, although more than 80 tribes initially expressed an interest in doing so. The Department of Health and Human Services (HHS) provides development grants and technical assistance to tribes interested in establishing a title IV-E program. This book examines obstacles facing tribes interested in directly operating a title IV-E program; and the assistance HHS has provided. Under title IV-E, states are entitled to open-ended reimbursement for the cost of providing foster care, adoption assistance, and in states that choose to provide it) kinship guardianship assistance. Additional mandatory funding is available, on a capped basis, for services to youth who “age out” of foster care, or are expected to, and for Tribal Title IV-E plan development and technical assistance. The conclusion of this title provides information on child welfare proposals under the Title IV-E program.

Physical Activity Behaviors and Determinants in Children and Adolescents
Zan Gao and Zachary Pope (School of Kinesiology, University of Minnesota, Minneapolis, MN, USA)
In series: Physical Fitness, Diet and Exercise
Hardcover: 978-1-63483-635-7, $160.00.
Today’s children and adolescents are experiencing higher rates of overweightness/obesity and poorer health outcomes than any other time in history. As overweight or obese children are at greater risk of the same conditions in adulthood and the ensuing health consequences which arise, literature highlighting how theoretical frameworks can be utilized to guide physical activity intervention programs is advised and needed. Provision of contemporary research with the aforementioned objectives in mind is the reasoning behind the current book. By providing analyses and interpretation of children and adolescents’ physical activity behaviors through the lens of well-established psychological and/or health promotion theories, this book provides empirically-based conclusions and implementation strategies for scholars and practitioners who desire the promotion of physical activity participation and better health outcomes among these populations. Within this book, readers can expect to find chapters devoted to the analyses of physical activity behavior among children and adolescent in free-living and physical education settings with an emphasis of how the manipulation of physical activity determinants, such as physical activity self-efficacy, enjoyment, situational interest and social support, influence physical activity participation. Other aspects of the book include a synthesis of how variables such as parent’s beliefs regarding physical activity, perceived exertion, as well as the youth’s gender and age affect the related physical activity determinants and the subsequent implementations of physical activity interventions. It is hoped that through the current book’s structured formatting and writing quality, scholars and practitioners can better formulate real-world physical activity intervention programs which provide the best opportunity for the youth population to be more physically active and healthy.

Youth Aging Out of Foster Care: Housing Needs and Opportunities
Preston Schultz
In series: Children's Issues, Laws and Programs
Each year, approximately 25,000 youth exit the foster care system before being reunified with their family of origin, being adopted, or achieving another permanent living arrangement. These youth often have limited resources with which to secure safe and stable housing, which leaves them at heightened risk of experiencing homelessness. This book documents a series of research activities designed to address knowledge gaps related to the housing options available to youth who have aged out of foster care. Furthermore, this book describes the extent to which—and how—communities are using Family Unification Program (FUP) to support youth; reviews the characteristics of the young people, their risk of homelessness, and the barriers they face in securing stable housing, along with relevant federal and, to a lesser extent, state policies; and describes a wide range of housing programs for young people aging out of foster care, present a program typology, and conclude with the identification of a small group of innovative housing programs that may warrant closer exploration.

Youth Transitioning from Foster Care: Background, Issues, Characteristics, and Demographics
Lindsey R. Asher
In series: Children's Issues, Laws and Programs
Hardcover: 978-1-63463-787-9, $145.00.
While most young people have access to emotional and financial support systems throughout their early adult years, older youth in foster care and those who are emancipated from care often face obstacles to developing independent living skills and building supports that ease the transition to adulthood. Older foster youth who return to their parents or guardians may continue to experience poor family dynamics or a lack of emotional and financial supports, and studies have shown that recently emancipated foster youth fare poorly relative to their counterparts in the general population on several outcome measures. The federal government recognizes that older youth in foster care and those aging out are vulnerable to negative outcomes and may ultimately return to the care of the state as adults, either through the public welfare, criminal justice, or other systems. This book provides background on young people in and exiting from foster care, and the federal support that is available to these youth as they transition to adulthood.

Chinese Public Pensions Analyzed by OLG Models
Zaigui Yang (China Institute for Actuarial Science, Central University of Finance and Economics, China)
In series: China in Transition
Hardcover: 978-1-63463-979-8, $125.00.
e-book: 978-1-63463-980-7, $125.00.
This book investigates the urban and rural public pension systems in China with overlapping generations (OLG) models. This book is composed of three parts. Part one analyzes the urban public pension system, part two explores the rural public pension system, and part three discusses some possible public pension systems. It is difficult to find a book to study the Chinese public pension systems with the OLG model. This book can fill the gap in the market. It has the following

CHINESE STUDIES

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distinctive features. Firstly, instead of pay-as-you-go or fully funded public pension systems, this book studies the Chinese partially funded pension systems that combines the social pool account with individual accounts. Each chapter includes the author’s original work. Secondly, it investigates the public pension systems in a way of following proper sequence and making steady progress. This is convenient for readers to deepen their understanding of the Chinese public pension systems with OLG models. This book is fit for scholars outside China who are interested in the Chinese public pension systems, researchers in China who want to investigate the Chinese public pension systems with the OLG model, doctoral students, master degree students and senior undergraduate students. This book can help scholars outside China to promote their research on the Chinese public pension systems. Secondly, economists in developed countries studied public pension systems by employing OLG model since 1970s; but the model is still strange for most Chinese scholars. This book can help them to utilize the model, describe their research in English and express it in a comparative normal presentation. Thirdly, this book can provide references for doctoral students, master degree students and senior undergraduate students to learn how to use OLG models to study Chinese public pensions. Finally, it can open a door to the world outside China, show the state of research on public pension systems with OLG mode in China, and promote exchange and talk for the Chinese and foreign academic circles.

**COMMUNICATIONS**

**Social Marketing: Global Perspectives, Strategies and Effects on Consumer Behavior**  
*W. Douglas Evans, Ph.D. (Professor of Prevention and Community Health & Global Health, The George Washington University, Milken Institute School of Public Health, Washington, DC, USA)*  
In series: *Marketing and Operations Management Research*  
This book aims to capture the current state of social marketing theory, research, and practice across different subject matters and global settings. The main objectives are to synthesize recent developments in theory and research methods, especially those brought about by information technology. It is also one of the goals of the authors to illustrate those developments through a series of case studies.

**COUNTRY**

**Argentina: Conditions, Issues, and U.S. Relations**  
*Eileen Mckinney*  
In series: *Latin American Political, Economic, and Security Issues*  
Hardcover: 978-1-63482-251-0. $120.00.  
e-book: 978-1-63482-252-7. $120.00.  
Argentina, a South American country with a population of around 41 million, has had a vibrant democratic tradition since its military relinquished power in 1983. Current President Cristina Fernández de Kirchner, from a center-left faction of the Peronist party, was first elected in 2007 and is now approaching the final year of her second term. Argentina has Latin America’s third-largest economy and is endowed with vast natural resources. Agriculture has traditionally been a main economic driver, but the country also has a diversified industrial base and a highly educated population. This book discusses the conditions in Argentina as well as the issues and relations between Argentina and the United States.

**China and India: A Complex and Growing Relationship**  
*Kathleen Newman*  
In series: *Asian Political, Economic and Social Issues*  
Softcover: 978-1-63482-166-7. $62.00.  
With the world riveted by Chinese aggressiveness against Japan and Southeast Asian states in recent years, one country has not been particularly surprised: India. After all, New Delhi has been grappling with the challenge of China’s rapid rise for some time now. An uneasiness exists between the two Asian giants, as they continue their ascent in the global interstate hierarchy. Even as they sign loftily worded documents year after year, the distrust between the two is actually growing at an alarming rate. True, economic cooperation and bilateral political as well as sociocultural exchanges are at an all-time high; China is India’s largest trading partner. Yet this cooperation has done little to assuage each country’s concerns about the other’s intentions. The two sides are locked in a classic security dilemma, where any action taken by one is immediately interpreted by the other as a threat to its interests. This book discusses the complex relationship that China and India have.

**Encyclopedia of Oceania (3 Volume Set)**  
*Cory T. Meadows*  
In series: *Continents and Oceans Research*  
2015. 646 pp.  
Hardcover: 978-1-63321-154-4. $450.00.  
This book presents important research on Oceania. Topics discussed herein include the background and U.S. Relations with Australia; overseas workers and the role of professional associations; fisheries management; background and bilateral relations with the United States and New Zealand; U.S. defense deployments in Guam; and the Marshall Islands and Micronesia.

**Encyclopedia of the Caucasus (2 Volume Set)**  
*Brendan L. Cohen*  
In series: *Caucasus Region Political, Economic, and Security Issues*  
Hardcover: 978-1-63482-228-2. $350.00.  
This book presents important research on the Caucasus regions. Topics discussed herein include a country profile on Georgia; the Russia-Georgia conflict; Russian airborne forces; democratization and instability in Ukraine, Georgia and Belarus; political developments and the implications for U.S. interests in Armenia, Azerbaijan, and Georgia; country profiles of Armenia and Azerbaijan; and Russia's counterinsurgency in North Caucasus.

**India’s Trade, Investment and Industrial Policies and Their Effects on the U.S**  
*Alberto Maldonado*  
In series: *Asian Political, Economic and Social Issues*  
As the world’s 3rd largest economy, India is an important trade and economic partner for the United States. The visit by recently elected Prime Minister Narendra Modi, his first to Washington, DC, has
heightened congressional interest in the current status of the relationship. Modi’s visit provides the Obama Administration with an opportunity to advance the U.S.-India strategic partnership, including by discussing ways to foster greater trade and investment between the two nations. This book discusses India’s trade, investment, and industrial policies and their effects on the United States.

**The Georgian-Russian War of August 2008**

**Alexander Daushvili (Vice-Chairman of the Board of ICCS, Georgia)**

In series: *Caucasus Region Political, Economic, and Security Issues*


Hardcover: 978-1-63483-400-1, $160.00.


The Russian-Georgian War of August 2008 stands out for its socio-political, international, diplomatic, geostrategic, economic and moral-psychological results. Despite the fact that only some years have passed since the end of the war and we all are witnesses and participants of the preparation and of the accomplishment of this dramatic event, there are still many unanswered questions. There are more mysteries in respect of the actions of the main participants of this dramatic event, which dispose historians to study those events thoroughly “hot on the trail”, not to wait for a “historical distance”, and fill up secret documents with logical arguments and noteworthy hypotheses. The scientific conference, held in Tbilisi in the large hall of The Georgian National Academy of Sciences in the summer of 2014, was aimed precisely to the approbation of the new scholarly ideas on different aspects regarding the preparation and proceedings of the War of August 2008. The conference was attended by representatives of the historical community of Georgia and by the mass media. The reports were made at the conference by professors and scholars from Sukhumti State University, Akhaltsikhe Educational University and Tbilisi Scientific Centre for Historical, Ethnological, Religious Study and Propaganda. A former Minister of Defense of Georgia, General Giorgi (Gia) Karkarashvili, also sent his report. The present collection of works is simply a publication of an English version of these conference materials to which a critical analysis of the sensational book in Georgia “A Little War that Shook the World”, written by an eminent political-scientist and diplomat, R.D. Asmus, was added. In our opinion, it will help American readers to comprehend the issues more profoundly.

**Tibet: U.S. Policy, Human Rights and Religious Freedom**

**Lionel Johnson**

In series: *Asian Political, Economic and Social Issues*


Hardcover: 978-1-63482-180-3, $120.00.

e-book: 978-1-63482-181-0, $120.00.

The Tibetan Policy Act of 2002 (TPA) is a core legislative measure guiding U.S. policy toward Tibet. Its stated purpose is “to support the aspirations of the Tibetan people to safeguard their distinct identity.” Congress has shown a strong interest in Tibet since the 1980s, passing dozens of laws and resolutions related to Tibet, speaking out about conditions in Tibet, and welcoming visits by the Dalai Lama and, more recently, the political head of the India-based Central Tibetan Administration. Such actions have long been a source of friction in the U.S.-China relationship. China charges that they amount to support for challenges to Chinese rule in Tibet. This book discusses the U.S. policies and relations with Tibet, human rights and Tibet’s religious freedom reports.

**CRIMINAL JUSTICE AND LAW ENFORCEMENT**

**Exonerated by DNA: Issues and Case Profiles in the Use of Exculpatory DNA Evidence**

**Darrell Shaw**

In series: *Law, Crime and Law Enforcement*


Hardcover: 978-1-63463-963-7, $120.00.


DNA evidence offers prosecutors an important tool in the identification and apprehension of violent criminals, particularly in sexual assault cases. At the same time, DNA evidence can be used to exonerate the innocent. By highlighting the importance and utility of DNA evidence, this book presents challenges to the scientific and criminal justice communities. These challenges involve maintaining high standards for collecting and preserving DNA evidence, ensuring that DNA testing methodologies meet rigorous scientific criteria for reliability and accuracy, and increasing the proficiency and credibility of forensic scientists so their results and testimony are of the highest caliber, able to withstand exacting scrutiny. Commentaries and profiles of DNA exculpatory cases are presented to illustrate the power and potential of DNA evidence. Policy implications of DNA testing and use as evidence are also discussed.

**Investigating Financial Crime: Characteristics of White-Collar Criminals**

**Petter Gottschalk (BI Norwegian Business School, Nydalsveien, Oslo, Norway)**

In series: *Criminal Justice, Law Enforcement and Corrections*


This book presents descriptions of theories about white-collar crime offenders and offenses. A case study is developed from a sample of 369 white-collar criminals generated by extracting newspaper stories and supplemented by court records. Numerous approaches to white-collar crime are organized and applied to the database. Theories are cataloged and tested against empirical data. The main aim of this book is to present a framework for a general theory of white-collar crime based on a number of sub-theories. Over the years, from research done on white-collar crime, three major characteristics have been attributed. First there is economics, where non-violent acts are committed for financial gain. Next there is organization, where offenders take advantage of professional authority and power to commit crime. Finally there is behavior, where a number of deviant personality traits are often found. Criminal investigation is a procedure or method for reconstructing the past. Its purpose is creating an account of what has happened, how it happened, and who did what to make it happen. Private investigation cases are evaluated based on a number of theories and criteria. The success or failure of a private investigation can be measured at different stages in the process: basis for initiation of investigation, work methodology, investigation results, and investigation consequences. This book presents case studies of private investigation reports by financial crime specialists and fraud examiners.
Offenders No More: An Interdisciplinary Restorative Justice Dialogue
Theo Gavrielides (Founder & Director Independent Academic Research Studies (IARS), London, UK)
In series: Criminal Justice, Law Enforcement and Corrections
2015.
Offender rehabilitation theory and practice have traditionally focused on curing "offenders" of their deviant tendencies by changing their habits, opportunities, personality and outlook on life. Consequently, a number of interventions have been developed within the criminal justice system that are said to be involved in helping offenders. Success is measured by recidivism rates. To this end, rehabilitation has become an important aim of sentencing, whether it be in the form of incarceration, community or monetary penalties. Recently, the foundations of rehabilitation theory and practice have been shaken. Rehabilitation is now seen by many as a threat to offenders' rights and humanitarian principles. Some have even argued that rehabilitation practices are harmful to offenders' chances of correction. Alongside these concerns, the entire paradigm on which our modern criminal justice systems are based has also been questioned. Alternative visions of justice have been moved out of the shadows in the hope that more effective processes are developed for safer and more just societies. One of these visions is encapsulated in restorative justice, which is based on the foundation of promoting human goods in the pursuit of restoration of harm and the correction of deviant behaviour. Restorative justice practices, such as mediation, circles and conferencing bring to the forefront of affairs, activities and experiences that are strongly associated with well-being and higher level of personal satisfaction and social functioning. They aim to create empathy and remorse, and through constructive and honest dialogue create a sense of responsibility in the "offender" and a feeling of empowerment and justice in the "victim". Within this framework, the labels of "victim" and "offender" collapse. A new approach to crime reduction and offender rehabilitation is thus needed. This ground-breaking, edited volume aims to respond to this call by bringing together inter-disciplinary thinking from criminology, affect-script psychology, sociology, political sciences and human rights, psychology and positive psychology, design and arts and social work. The inter-disciplinary dialogue that this book promotes aims to advance the restorative justice field, its tools, practices and evaluation techniques by bringing rehabilitation theory into the restorative justice debate, and vice versa.

The Shooting Death of Michael Brown and the Ferguson Police Department: DOJ Investigations
Keith H. Gonzales
In series: Criminal Justice, Law Enforcement and Corrections
Hardcover: 978-1-63483-244-1. $185.00.
At approximately noon on Saturday, August 9, 2014, Officer Darren Wilson of the Ferguson Police Department (FPD) shot and killed Michael Brown, an unarmed 18-year-old. The Criminal Section of the Department of Justice Civil Rights Division, the United States Attorney's Office for the Eastern District of Missouri, and the Federal Bureau of Investigation (FBI) (collectively, "The Department") subsequently opened a criminal investigation into whether the shooting violated federal law. The Department has determined that the evidence does not support charging a violation of federal law. This book details the Department's investigation, findings, and conclusions.

DEFENSE AND SECURITY

Information Security and Cybersecurity at the Federal Aviation Administration: Challenges and Control Efforts
Victor Morris
In series: Defense, Security and Strategies
2015. 100 pp.
Hardcover: 978-1-63483-312-7. $120.00.
e-book: 978-1-63483-313-4. $120.00.
While the Federal Aviation Administration (FAA) has taken steps to protect its air traffic control systems from cyber-based and other threats, significant security control weaknesses remain, threatening the agency's ability to ensure the safe and uninterrupted operation of the national airspace system (NAS). These include weaknesses in controls intended to prevent, limit, and detect unauthorized access to computer resources, such as controls for protecting system boundaries, identifying and authenticating users, authorizing users to access systems, encrypting sensitive data, and auditing and monitoring activity on FAA's systems. Additionally, shortcomings in boundary protection controls between less-secure systems and the operational NAS environment increase the risk from these weaknesses. The objective of this book is to evaluate the extent to which FAA has effectively implemented information security controls to protect its air traffic control systems. This book also identifies the cybersecurity challenges facing FAA as it shifts to the NextGen ATC system and how FAA has begun addressing those challenges; and assesses the extent to which FAA and its contractors, in the acquisition of NextGen programs, have followed federal guidelines for incorporating cybersecurity controls.

Landpower in the 21st Century: Perspectives on Policy and Strategy
Elizabeth Baker
In series: Defense, Security and Strategies
Softcover: 978-1-63483-172-7. $62.00.
Landpower, defined here as "the ability—by threat, force, or occupation—to exploit control over land, resources, and people," offers policymakers significant utility in peace, crisis, or war. This book provides better understanding of Landpower essential if national leaders are to have a full range of policy options for protecting and promoting the nation's interests in the face of shifting geostategic conditions.

Maritime Supply Chain Security: High-Risk Cargo and Foreign Port Issues
Dolores G. Ortega
In series: Defense, Security and Strategies
Softcover: 978-1-63482-777-5. $62.00.
The U.S. economy is dependent on a secure global supply chain. In fiscal year 2013, approximately 12 million maritime cargo shipments arrived in the United States. Within the federal government, U.S. Customs and Border Protection (CBP) is responsible for administering cargo security, to include identifying "high-risk" maritime cargo shipments with the potential to contain terrorist contraband. This book discusses how many maritime shipments CBP determined to be high risk and the extent to which CBP has accurate data on the disposition of such shipments; the extent to which CBP consistently applies criteria and documents reasons for waiving examinations; and the extent to which CBP ensures its policies on the disposition of high-risk shipments are being followed. Furthermore, this book addresses the
extent to which Department of Homeland Security (DHS) has assessed foreign ports that pose the greatest risk to the global supply chain and focused its maritime container security programs to address those risks; and actions DHS has taken to help ensure the efficiency and effectiveness of its maritime security programs.

Steven R. Wade
In series: Defense, Security and Strategies
2015. 121 pp.
Hardcover: 978-1-63483-444-5. $120.00.
e-book: 978-1-63483-445-2. $120.00.
The People’s Republic of China (PRC) continues to pursue a long-term, comprehensive military modernization program designed to improve its armed forces’ capacity to fight short-duration, high-intensity regional conflicts. China’s military modernization has the potential to reduce core U.S. military technological advantages. China is investing in capabilities designed to defeat adversary power projection and counter third-party—including U.S.—intervention during a crisis or conflict. This book examines the military and security developments involving the PRC. Moreover, it provides and discusses the highlights from China’s new defense white paper, “China’s Military Strategy.”

National Emergency Communications Plan: Components and Challenges
Carl R. Bush
In series: Defense, Security and Strategies
The National Emergency Communications Plan (NECP) is the Nation’s over-arching strategic plan for enhancing emergency communications capabilities and interoperability nationwide. The NECP updates the original plan issued in 2008 and addresses the increasingly complex communications landscape that the public safety community uses to keep America safe and secure. The plan provides a roadmap for improving emergency communications for traditional emergency responder disciplines such as law enforcement, fire, and emergency medical services, while recognizing the importance of engaging non-traditional disciplines including public health, public works and transportation agencies. This book discusses the components and challenges of the National Emergency Communications Plan.

Navy Shipboard Lasers: Background, Advances, and Considerations
William C. Jenkins
In series: Military and Veteran Issues
Hardcover: 978-1-63483-372-1. $120.00.
e-book: 978-1-63483-373-8. $120.00.
Department of Defense (DOD) development work on high-energy military lasers, which has been underway for decades, has reached the point where lasers capable of countering certain surface and air targets at ranges of about a mile could be made ready for installation on Navy surface ships over the next few years. More powerful shipboard lasers, which could become ready for installation in subsequent years, could provide Navy surface ships with an ability to counter a wider range of surface and air targets at ranges of up to about 10 miles. This book focuses on potential Navy shipboard lasers for countering surface, air, and ballistic missile threats.

New Developments in Surveillance Systems and National Security
Katrina F. Hodges
In series: Defense, Security and Strategies
Hardcover: 978-1-63482-464-4. $190.00.
e-book: 978-1-63482-488-0. $190.00.
National security has become a major concern with the rise of terrorist groups and technological advances. Surveillance systems are crucial in maintaining security. This book discusses different types and forms of cybercrimes; security in medical institutions; real-time surveillance; biofocal panoramic lenses; the Gaussian mixture model; hybrid wars and defense synergetics; and a futuristic perspective in global health diplomacy.

Specialty Metal Use by the Department of Defense: Analysis and Issues
Mackenzie R. Barker
In series: Defense, Security and Strategies
2015. 81 pp.
Softcover: 978-1-63482-061-5. $62.00.
Specialty metals are essential to the manufacture and performance capabilities of certain Department of Defense (DOD) weapon system parts, due to their unique properties, such as being highly magnetic, lightweight, corrosion resistant, or having high durability. Among these metals are samarium-cobalt alloy magnets used to make radar systems, as well as titanium and certain steel alloys used to make aircraft, submarines, and tactical ground vehicles. There are few, if any, substitutes for some of these metals. This book assesses how DOD meets its needs for specialty metals parts and ensures compliance with restrictions; and DOD’s process for providing national security waivers for specialty metal procurements and the extent to which it disseminates waiver information throughout the department.

The Department of Defense’s Global Distribution Pipeline: An Assessment
Raymond Patterson
In series: Defense, Security and Strategies
2015. 91 pp.
Softcover: 978-1-63483-267-0. $62.00.
To measure the performance of its global distribution pipeline, the Department of Defense (DOD) has established three metrics: (1) logistics response time—number of days between the time a customer submits an order and receives it, (2) customer wait time—number of days between the time a maintenance unit, a subset of customers, submits an order and receives it, and (3) time-definite delivery—a measure of the probability that a customer will receive an order within an established logistics response time. However, these metrics do not provide decision makers with a complete representation of performance across the entire global distribution pipeline. This book assesses the extent to which DOD has established metrics for its distribution performance; is able to accurately measure its performance against distribution standards; and has taken actions to identify causes and develop solutions for any gaps in distribution. Furthermore, the book reviews the extent to which DOD has developed and implemented corrective action plans that address challenges in the three focus areas; an effective program for monitoring and validating the effectiveness and sustainability of supply chain management corrective actions; and an ability to demonstrate supply chain management progress.
The Department of Homeland Security: Assessment, Recommendations, and Appropriations

Roberta Zimmerman
In series: Defense, Security and Strategies
This book is a comprehensive overview of oversight conducted over the past decade to measure how well DHS is achieving its mission, operating its programs, spending taxpayer funds, complying with the law, and respecting the boundaries established to limit the federal government and protect the rights of law abiding U.S. citizens. This book describes and analyzes the discretionary appropriations for the Department of Homeland Security (DHS) for fiscal year 2015 (FY2015). It compares the President’s request for FY2015 funding for the Department of Homeland Security (DHS), the enacted FY2014 appropriations for DHS, and the House-reported homeland security appropriations legislation for FY2015. The book tracks legislative action and congressional issues related to DHS appropriations with particular attention paid to discretionary funding amounts.

The F-35 Joint Strike Fighter Program: Background, Affordability and Sustainability Issues
Nigel C. Terra
In series: Defense, Security and Strategies
Hardcover: 978-1-63463-901-9. $120.00.
e-book: 978-1-63463-927-9. $120.00.
The largest procurement program in the Department of Defense (DOD), the F-35 Joint Strike Fighter (JSF), also called the Lightning II, is a strike fighter aircraft being procured in different versions for the United States Air Force, Marine Corps, and Navy. The F-35 Lightning II is intended to replace a variety of existing aircraft in the Air Force, Navy, and Marine Corps, while providing the most supportable, technologically advanced, lethal, and survivable aircraft to date. The F-35 is DOD’s most expensive weapon system. This book addresses F-35 program performance during 2012, including testing, technical risks, and software; manufacturing performance indicators, production results, and design changes; and acquisition and sustainment costs going forward. This book also addresses the extent to which DOD has developed an F-35 sustainment strategy and addressed potential risks related to affordability and operational readiness; and developed a reliable O&S cost estimate for the program’s life cycle.

The International Security Environment: Shifts and Defense Implications
Arthur P. Sullivan
In series: Defense, Security and Strategies
2015. 139 pp.
Hardcover: 978-1-63482-440-8. $120.00.
e-book: 978-1-63482-441-5. $120.00.
World events since late 2013 have led some observers to conclude that the international security environment is undergoing a shift from the familiar post-Cold War era of the last 20-25 years, also sometimes known as the unipolar moment (with the United States as the unipolar power), to a new and different strategic situation that features, among other things, renewed great power competition and challenges to elements of the U.S.-led international order that has operated since World War II. A shift in the international security environment could have significant implications for U.S. defense plans and programs. This book discusses potential implications for defense and issues for Congress that arise with a shift in the international security environment. It also examines outcomes and key challenges of NATO’s Wales Summit; priorities for 21st century defense; and discusses the 2014 Quadrennial Defense Review and defense strategy.

Disability Studies

Social Security Disability Programs: Solvency, Reform of Growing Disability Rolls, and Physician-Assisted Fraud Issues
Gary C. Santiago
In series: Disability and the Disabled - Issues, Laws and Programs
Hardcover: 978-1-63482-565-8. $120.00.
e-book: 978-1-63482-566-5. $120.00.
Social Security Disability Insurance (SSDI) is a social insurance program that provides benefits to insured workers under the full retirement age who meet the statutory test of disability and to their eligible dependents. Unlike some other federal programs, benefit payments and administrative costs associated with the SSDI program are paid not out of the General Fund but from a dedicated Federal Disability Insurance (DI) Trust Fund in the U.S. Treasury. This book provides an overview of the DI trust fund and examines potential solutions to improve the DI trust fund’s solvency in the short term. The Social Security Administration (SSA) has policies and procedures in place for detecting and preventing fraud with regard to disability benefit claims. This book reviews how well SSA’s policies and procedures are designed and implemented to detect and prevent physician-assisted fraud; and the steps SSA is taking to improve its ability to prevent physician-assisted fraud.

Technology, Rehabilitation and Empowerment of People with Special Needs
Lena Pareto, Ph.D., Paul M Sharkey, Ph.D. and Joav Merrick, M.D. (Division of Media and Design, University West, Trollhättan, Sweden)
In series: Disability Studies
Edited by: Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
Hardcover: 978-1-63482-713-3. $190.00.
The digitalization of society is spreading around the world and technology has become part of many people’s daily lives. It acts as a means of communication, work, education and leisure. For populations with special needs (people with some kind of disability or disorder) technology can play an essential role in their rehabilitation and treatment. It also empowers the individuals themselves. The aim of this multi-disciplinary research for decades has been to explore, develop and evaluate innovative technology to aid people with disabilities through virtual reality and associated machinery. The field engages researchers from health sectors, areas of engineering and schools of education to collaborate in order to take on a holistic approach to meet these challenges.

Drugs

Alcohol Excise Taxes: Overview and Economic Analysis
Theodore Prescott
In series: Drug Transit and Distribution, Interception and Control
Softcover: 978-1-63482-051-6. $62.00.
The federal excise tax on alcoholic beverages is imposed at the manufacturer and importer level, based on the per unit production or importation of alcoholic beverages (e.g., distilled spirits, wine, and beer) for sale in the U.S. market. Today, three main approaches drive interest in alcohol taxes: tax rates could be decreased to benefit firms in the industry; excise tax rates could be increased for deficit reduction; or excise tax rates could be increased to discourage the negative spillover effects of alcohol consumption. This book provides a brief historical overview of alcohol excise tax policy and a description of current law; analyzes alcohol excise tax rates based on some of the standard criteria for tax evaluation; and discusses bills introduced in the 113th Congress that would reduce current excise tax rates as well as possible approaches to raising alcohol excise tax rates.

International Narcotics Control: Efforts, Strategies, and Data
Jerry Perez
In series: Drug Transit and Distribution, Interception and Control
Hardcover: 978-1-63483-047-8. $310.00.
The 2015 International Narcotics Control Strategy Report is an annual report by the Department of State to Congress prepared in accordance with the Foreign Assistance Act. It describes the efforts of key countries to attack all aspects of the international drug trade in calendar year 2014. Volume I covers drug and chemical control activities. Volume II covers money laundering and financial crimes.

Marijuana: Emerging Legal Issues and Federal Tax Proposals
Victor P. Tyson
In series: Drug Transit and Distribution, Interception and Control
2015. 121 pp.
Hardcover: 978-1-63482-057-8. $120.00.
e-book: 978-1-63482-058-5. $120.00.
The federal Controlled Substances Act (CSA) outlaws the possession, cultivation, or distribution of marijuana except for authorized research. Twenty states have regulatory schemes that allow possession, cultivation, or distribution of marijuana for medicinal purposes. Two have revenue regimes that allow possession, cultivation, or sale generally. The U.S. Constitution’s Supremacy Clause preempts any state law that conflicts with federal law. Although there is some division, the majority of state courts have concluded that the federal-state marijuana law conflict does not require preemption of state medical marijuana laws. The legal consequences of a CSA violation, however, remain in place. Nevertheless, current federal criminal enforcement guidelines counsel confining investigations and prosecutions to the most egregious affront to federal interests. This book analyzes some legal issues related to marijuana and provides some proposals to resolve the issues. It also discusses federal tax proposals for marijuana.

National Counternarcotics Strategies for the Southwest and Northern Borders
Miranda Richards
In series: Drug Transit and Distribution, Interception and Control
Hardcover: 978-1-63463-843-2. $120.00.
e-book: 978-1-63463-884-5. $120.00.
The United States, at the local, state, tribal, and Federal levels, has made a concerted effort to enhance, expand, and codify multiple measures designed to address the serious threats posed by illicit drug trafficking across the Southwest border and violence in Mexico. Despite many successes, improved cooperation, coordination, unity of effort, and information sharing, illicit drug trafficking continues to be a multi-faceted threat to our national security which requires additional focus and effort. Also, the vastness of the 5,225-mile border shared by the United States and Canada as well as ever-changing drug trafficking trends prove challenging for the law enforcement and intelligence entities operating along the Northern border. However, by building upon a strong history of partnership and shared commitment, U.S. and Canadian agencies can find success in reducing the cross-border flow of illicit drugs. The National Northern Border Counternarcotics Strategy sets forth the Administration’s plan to curtail the illegal trafficking of drugs and drug proceeds across the U.S.-Canada border. In this book, five strategic objectives provide an overview of current efforts and planned actions that will help in the success of the plan.

ECONOMICS

Bank Capital and Basel III Regulations: Implementation and Effects
Caroline R. Mendoza
In series: Banks and Banking Developments
Hardcover: 978-1-63482-429-3. $120.00.
e-book: 978-1-63482-430-9. $120.00.
The Basel III international regulatory framework, which was produced in 2010 by the Basel Committee on Banking Supervision at the Bank for International Settlements, is the latest in a series of evolving agreements among central banks and bank supervisory authorities to standardize bank capital requirements, among other measures. Capital serves as a cushion against unanticipated financial shocks, which can otherwise lead to insolvency. The Basel III regulatory reform package revises the definition of regulatory capital and increases capital holding requirements for banking organizations. This book summarizes the higher capital requirements for U.S. banks regulated for safety and soundness. It examines how the U.S. Basel III regulations may affect U.S. banks, including smaller ones; and implementation of Basel III by different countries and other jurisdictions may affect U.S. banking organizations’ international competitiveness.

Charitable Organizations: IRS Oversight and Tax Issues for Congress
Lynda Meyers
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-63482-600-6. $120.00.
e-book: 978-1-63482-601-3. $120.00.
IRS oversight of charitable organizations helps to ensure they abide by the purposes that justify their tax exemption and protects the sector from potential abuses and loss of confidence by the donor community. In recent years, reductions in IRS’s budget have raised concerns about the adequacy of IRS oversight. This book describes the charitable organization sector; describes IRS oversight activities; determines how IRS assesses its oversight efforts; and determines how IRS collaborates with state charity regulators and U.S. Attorneys to identify and prosecute organizations suspected of engaging in fraudulent (or other criminal) activity. This book also provides an overview of recent changes affecting tax-exempt and charitable organizations, while also discussing issues that may be of legislative interest in the future.

Decision and Game Theory: Perspectives, Applications and Challenges
Kyle Chapman
In series: Economic Issues, Problems and Perspectives
Human communication can be characterized in terms of game theory as competing motivations in a social game in which one person desires "winning" in terms of obtaining compliance. Furthermore, game theory is an interesting framework for dialogue modeling, both the human dialogue and the human-machine dialogue. The first chapter describes the author’s contribution on the pragmatics of the dialogue, and proposes a general model of dialogue based on game theory. The second and third chapters review game theory as a way to analyze many different kinds of decisions and decision problems. The remaining chapters present a methodology based on Decision Analysis; decisions in everyday statistics; and an analysis of Thomas Bayes’ famous "Essay Towards Solving a Problem in the Doctrine of Chances."

Development of the 2020 Census: Selected Analyses and Issues
Maureen Kent
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-63482-992-2. $120.00.
e-book: 978-1-63482-992-2. $120.00.

The Census Bureau is responsible for collecting and providing data about the people and economy of the United States. The United States Government Accountability Office’s (GAO) prior work has shown that it will be important for the Bureau to reexamine the design of the census in order to ensure a cost effective census in 2020. This book identifies what opportunities and risks, if any, the Bureau might need to consider for these efforts going forward; and examines to what extent these three efforts are on track with respect to scheduling, resources, and other performance metrics.

Economic Cost of Foodborne Illnesses in the United States
Brenda Montgomery
In series: Economic Issues, Problems and Perspectives
2015. 130 pp.

Each year, one in six people in the United States is sickened by a foodborne illness. Government, industry, and others expend considerable resources in trying to prevent these foodborne illnesses. To best marshal these resources, food industry managers and policymakers need to know both the value of these efforts to society and how to target use of these resources. Estimates of the economic burden of illness provide a conservative measure of how much people are willing to pay to prevent these illnesses. This book provides an overview of recent estimates of the economic burden imposed annually by 15 leading foodborne pathogens in the United States. It examines cost-of-illness estimates with a focus on analyzing the factors that drive differences between them.

Fairness in Taxation: Analyses and Perspectives
Terry M. Brooks
In series: Economic Issues, Problems and Perspectives
2015. 142 pp.
Hardcover: 978-1-63482-675-4. $120.00.
e-book: 978-1-63482-676-1. $120.00.

While most would agree that taxation should be fair, views as to what constitutes a fair tax vary. Economists and political philosophers since the days of Adam Smith have recognized two broad concepts of fair taxation. One such principle is known as the benefit principle, under which taxes should be levied in proportion to the benefits received from the public sector. Under this principle, it is the government’s job to view taxes as the prices that would prevail in an actual market for the government service. The second principle is known as the ability to pay principle. This principle focuses only on the tax side of the budget, and views taxation as imposing an aggregate cost that must be apportioned in a manner that taxes those with equal ability to pay equally, and imposes greater burdens on those with greater ability to pay. This book discusses the fairness and tax policies in the U.S., and provides the 2011 distribution of household income and federal taxes.

Federal Taxation of Wealth Transfers: Analyses, Proposals and Perspectives
Jerry Washington
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-63482-991-5. $120.00.
e-book: 978-1-63482-992-2. $120.00.

This book contains an explanation of the major provisions of the federal estate, gift, and generation-skipping transfer taxes as they apply to transfers in 2014. It provides basic principles regarding the computation of these three transfer taxes. It also provides a history, description, and analysis of the Federal estate, gift, and generation-skipping transfer taxes (also referred to as the “wealth transfer taxes”), as well as a description of selected reform proposals.

Fiscal Policy: International Aspects, Short and Long-Term Challenges and Macroeconomic Effects
Charles Amo-Yartey, Ph.D. (IMF Resident Representative in Liberia, African Department, International Monetary Fund, Washington DC, USA)
In series: Monetary, Fiscal and Trade Policies

Fiscal policy is an important factor influencing the growth performance of countries. However, compared to the large empirical literature on the effects of monetary policy on economic activity, fiscal policy has received less attention. In this book, the authors present current research in the study of fiscal policy and the macroeconomy as well as the challenges of fiscal policy in the current global environment. The book brings a global perspective to the practice of fiscal policy by presenting case studies from the United States, the European Union, and the Caribbean. Topics discussed in the book include international dimensions of fiscal policy, public debt and the economy, austerity versus stimulus and economic growth, the correction of economic imbalances in Europe, the long term impact of fiscal devaluation, the cyclicity of fiscal policy, the appropriate debt ceilings for small states, lessons from the banking union framework in the Euro Area, fiscal policy and competitiveness, policy lessons from debt restructuring in Jamaica, estimating the structural fiscal balance in small islands and fiscal policy rules and fiscal performance.

Income Distribution in the United States: Measures, Trends and Analyses
Clayton Diaz
In series: Economic Issues, Problems and Perspectives
2015. 147 pp.
Hardcover: 978-1-63482-675-4. $120.00.
e-book: 978-1-63482-676-1. $120.00.

The distribution of income in the United States features heavily in congressional discussions about the middle class, program funding and effectiveness, new and existing target groups, government tax revenue, and social mobility, among other topics. Recently, the level and distribution of U.S. income have also been raised in the context of broader macroeconomic issues, such as economic growth. Accordingly, Congress has sought information on the absolute and
relative experience of U.S. households, the range of incomes, and their dispersion. This book is a guide to various measures, indicators, and graphics commonly used to describe the U.S. income distribution. It examines the complexities of income measurement, outlines important definitional and data considerations to bear in mind when using and interpreting income statistics, and reviews descriptive statistics commonly used in analysis. It also discusses the Gini index, a popular summary measure of income dispersion and an appendix presents information on additional summary indicators of income dispersion reported annually by the U.S. Census Bureau. This book also examines changes over time and across countries in the shape of the income distribution to afford Members of Congress a broader perspective when deliberating such policy issues as the progressivity of income tax rates, the generosity of social insurance programs, and the level of the minimum wage.

**International Labor Grants: U.S. Management and Monitoring Efforts**
*Cristina M. Porter*

In series: *Monetary, Fiscal and Trade Policies*
2015. 79 pp.
Softcover: 978-1-63482-398-2. $62.00.

Recent incidents, including the collapse of a factory building in Bangladesh, have highlighted poor working conditions overseas. According to the International Labour Organization (ILO), millions of children worldwide are engaged in labor that hinders their development. The Bureau of International Labor Affairs (ILAB) provides technical assistance mainly through international and nongovernmental organizations to improve working conditions by supporting worker rights and combating child labor. This book examines how ILAB develops its technical assistance projects; how ILAB selects recipients of its funding; and how the Department of Labor manages its grant award documentation.

**Macroeconomics: Principles, Applications and Challenges**
*Carly M. Hutson*

In series: *Economic Issues, Problems and Perspectives*
Softcover: 978-1-63463-596-7. $82.00.

The first chapter in this book deals with an analysis of determinants of both net international investment positions and net costs of negative investment positions in transitive countries. It defines sustainable conditions that assume foreign investors will be prepared to continue to (re)finance negative investment positions in short and long-time periods. The sustainability conditions are derived from dynamics of both sources created through net export surplus and negative net yields paid from an international investment position. This chapter points out important differences between a position of large advanced and small transitive economies in the case of net costs of a negative net investment position. The second chapter examines the Messe-Rogoff puzzle, which demonstrates that exchange rate models cannot outperform the random walk in out-of-sample forecasting. The final chapter assesses the productivity change and efficiency of banks in Ghana.

**Money, Economics, and Finance: Developments, Analyses and Research. Volume 4**
*Clifford Dobrowski*

In series: *Money, Economics, and Finance: Developments, Analyses and Research*
Hardcover: 978-1-63482-606-8. $120.00.
e-book: 978-1-63482-607-5. $120.00.

In this fourth book of the series "Money, Economics, and Finance: Developments, Analyses, and Research”, topics discussed include high-frequency trading; policy concerns and recent developments in dark pools in equity trading; the Berne Union; remittances; risk to consumers by virtual currencies; and older consumers and mortgage debt.

**Progress in Economics Research. Volume 30**
*Albert Tavidze*

In series: *Progress in Economics Research*
Hardcover: 978-1-63463-739-8. $160.00.
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 strategic analysis of global firms; emotions in personal metaphors of prospective secondary economics, science, and psychopedagogy teachers; competition and antitrust policy; financing mental health facilities during the economic recession; and parametric control of economic growth processes and characteristics of short-term cycles.

**Progress in Economics Research. Volume 31**
*Albert Tavidze*

In series: *Progress in Economics Research*
Hardcover: 978-1-63482-502-3. $190.00.
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 the economic stagnation thesis; potential pathways from land use to health, equality, economic development and sustainability; changing causal relationships between China and U.S. stock markets; the political-economic background of the contemporary depth crises in Europe; the strategic development of the Scottish cruise tourism sector and the factors affecting future growth; development of an optimised, automated multidimensional model for supply chain management; new focus of the agricultural policy in Europe; large time asymtotics of exchange rates via non-Gaussian semimartingale monetary dynamics; a theoretical approach to the quantitative dynamic structure of shocks in macroeconomic business cycle; and market power in bilateral oligopoly.

**Progress in Economics Research. Volume 32**
*Albert Tavidze*

In series: *Progress in Economics Research*
Hardcover: 978-1-63482-796-6. $190.00.
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 twelve fundamental contemporaneous contributions for the advancement of economic thought; modern approaches to natural monopoly identification and regulation under Russian economic reform; credit accessibility and small and medium sized enterprises growth in Vietnam; a solution for economic growth in developing countries; long term forecast of GDP in the context of Quasi-Solow balanced economic growth; purple oceans and the M&A virtuous circle new concepts for the theory of mergers & acquisitions; effects of labor migration on technical efficiency for rice-producing households in the Mekong river delta of Vietnam; and unified quasi-maximum likelihood estimation theory for stable and unstable Markov bilinear processes.
Progress in Economics Research. Volume 33
Albert Tavidze
In series: Progress in Economics Research
Hardcover: 978-1-63482-825-3. $190.00.
In this next volume of Progress in Economics Research, chapters include research on the impact of fiscal consolidation in developing countries on the real economy and propose an analysis of the austerity programs implemented in the Central and Eastern European and Baltic countries; transport infrastructure and how it influences the location of manufacturing firms allowing access to markets (local and international); the prospects and limitations of the intertemporal approach to global external imbalances; asset allocation strategies for members of defined-contribution pension plans with exponential utility with three types of assets; an analysis on positive versus negative reciprocity, considered part of behavioral economics; and insight into the Italian health care financing scenario. Specifically, the authors analyze regional political fragmentation and competition for effective political power between majority and opposition coalitions and test if the fragmentation of both coalitions are key variables that determine their effective political power.

Self-regulation of Market Economy: Interdisciplinary Analysis
Paata Leiashvily (Ivane Javakhishvili Tbilisi State University, Department of Economic Theory, Tbilisi, Georgia)
In series: Economic Issues, Problems and Perspectives
2015. 147 pp.
Hardcover: 978-1-63483-324-0. $110.00.
Due to the dialectical analysis of fundamental economic categories, the market economy appears as a complex, nonlinear, functionally closed (but causally open) system of economic actions. Such systems have a number of unique properties that have been well studied in chaos theory, constructivism and second-order cybernetics. This allows for the study of economic processes to involve unique research and development of these fields in the format of interdisciplinary analysis. In this monograph, a mathematical model of general economic equilibrium (i.e. the model of the attractor) is proposed, for which a decentralized economy always strives towards by virtue of the immanent logic of the development of intrasystem processes (but never reaches it because of the permanent impact of natural and social environments).

Social Capital: Global Perspectives, Management Strategies and Effectiveness
C. Douglas Johnson, Ph.D. (Professor of Leadership and Management, Georgia Gwinnett College, Georgia, USA)
In series: Economic Issues, Problems and Perspectives
Social capital has been previously introduced using a mandala to provocatively evoke thoughts of a web of interconnections forming a pattern of relationships. This kaleidoscopic perspective remains true today as we continue to explore the complexities associated with the construct known as “social capital”. This construct is unique in its ability to span boundaries, engage multiple disciplines, and global contexts. The web involves individuals, organizations, communities, and societies; it analyzes the dynamics involved as these various aspects interact with each other. The linkages have the capacity to bond or bridge individuals. As connections form, the depth and breadth of one’s social capital morphs. This prompts a shift in perspective that offers new and fresh ideas and experiences. In this collection, we expand the constellations of networks as we move from theory, measurement and outcomes to implore various global perspectives, management strategies and their effectiveness. Indeed, most would agree that social capital emerged out of sociology. However, it has evolved into a mature field of study with lots of uncharted territory still open for exploration (e.g., Kwon & Adler, 2014). This present collection, Social Capital: Global Perspectives, Management Strategies and Effectiveness, is vast in the domains covered, methodologies employed, and perspectives presented. The strength of the book is its interdisciplinary, multilevel, and global approach to examining social capital.

Towards A Society with a More Fair Economy or an Economy with a More Social Face: The Contribution of Scientific Social Knowledge to the Alternative Models of Socioeconomic Development
José António Filipe, Nikos Nagopoulos, Kostas Rontos and Ioannis Vavouras (University Institute of Lisbon, Portugal; Sociology Department, University of Aegean, Greece)
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-63482-900-7. $190.00.
It has been established long ago that unrestricted economic growth is not a sufficient condition for the overall advancement of nations. With this in mind, we must switch our priorities to development. Development is a much wider concept than growth; it stimulates the social and political advancement of countries. Unfortunately, the identification and analysis of these sociopolitical transformations is associated with major difficulties. However, this problem should not hinder policymakers and academic researchers’ concern for the social and political dimensions of development. This book focuses on the reality that a balanced, sustainable, overall development of nations will overcome the various problems that humanity faces today.

U.S. Currency and the Blind and Visually Impaired: Addressing Accessibility Features
Arlene Truman
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-63463-903-3. $145.00.
All blind and many persons with low vision are unable to distinguish currency denominations without assistance. The U.S. District Court for the District of Columbia found that Treasury failed to provide meaningful access to U.S. currency to visually impaired persons, and in 2008, ordered Treasury to take steps to do so. The court did not define meaningful access, leaving it to Treasury to choose a course of action. Within Treasury, the Bureau of Engraving and Printing (BEP) designs and manufactures currency. This book examines the status of BEP’s efforts to provide currency that is accessible for visually impaired persons and how BEP is considering costs as part of these efforts; and factors that may affect BEP’s efforts.

What’s Made In America? Industry Profiles
Elisa R. Hardy
In series: Economic Issues, Problems and Perspectives
2015. 81 pp.
Softcover: 978-1-63482-444-6. $62.00.
Accurately determining how much of our economy’s total production is American-made can be a daunting task. However, data from the
Educational offerings at secondary and postsecondary institutions. By postsecondary educational institutions or the dis... was no consensus on the content of the educational programs offered... body existed to set educational standards. In the late 19th century, there... Historically, accreditation in higher education developed as a part of... would occur, and what percentage of the dollar value of an industry’s output is considered domestic. Gross output, value added, domestically-sourced inputs, and domestic content are all... concepts that can be used to measure U.S. production and to estimate how much of that production is made in the United States. This book starts with the concept of gross output and then looks further, seeking to answer the question: “What is Made in America?”

Education

Niki Lambropoulos (London South Bank University, London, UK) and Margarida Romero (Université Laval, Québec, Canada)
In series: Education in a Competitive and Globalizing World
e-book: 978-1-63483-100-0. $110.00.

Information is now available almost instantaneously from multiple locations and diverse perspectives, through different tools and interoperable means, offering an online, online and mixed reality environment that facilitates learning more than ever before. Learning is a progression from knowledge acquisition, meaning and signification construction to transferable knowledge, signification, skills and competencies across fields and disciplines with local and global impact. The individual is free from space and time boundaries, flexible and interconnected and able to move without barriers within diverse teams and communities for personal or professional purposes. The 21st century Lifelong Learning program also involves the utilization of new methodologies as well as technologies to promote connectivity and intimacy; the environment needs to be useful and supportive for all.

This collective construction of new knowledge, skills and competencies on a global, collective intelligence network, enables creative behaviors which influence everyone in close virtual or physical proximity. This book introduces a matrix of methods, tools and techniques referring to individual, team and wider social skills supporting the realization of one’s dream. Individual, small team, social and community skills and actual competencies, aided by the present new and emerging technologies, enable and support every learner to expand and thrive on the Lifelong Learning life course.

Accreditation of Higher Education: Background, Issues and Considerations
Leah Martinez
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63482-867-3. $145.00.
e-book: 978-1-63482-868-0. $145.00.

Historically, accreditation in higher education developed as a part of the evolution of the American higher education system, at a time when it was becoming problematic that no single point of control or central body existed to set educational standards. In the late 19th century, there was no consensus on the content of the educational programs offered by postsecondary educational institutions or the distinctions between educational offerings at secondary and postsecondary institutions. Because the boundaries were unclear, the first voluntary association of postsecondary institutions was formed in 1895 to define the difference between high school and college and to develop some guidelines and procedures for peer review as a condition for membership. Over time, a number of regional associations formed whose membership was contingent on accreditation. The associations established separate accrediting bodies or commissions that were responsible for developing standards and passing on the institutional qualifications for membership. By the early 1970s, all but a small percentage of the degree-granting institutions of higher education were either accredited or applicants for accreditation. The United States does not have a centralized authority exercising singular national control over postsecondary educational institutions. The states assume varying degrees of control over education, but in general, institutions of higher education (IHEs) are permitted to operate with considerable independence and autonomy. Consequently, the character and quality of IHEs’ programs can vary widely. The role of accreditation in higher education, therefore, is to help ensure a level of acceptable quality across the wide array of programs and institutions in higher education. This book discusses the background, issues and considerations of accreditation of higher education.

Blended Learning: Student Perceptions, Emerging Practices and Effectiveness
Beverly R. Jones
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63482-083-7. $190.00.

The flexibility of the learning service provided by Internet based scenarios allows students to learn at their own time, place and pace, enhancing continuous communication and interaction between all participants in knowledge and community building. This book discusses student perceptions of blended learning as well as the emerging practices and the effectiveness of these teaching methods.

Bureau of Indian Education: Challenges, Reform Proposals, Funding and Expenditure Issues
Wilson Fisher
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63482-336-4. $120.00.
e-book: 978-1-63482-337-1. $120.00.

Unlike public schools, Bureau of Indian Education (BIE) schools receive almost all of their funding from federal sources. BIE directly operates about a third of its schools, and tribes operate two-thirds. BIE, within Interior’s office of Indian Affairs, oversees 185 schools, serving about 41,000 students on or near Indian reservations. BIE’s mission is to provide students with a quality education. However, BIE student performance has been consistently below that of public school students, including other Indian students. This book examines how funding sources and expenditures of BIE schools compare to those of public schools; the extent to which BIE has the staff and expertise needed to oversee school expenditures; and the extent to which BIE’s processes for oversight adequately ensure that school funds are spent appropriately.

Children and Young People in School and in Society
Anette Sandberg and Anders Garpein (Mälardalen University, Västerås, Sweden)
In series: Education in a Competitive and Globalizing World
Collaborative Learning: Developments in Research and Practice
Robyn M. Gillies, Ph.D. (Professor of Education, The University of Queensland, Brisbane, Australia)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63482-404-0. $270.00.
e-book: 978-1-63482-417-0. $270.00.
Collaborative learning is well recognised as a pedagogical practice that promotes socialisation and learning among students from kindergarten to the university level and beyond. Children, adolescents, and adults learn from each other in a vast array of formal and informal settings in schools and the wider community. This book brings together a diverse range of international scholars to profile new pedagogical developments in collaborative learning and to highlight how these practices have been implemented. The term collaborative learning is used very broadly in this volume and includes cooperative learning, peer learning, and peer collaboration. The proponents of these practices argue that by working together, students have many opportunities to learn and develop a greater understanding of others with diverse social, personal, and academic competencies. The emphasis in this volume is on chapters that have a strong evidence-base for the work that is presented. This includes chapters that present empirical studies, research reviews, case studies and theoretical reviews because there is much to be gained by sharing and learning about what happens and how different pedagogical practices have been implemented. These chapters include pedagogical practices in mathematics learning, classroom-based talk, literacy, learning processes, group work, pre-service teacher education, teacher professional development, web-based technologies, and affective education and development. This book will have appeal to pre-service and experienced teachers who are interested in how different collaborative pedagogies can be embedded in different curricula to promote student engagement with learning. It will also be valuable as a reference text in post-graduate courses that focus on research training in education.

Early Childhood Education: Teachers’ Perspectives, Effective Programs and Impacts on Cognitive Development
Kristina Vann
In series: Education in a Competitive and Globalizing World

Educational and Learning Games: New Research
Richard L. Lamb (Department of Teaching and Learning, College of Education, Pullman, WA, USA)
In series: Education in a Competitive and Globalizing World
2015. 221 pp.
Hardcover: 978-1-63483-421-6. $190.00.
How do we currently use educational technology? What are possible uses of educational technology and games in the future? The purpose of this book is to provide answers to these questions and raise questions about how educational technology and gaming will be used in the near and far future. During the early millennia, educational technology use exploded and coincided with the rise in console and personal computer video game play. Today computers and electronics such as cell phones and tablets are ubiquitous in today’s schools and learning environments all with easy access to games. With over 93% of people reporting making use of technology for learning in, education, business and many other fields researchers, educators and administrators struggle to integrate and make use of these powerful tools in education and training. In an increasingly technological society, the need for students, instructors, and administrators who understand the world of educational technology and all of its possibilities is of paramount importance. There is an increasing understanding and growing need to assimilate the growth and use of virtual environments, electronic games, and assistive technologies in such places as businesses, after school programs, museums, zoo, and other places. The review of the current trends in research, teaching, learning and assessments provides readers with an outline where educational technology is now and where it may go in the future. Build upon the prominent leaders in the educational technology field, this book adds the voices of up and coming leaders in educational technology Richard Lamb and Donald McMahon from Washington State University. This book targets researchers and practitioners working to develop and build educational technology to collect data, more effectively teach students, and seeking to shape the future of educational technology. The book covers a wide variety of topics to include augmented reality, virtual environments, and video games in education.

Enhancing K-12 Financial Education: A Resource Guide for Policymakers
Louis T. Richardson
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63483-139-0. $120.00.
e-book: 978-1-63483-140-6. $120.00.
The Consumer Financial Protection Bureau (CFPB) believes integrating financial education throughout the K-12 experience represents a promising opportunity to reach consumers at pivotal points in their development and financial lives. When we start early with age-appropriate and relevant financial education and consistently reinforce
those lessons throughout the K-12 years, we can give young people more chances to develop positive habits and behaviors. The CFPB developed a resource guide to help connect policymakers with tools, information, and insights to enhance K-12 financial education efforts. This book includes the guide, which will likely be most relevant to state policymakers who seek to advance the development and implementation of K-12 financial education. Furthermore, the CFPB is working toward an improved marketplace by providing effective rules, consistent oversight, and evenhanded enforcement. Moreover, the authors seek to ensure that product marketing and disclosures are transparent, so individuals may compare products and make informed decisions, and they briefly outline and discuss five essential strategies that they believe could positively transform the financial lives of a generation of young Americans.

**Fundamentals of Research Methodology: A Holistic Guide for Research Completion, Management, Validation and Ethics**

*Engwa Azeh Godwill (MSc in Biochemistry, Lecturer in Biochemistry, Department of Chemical Sciences, Godfrey Okoye University, P.M.B. 01014 Thinkers Corner, Enugu, Nigeria)*

In series: *Education in a Competitive and Globalizing World*


Fundamentals of Research Methodology: A Holistic Guide for Research Completion, Management, Validation and Ethics is a rich conceptual, comprehensive and practical text for researchers. A book for beginners and experts, it focuses on research across medical, social, natural and applied sciences. This text aims to fully expose research methodology from a broader prospective, to accompany its readers in research, management and continuity. This book consists of ideas, examples and summary questions as a guide in the following fields: • Background knowledge of research, the various types and its importance • Steps in empirical research and processes • Research designs and methods of data collection • A guide on data and statistical analysis • Research writing of proposals, thesis and reports • Research planning for beginners • Management of time, human and material resources in research • Sources of errors and validity in research • Ethical issues related to both human and animal research • Processes of grant application and research funding Written with simple vocabulary and language for day to day use, this book has useful pedagogic material for teaching, primarily at the tertiary level of education. This compilation also acts as a source document for research institutions and other related bodies involved in research. This makes it a forerunner in textbooks for research and academic societies alike.

**Goal Setting and Personal Development: Teachers’ Perspectives, Behavioral Strategies and Impact on Performance**

*Bernice Higgins*

In series: *Education in a Competitive and Globalizing World*

Hardcover: 978-1-63463-869-2. $190.00.
e-book: 978-1-63482-748-5. $190.00.

There are important links between teachers’ own experiences at work and their students’ outcomes. A crucial part of providing successful learning environments for students in K-12 classrooms is to have effective teachers. In this book, the authors lead a discussion on how attending to teachers’ experiences in the classroom is central for promoting effective teaching and learning. The authors examine the relationship of goal setting processes of teachers across different professional development (PD) experiences with teacher pedagogical learning. A matrix is also developed that can be used to help teachers integrate entrepreneurial mindset training throughout the curricula and the education system as a whole. The third chapter explores the links between instructional practices and interest and satisfaction of the teachers’ students. The fourth chapter focuses on the positive impact of effective functioning on achievement-related outcomes. The renowned researcher Joachim Broecher writes in his chapter about positive behavioral interventions and supports (PBIS) in German schools and argues that for teacher training designed to anchor PBIS in German schools to be successful, it must take into account the prevailing academic backgrounds and national characteristics that contribute to forming the professional identity of Germany’s teachers. Finally, curriculum reform is a way that the government tries to improve the achievement of pupils attending schools sponsored by the government. This book includes research on curriculum reform and related teachers’ performances. The last two chapters examine a method of getting positive behavioral change (via student goal setting using focal points), in the context of schools’ physical education programs.

**Head Start: Background, Funding, and the Role of School Readiness Goals**

*Martin H. Boyd*

In series: *Education in a Competitive and Globalizing World*


Head Start is a federal program that has provided comprehensive early childhood development services to low-income children since 1965. The program seeks to promote school readiness by enhancing the social and cognitive development of children through the provision of educational, health, nutritional, social, and other services. Head Start is administered by the U.S. Department of Health and Human Services (HHS). Federal Head Start funds are provided directly to local grantees rather than through states. Programs are locally designed and are administered by a network of roughly 1,600 public and private nonprofit and for-profit agencies. This book discusses the background and funding of the program, and examines the role it plays in school readiness goals.

**Higher Education of People of Color: Views on Effectiveness of Historically Black Colleges and Universities and Encouraging Pursuit of STEM Careers**

*Dana G. Perry*

In series: *Education in a Competitive and Globalizing World*

Hardcover: 978-1-63483-525-1. $185.00.

The Black College and University Act defined an historically black college and university (HBCU) as one that existed before 1964 with a historic and contemporary mission of educating blacks while being open to all. An HBCU must either have earned accreditation from a nationally recognized accrediting agency or association or be making reasonable progress toward accreditation. The U.S. Commission on Civil Rights conducted a briefing on May 5, 2006, to assess the educational effectiveness of HBCUs. This book discusses HBCUs and examines why minority college students who begin their college studies intending to major in science, technology, engineering or math (STEM) leave these disciplines in disproportionate numbers before graduation.
Improving the Financial Capability of Elementary School Students: A Research Study and Guidance
Lawrence Rodriguez
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63483-045-4. $120.00.
e-book: 978-1-63483-046-1. $120.00.
Programs and policies designed to promote higher levels of financial capability among youth have proliferated in recent years in the aftermath of the recent economic crisis. This trend is fueled by the growing recognition that more must be done to equip young people with the knowledge, skills and attitudes that will serve as the basis for a lifetime of sound financial decision-making. The recent Executive Order establishing the President’s Advisory Council on Financial Capability for Young Americans and the recent announcement of the Financial Literacy Education Commission’s (FLEC) new strategic focus on “Starting Early for Financial Success” are both significant markers of increased levels of commitment and dedication among national policy makers to this important issue. This book examines the findings from the Assessing Financial Capability Outcomes (AFCO) Youth Pilot, and provides options and ways to save and invest for students.

Increasing Student Achievement through Effective School Leadership: Practitioners’ Perspectives
Linda R. Vogel and Chris Jenkins (Educational Leadership & Policy Studies, University of Northern Colorado, CO, US)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63463-746-6. $125.00.
Best practices in addressing the learning needs of all students, particularly those identified as at-risk for failure, must be informed by theory, research, and experience. The practitioners in this book share their experiences in designing support systems for a variety of at-risk student groups including English language learners, immigrant, refugee, and low socio-economic students. Emphasizing the development of safe and supportive school cultures, the involvement of parents in student learning, and curriculum that addresses differentiated learning needs, this book provides practical ways that school leaders can advocate for and provide systemic supports for at-risk students. The effective use of technology to enrich student learning and promote engagement is also discussed, as well as the development of professional learning communities as a structure to promote on-going teacher growth in effective teaching practices. Although not typically considered as an at-risk population, meeting the needs of gifted and talented students who may not fully engage with school is also addressed. Finally, a stewardship model of leadership is explored, based on the actions of leaders in schools with high poverty and minority students that have consistently earned recognition as high performing. The ideas for engaging students, teachers, parents, and communities shared by practitioners in this book focus on effective means of collaboration, communication, relationship building, and strategic planning for at-risk student success and can be used by school leaders in every school to better serve all students.

Information Literacy: Educational Practices, Emerging Technologies and Student Learning Outcomes
Jessie Collier
In series: Education in a Competitive and Globalizing World
2015. 142 pp.
Hardcover: 978-1-63482-463-7. $110.00.
Assisting students in locating relevant information remains especially critical in the digital era. As Rempel and Cossarini (2013) remind us the “quantity of conveniently available information has made students less inclined to seek out” information in the library. Information literacy is necessary so that people can continue lifelong learning. It is recognized that basic library skills and IT (Information Technology) skills are the foundations of information literacy competences. Especially for children, who are novices in library use, it is essential to understand how to use the library and how to obtain sufficient knowledge through library materials and information resources on the Internet. Inquiry based learning takes into account the complexity of interrelated knowledge building and strives to provide opportunities for teachers and students for teamwork, building, testing, and reflection on their learning. This book discusses how emerging technologies influence information literacy, and it examines student learning outcomes and educational practices in school systems.

Investments in Early Childhood Development and Education: Economic Impact and Federal Assistance
Albert W. Massey
In series: Education in a Competitive and Globalizing World
2015. 147 pp.
Hardcover: 978-1-63482-520-7. $120.00.
e-book: 978-1-63482-521-4. $120.00.
Early childhood, beginning in infancy, is a period of profound advances in reasoning, language acquisition, and problem solving, and importantly, a child’s environment can dramatically influence the degree and pace of these advances. By supporting development when children are very young, early childhood development and education programs can complement parental investments and produce large benefits to children, parents, and society. Federal support for child care and education comes in many forms, ranging from grant programs to tax provisions. Some programs serve as specifically dedicated funding sources for child care services or education programs. For other programs, child care is just one of many purposes for which funds may be used. In many cases, federal programs target low-income families in need of child care, but in the case of certain tax provisions, the benefits reach middle- and upper-income families as well. This book provides a funding overview and brief background information on federal child care, early education, and related programs (and tax provisions).

Knowledge Engineering: Principles, Methods and Applications
Alfonso Perez Gama (IEEE Life Senior - Education Society Colombia Chapter Chair IASA, IAOE, IIIOA, NY Academy Sciences, INCOSE, ACIS, ACCIO)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63463-909-5. $190.00.
Knowledge processing requires the discipline of engineering knowledge in order to solve complex problems normally requiring a high level of expertise, currently used in management information
Mobile Learning (M-learning) Concepts, Characteristics, Methods, Components. Platforms and Frameworks

Mohamed Sarrab (Sultan Qaboos University, Oman)

In series: Education in a Competitive and Globalizing World
2015. 159 pp.
Hardcover: 978-1-63463-252-2. $125.00.
e-book: 978-1-63463-342-0. $125.00.

The widespread use of mobile technologies, both hardware and software, is quickly becoming a prerequisite to support development. This widespread use, combined with improvements in mobile connectivity, has led to increasing interest in the use of mobile devices as learning tools. Distance and electronic learning have proven to be potential approaches, insuring progress in education that reduces the limitations of traditional education systems. Mobile learning (M-learning) represents how best to address a number of traditional, distance, visual and electronic learning challenges, issues and limitations. The opportunity to use mobile devices, such as PDAs, tablets and smart phones, as learning tools, enables innovation and supports students, teachers and decision makers’ access to digital study materials and personalized assessment. Much of the work done on the subject of M-learning has taken the form of requirement analysis, design needs and issues and challenges affecting application development. In order to ascertain the current level of knowledge and state of research, this book pinpoints and harnesses the potential factors and gaps in M-learning development and adoption. This book presents different aspects related to M-learning to help readers understand and distinguish the primary characteristics and features of M-learning. The book begins with an introductory chapter that describes its scope. The second chapter describes the principles of learning and teaching. This is followed by six chapters which describe and discuss mobile computing, different definitions of M-learning and its theoretical background, different M-learning requirements, M-learning frameworks and number of M-learning applications in the field of education. The final chapter highlights M-learning issues and suggests a future direction for M-learning.

New Developments in Science Education Research

Nathan L. Yates

In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63463-914-9. $190.00.

This book presents leading research and new developments in science education. Topics include developing a research programme in science education for gifted learners; research and innovation on learning and about advertising in science education; collaborative curriculum development of a teaching and learning module on bionics based on innovative ICT technology; the role of student questioning in university science classes; scaffolding inquiry-based science and chemistry education in inclusive classrooms; Frederick Accum (1769-1838) and the application of chemistry to social problems; the exhibitions of the natural history paleontology area at the British natural history museum based on argumentation; dynamic visualizations in the classroom; and navigating the scientific landscape via a writing across the curriculum program.

Open Distance Learning (ODL) in South Africa

Mokeletsi Letseka (College of Education, University of South Africa (UNISA), Senior Lecturer/Deputy)

In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63463-890-6. $125.00.
e-book: 978-1-63463-892-0. $125.00.

Access to higher education and the prospect of obtaining a higher education qualification through full-time contact institutions seems a remote reality for the majority of black South Africans who were denied opportunities for higher education during apartheid. The majority of this group is either in full-time employment, part-time employment, temporary posts, unemployed and at most unemployable. This book opens up the debate on the open distance learning (ODL) mode of teaching and learning. The book is written in user-friendly English accessible to professionals in higher education and ODL as well as the non-professional layman. The book debates among others, the critical issues of access to higher education in South Africa. It offers ODL as a viable alternative to millions of South Africans who were denied opportunities to study in higher education by past policies of apartheid. The book puts across ODL as a viable mode of access to higher education qualifications that are accredited by South Africa’s Qualifications Authority (SAQA) and are recognized by the country’s labor market. The book tackles the sensitive but necessary issue of assessment in ODL. It discusses best practices in ODL and offers justifications for ODL practitioners to align their practice with internationally recognized benchmarks and examples of best practice. The book explores the sensitive issues of pass rates and throughput rates in ODL. Given their very nature as higher education institutions whose student clientele is mature working adults, ODL institutions’ qualifications completion targets tend to be more relaxed and extended than their full-time contact higher education institutions counterparts. Invariably throughput rates in ODL institutions are perceived to be very poor. The book opens up debates on the dynamics of ODL pass rates and throughput rates. It explores the notions of throughput rate and pass rate and interrogates the nuances of perceived ODL poor rates. A question the book seeks to address is whether ODL throughput rates and pass rates are indeed poor or seem poor relative to performances of full-time contact institutions?

Organizational Learning: Individual Differences, Technologies and Impact of Teaching

Harold Lewis

In series: Education in a Competitive and Globalizing World
2015. 84 pp.
Softcover: 978-1-63483-088-1. $82.00.
e-book: 978-1-63483-114-7. $82.00.

Organizational learning is the process of creating, retaining and transferring knowledge within an organization. This book aims to examine the relationship between five contextual factors and the occurrence frequency of learning organization (LO) problems in companies that are implementing LM (lean manufacturing). Other chapters present an overview about the new web technologies’ potential (such as blogs, wikis and social networks) in the learning process. The final chapter revisits Brooks’ Law, improving software productivity by managing complexity.
Pedagogical Science Through Place and Time
Thomas K. Babalis (Pedagogical Department of Primary Education, National and Kapodistrian University of Athens, Greece)
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63483-032-4. $160.00.
This book is an invitation to reflect on anything concerning culture, and especially its institutionalized form of education. It aims to share with readers any data shaped by place and time that concerns education. The content of this interesting and informative manuscript is an expansive overview of the evolution of education, starting from the ancient era all the way to the present. It includes the work of renowned theorists, researchers, and authors and highlights the epistemological orientations of pedagogy and pedagogical trends over time, demonstrating the breadth and depth of education that certainly cannot be a mere set of techniques. The approach of the terms “upbringing”, “education” and “pedagogy” is at the heart of this book’s guide for every spiritual man. The purpose of this work is the dissemination of pedagogical values and concerns that, as evidenced by the approach of great pedagogues, do not substantially differ from one country to another. This indeed is the hallmark of classic works, particularly works related to the humanitarian values. In difficult times, we must all turn to defend values — human values — which should permeate education. Modern society presents obvious signs of crisis in the global context, and this is why modern humanity has ceased to be a purpose. This work is faced with constant challenges in the education sector and raises the concern about the progress of education and its future. It is a necessity and a masterpiece that can be shared with various audiences, directly or indirectly related to the theory and practice of pedagogy. As aptly noted by Dostoevsky in his work “The Basement”, if man seeks to remain human and not a “piano key”, he must show consistency in human capacity. The culture and institutionalized forms, dissemination of pedagogical values are the one and only answer, the single orientation.

Private and Public Schools: International Perspectives, Management and Educational Efficiency
Gina Abbott
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63482-365-4. $190.00.
This book discusses international perspectives, management and the educational efficiency of both private and public schools. Some of the topics discussed include the differences in student achievement by grade span for students who are economically disadvantaged; status rivalry in public schools; oral health education; modeling language-based cognitive fitness implications for educating children; and leading and managing action research for school improvement.

Progress in Education. Volume 32
Roberta V. Nata
In series: Progress in Education
2015. 147 pp.
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. Many techniques, programs and methods are directly applicable across borders. Topics discussed herein include reading and math achievement differences as a function of early-exit and late-exit bilingual programs; school discipline and grade six Hispanic and white student academic performance; differences in first semester GPAs by ethnicity and gender within ethnicity as a function of dual credit enrollment; Texas charter middle schools; gender differences in taking advanced coursework in Texas; motivating Flemish senior teachers to work past the age of 60; international comparisons of student achievement; additive bilingualism of immigrant children.

Progress in Education. Volume 33
Roberta V. Nata
In series: Progress in Education
Hardcover: 978-1-63482-158-2. $160.00.
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. Many techniques, programs and methods are directly applicable across borders. Topics discussed herein include differences in academic achievement by ethnicity and gender as a function of in-school suspension; data warehousing for sustainability in higher education sector; differences in beginning teacher percentages by accountability rating and school level; a study of the arguments used by undergraduate and graduate students during disciplinary discussions in the classroom; cyborgs at the university; improving mental health through an online self-assessment and self-help utility in university students; virtual laboratories as hands-on settings in science education; designing an educational music software using a student-centred strategy; the impact of optimized functioning; a study of the “music, society, and culture” course for undergraduate students in Hong Kong; and teachers’ perception of teaching as a profession and their attitudes toward pedagogical changes.

Progress in Education. Volume 34
Roberta V. Nata
In series: Progress in Education
Hardcover: 978-1-63482-466-8. $190.00.
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. Many techniques, programs and methods are directly applicable across borders. Topics discussed herein include technological constructivism; heritage language development among 2nd generation Chinese immigrants in bay area; education in sustainability in home economics in Norway; impact evaluation at the convergence of evidence based policy and monitoring and evaluation; element interactivity in secondary school mathematics and science education; knowledge transfer in community-embedded learning; modeling of adaptive system for distance learning with an emphasis on student profile; the dimensions and behaviors existent in a reflective-group dialogue among students with intellectual disabilities; and self-efficacy as an accurate predictor of teaching skills.

Progress in Education. Volume 35
Roberta V. Nata
In series: Progress in Education
Hardcover: 978-1-63482-503-0. $190.00.
e-book: 978-1-63482-516-0. $190.00.
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. Many techniques, programs and methods are directly applicable across borders. Topics discussed herein include a roadmap for curriculum development, implementation, and evaluation; assessing the quality of research on youth mentoring; an update on response-to-intervention in preschools; types of parent involvement as predictors of the post-secondary educational plans and future educational aspirations of 7th and 9th grade students; underestimation bias in monitoring accuracy using the gamma coefficient; training future physicians in legislative advocacy; assessment of the teaching quality of teachers of primary and special education; orientating pedagogy towards hybrid learning spaces; learning, teaching and assessing in Portugal; and corpus informed foreign language vocabulary instruction.

Progress in Education. Volume 36
Roberta V. Nata
In series: Progress in Education
2015, 179 pp.
Hardcover: 978-1-63482-316-6, $210.00.
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. Many techniques, programs and methods are directly applicable across borders. Topics discussed herein include applying universal design to build support for college students with autism spectrum disorder; web-enhanced collaborative learning in undergraduate psychology courses; a literature review of the use of mental imagery in health professions education; scaffold learning, peer review and mind mapping; the work hours reform in US graduate medical education; the emergence from e-learning to m-learning: understanding and redefining multicultural education; a perspective to examine learning environments; and progress in international graduate students education.

Progress in Education. Volume 37
Roberta V. Nata
In series: Progress in Education
2015, 193 pp.
Hardcover: 978-1-63483-337-0, $160.00.
The ongoing Progress in Education series presents substantial results from around the globe in selected areas of educational research. Schools are institutions that sail in the tempest of educational issues, reforms, strategies, data and tools, as well as reflect changes in society. Embedded in all of these are technology, diversity, and innovation - their inevitability has been demonstrated in our schools and communities. The first chapter of this volume examines how technology and diversity leads to innovation. The following chapters discuss the integrity of peer coaching and self-regulated learning; errors and error-handling strategies; career and technical education in Texas schools; high school sizes and Hispanic student college readiness; pedagogical approaches to applying funds of knowledge theories to support minoritized students’ learning; electrical engineering education programs; and instructional expenditures and school district wealth.

Research on University Teaching and Faculty Development
Olga M. Alegre-de la Rosa and Luis M. Villar-Angulo
(University of La Laguna and University of Seville, Spain)
In series: Professions - Training, Education and Demographics
Hardcover: 978-1-63482-316-6, $210.00.
This book builds on the tradition of concern for university innovation that has characterized higher education throughout the world. It recognizes the university needs for continuous development of students and faculty. It involves research, teaching and learning, thus providing a bridge between research and practice. It helps readers meet some university challenges and build effective universities for present times. For all those reasons, we believe that this book is right. The need for renewed focus on innovation in higher education stems from several sources. First, some social and educational agencies are expressing dissatisfaction with the performance of the general higher education system. Although we do not agree with the criticism, many universities around the world assume their responsibility for launching research projects, and programs for promoting quality in teaching and learning within their faculty and community. Second, the world in which universities operate is changing noticeably. Colleges and universities are experiencing basic changes in student admission and placement. In the nearest future the student body will be over 25 years of age. Students will need methodologies to access learning materials and participate in online actions and communications over the Internet at their own convenience. The third reason for a special attention on university innovations comprises market competition in society. Students are annually evaluating the value of any university degree based upon their perceptions on quality in flexible teaching, resources and new educational technologies, campus and classroom learning environments, services and fees. Students are demanding more than a piece of paper as a premium placed on a college degree. They envisage universities must provide the major guide and best way for finding jobs and career progress. Fourth, colleges and universities are encouraging the development of long-distance education and massive open online courses. Government agencies foster competition among institutions, in order to provide powerful mental tools to help students to master tough subjects. Besides, private higher education institutions are emerging and competing for students with those of the public sector. Finally, some books outline improvement processes needed by faculty members to undertake curriculum and teaching innovations. However, very few claim to describe the teaching competencies needed by university faculty who work in higher education classroom settings. Furthermore, universities offering innovation programs and courses use those competencies to identify learning change and teacher and student progress toward curriculum development.

School Discipline: Views on Disparate Impacts for Children of Color (with accompanying CD-ROM)
Ralph Marshall
In series: Education in a Competitive and Globalizing World
2015, 159 pp.
Hardcover: 978-1-63483-528-2, $120.00.
The Commission held a briefing entitled, “School Discipline and Disparate Impact” on February 11, 2011 to examine the effect of the U.S. Department of Education’s disparate impact initiative announced in the fall of 2010 for schools and school districts across the country. The Commission asked teachers and administrators from racially diverse public school districts how they have responded to the new
initiative; specifically, whether their teachers and administrators have changed their policies and practices as a result, and what those changes were. The book discusses whether the districts kept statistics to track the effectiveness of policies; how they train their teachers in implementing discipline policies; and what other means the districts used to evaluate whether their policies worked.

Service-Oriented Architecture
S. Anandamurugan and T. Priyaa (Department of Information Technology, School of Communication and Computer Sciences, Kongu Engineering College, Perundurai, Tamilnadu, India)
In series: Computer Science, Technology and Applications
Hardcover: 978-1-63483-434-6. $190.00.

Service Oriented Architecture is a comprehensive textbook for teaching and learning SOA concepts. Assuming no prior knowledge of programming languages on the part of the reader, this book contains a rich collection of step-by-step procedures to help one master the services. Features: • Student friendly — written in a clear, concise and lucid manner. • A sincere attempt has been made to introduce the basic concepts of services. • Each chapter is organized into small sections that address key topics • Emphasis on in-depth coverage and good style in programming • Aims to motivate the unmotivated. • Abundance of programming examples with sample output. • Explains the philosophy behind the creation of the concepts and its various features. • Covers both elementary as well as advanced concepts. • Helps to understand concepts by providing diagrams and program listings wherever necessary. • Logical flow of concepts starting from preliminary topics to the advanced topics. • Programs for each concept to illustrate its significance and scope. • Complete explanation of each program with emphasis on the core segment.

Student Engagement: Leadership Practices, Perspectives and Impact of Technology
Jaime Hawkins
In series: Education in a Competitive and Globalizing World
Hardcover: 978-1-63482-371-5. $110.00.

The need to engage students is a common theme within higher education. However, the exact meaning of engagement is itself more nebulous. Engagement may be thought of as how much effort and active learning students make with their studies. There are some approaches to categorising and measuring engagement that can be helpful when planning teaching and learning and the supporting activities. The opportunity to monitor attendance, attempts at formative work and accessing course materials offered by computer based and supported learning environments provides new opportunities to measure engagement. This book discusses leadership practices, perspectives and the impact of technology on student engagement in schools.

Student, Environment, Task, and Technology Tools for the 21st Century Learner
Sarah McPherson and Elfreda V. Blue (Instructional Technology and Leadership, New York Institute of Technology, NY, USA, and Hofstra University, NY, USA)
In series: Instructional Technology and Teacher Education

Edited by: Satasha L. Green (New York Institute of Technology, NY, USA)
Hardcover: 978-1-63482-356-2. $190.00.

For the past two decades, Joy Zabala’s SETT framework has served Assistive Technology (AT) professionals as an effective tool in the collaborative decision-making process toward identifying effective technology resources for students with special needs. Attention to the student, the environment, learning tasks, and technology (SETT) has made the difference for students with disabilities to be able to participate effectively in the inclusive general education classroom.

Education policy has changed since then. Federal legislation (NCLB & IDEIA) enacted since 2000 drastically changed the way schools and practitioners address inclusive education, providing students with disabilities extensive access to their peers and the general education curriculum. Students with disabilities are often required to receive general education instruction from general educators in math, science, social studies, and English language arts as indicated by their individual education plan (IEP). In many instances, special education students are placed in collaborative teaching settings in which a special education and general education partner teach all the students in the class. This gives students with disabilities access to their general education peers, curriculum and teachers. However, this inclusive instruction setting presents these students with learning challenges. With such changes have come changes in instructional practice and decision-making. No longer can traditional approaches to curriculum instruction continue to meet the needs of all children. This textbook is designed to outline the multiple factors to be considered in order to effectively make essential decisions relative to the student, the environment, the task, and the technology that is being used. The goal of this book is to guide classroom teachers to re-examine instructional practices which limit access to students with disabilities and also provides access to useful and appropriate instruction technology.

The FP eLearning™ 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.
Softcover: 978-1-63482-979-3. $82.00.
e-book: 978-1-62808-837-3. $82.00.

Modern pedagogy has relegated educational technology to a position of supply and demand in that overhead projection of curriculum in classrooms or methods to link students with curriculum virtually is the mainstay to addressing federal mandates on using technology in conjunction with academic practices. Only levels one and two (Personal Technology and Organizational Technology) are common practice in education today. The missing component to educational technology’s value (Student-Based Creative Technology-Enhanced pedagogy) remains lacking to all but the most artistic educators. Using learning management systems (LMS), presenting visually appealing multimedia lessons, and tasking students with mundane access requirements to core curricular content via the Internet, is common practice. Educational technology continues to languish due to education’s inability to provide student-based strategies that encourage and nurture a technological component to align the creative nature of our students with educational technology practices. Level three creative technology, tasks students to adopt ethical research practices, develop viable papers on relevant topics for discussion, aids in designing presentations that include an audio component, and finalizes presentations with a web-accessible architecture considered to be click-
and play. 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.

The Job Corps Program: Financial and Management Issues

Clinton L. Zimmerman

In series: *Education in a Competitive and Globalizing World*

2015. 87 pp.

Softcover: 978-1-63482-781-2. $62.00.

The Job Corps program is a job training and academic program for youth ages 16 to 24 who are low-income and have a barrier to employment, such as having dropped out of high school. It is administered by the Employment and Training Administration’s (ETA’s) Office of Job Corps in the U.S. Department of Labor (DOL). Job Corps seeks to provide disadvantaged youth with the skills needed to obtain and hold jobs, enter the Armed Forces, or enroll in advanced training or higher education. Job Corps is the nation’s largest residential, educational, and career training program for economically disadvantaged youth. This book examines how ETA selected the measures it implemented to address Job Corps’ financial challenges; the timeliness and completeness of ETA’s communications to contractors, including center staff, and Congress; how spending cuts affected applicants and students; and steps ETA has taken since to improve Job Corps’ financial management.

Through the Eyes of a Learner: My Teacher’s Emotional Intelligence

Petro van der Merwe and Cecelia Jansen (Department of Psychology, and Department of Education, Leadership and Management, University of South Africa)

In series: *Education in a Competitive and Globalizing World*


Softcover: 978-1-63463-632-2. $62.00.

The idea that is developed in this book includes an investigation into teachers’ behaviour in the classroom, yielding a rich understanding of how teachers’ general demeanor influences learners’ motivation to perform. The characteristics of the “ideal” or emotionally intelligent teacher can be studied in the classroom setting where teachers and learners are emotionally engaged in forming their identities. Narrative research allows for the opportunity to explore learner’s views of their “ideal” teacher through the use of drawings and essays. The results of the narrative study indicate that the teachers’ socially responsible behaviour assisted in creating an emotionally warm classroom atmosphere in which the learners felt safe and secure. Socially responsible behaviour relates to the ability to do things with others, accept others, act in accordance with one’s conscience, and uphold social rules. Individuals who act in a socially responsible manner generally have a basic positive feeling towards their social group, possess interpersonal sensitivity, are able to accept others, and use their talents for the good of the collective, not just the self. Furthermore, the sense of belonging created by the general classroom climate appears to contribute to learners having a sense of purpose and wanting to perform at their best in a particular subject. In addition, the guidance and support provided by the “ideal” or emotionally intelligent teacher seem to build learners’ confidence and faith in their abilities and motivate them to perform at their best. This, in turn, helps to facilitate a sense of competence in learners. Educators can use this book as a valuable guide to understand learners’ subjective experiences of the emotional intelligent teacher and how these influence their learning and performance. The book is also offered as a celebration to all teachers whose dedication to our children is a true and often unacknowledged blessing that adds beauty to the gift of life!

Virtual Worlds for Online Learning: Cases and Applications

Sue Gregory (University of New England, Armidale, Australia), Mark J.W. Lee (Charles Sturt University, Wagga Wagga, Australia), Barney Dalgarno (Charles Sturt University, Wagga Wagga, Australia), and Belinda Tynan (The Open University, Milton Keynes, UK)

In series: *Education in a Competitive and Globalizing World*


Hardcover: 978-1-63482-149-0, $190.00.

This book showcases contemporary examples of three-dimensional virtual world use for Internet and web-mediated tertiary education from across the globe that cut across a range of disciplinary contexts and settings. By doing so, it seeks to promote scholarly dialogue as well as to assist the development and dissemination of good practice and best practices in the field. While there have been a number of other volumes published on virtual worlds and learning, many were written prior to the existence of mature applications and thus consist largely of early proof-of-concept reports; a number of practical or “how-to” guides for teachers considering using virtual worlds in their teaching have also been produced that have to do with either the technology or learning design. In general, much of what is available in the area is “show and tell” and does not engage deeply with theory or with key researchable questions and issues. This book is unique in the way it combines analysis and discussion of recent theoretical and empirical research with descriptive accounts and evaluations of exemplary and innovative discipline-based applications, all of which are focused on factors influencing the successful uptake and use of virtual worlds in online learning at universities and colleges. The book is a useful resource for educators with an interest in virtual worlds, irrespective of their level of experience and/or proficiency. The collection of exemplars presented will not only expose newcomers to the potential and possibilities of the technology but will also alert them to the problems and pitfalls of whose existence they need to be mindful of as they make their foray into the educational virtual worlds arena. Potential solutions and mitigating strategies for many of the common problems are suggested as well. For those who are more seasoned virtual world users, they will benefit from the evidence-based perspectives offered and from opportunities to situate their practice within the scholarly knowledge base, comparing their own experiences with those of others and learning from the stories, vignettes, insights, and reflections being shared. Novices and veterans alike will find the book valuable in helping them manufacture a sustainable business case to put forth to
their managers and in their quests to champion investment in virtual worlds at their institutions.

**ENERGY**

**Buildings, Resource Consumption and Occupant Submetering Behavior: Strategies for Change and the Role of Submetering**  
*Joanna Cruz*  
In series: *Energy Policies, Politics and Prices*  
2015. 149 pp.  
Hardcover: 978-1-63482-767-6. $120.00.  
e-book: 978-1-63482-770-6. $120.00.  

The people who use Federal buildings — Federal employees, operations and maintenance staff, and the general public — can significantly impact a building’s environmental performance and the consumption of energy, water, and materials. Many factors influence building occupants’ use of resources (use behaviors) including work process requirements, ability to fulfill agency missions, new and possibly unfamiliar high-efficiency/high-performance building technologies; a lack of understanding, education, and training; inaccessible information or ineffective feedback mechanisms; and cultural norms and institutional rules and requirements, among others. While many strategies have been used to introduce new occupant use behaviors that promote sustainability and reduced resource consumption, few have been verified in the scientific literature or have properly documented case study results. This book documents validated strategies that have been shown to encourage new use behaviors that can result in significant, persistent, and measurable reductions in resource consumption. This book also presents guidance and recommendations on the benefits and complexities in the use of submetering technologies for new and existing buildings.

**China’s Wind and Solar Industries: Issues, Trends, and Implications for the U.S**  
*Rita Schwartz*  
In series: *Energy Policies, Politics and Prices*  
Hardcover: 978-1-63483-166-6. $120.00.  
e-book: 978-1-63483-167-3. $120.00.  

Renewable energy is gaining currency around the globe, but China and the United States are central to its development. They are the world’s top-two countries in terms of energy consumption, net oil imports, and carbon emissions, as well as gross domestic product (GDP) and manufacturing. Their large territories harbor some of the best sites to generate renewable energy. If the United States and China cooperate— and compete—effectively, renewable energy can contribute to economic growth, energy security, and climate change mitigation. The past two years saw important developments, including a bilateral agreement to phase down hydrofluorocarbon emissions and a joint announcement to reduce greenhouse gas emissions. China is often touted for its rapid adoption of renewable energy technologies. Long-term industry plans and new legislation suggest Beijing will maintain this policy direction, in line with its overall expansion of energy production capacity. In the United States, by contrast, renewable energy is a divisive issue. There are disagreements about how, if at all, the government should support alternative energy sources when natural gas is abundant, emissions are declining, and energy demand is slowing. This book assesses recent developments in China’s wind and solar industries and the implications for the United States. It builds on the Commission’s past work on U.S.-China energy issues, including the April 2014 hearing on bilateral clean energy cooperation. The research also draws on Congressional testimonies, academic papers, industry and media reports, and statistical data. The report’s main themes and findings are outlined below.

**Crude Oil Properties and the Hazards of Transport:**  
*Background, Data and Literature Summary*  
*Dianne Gibbs*  
In series: *Energy Policies, Politics and Prices*  
Hardcover: 978-1-63483-070-6. $120.00.  
e-book: 978-1-63483-071-3. $120.00.  

Several fiery rail accidents in 2013–2015 in the U.S. and Canada carrying crude oil produced from the Bakken region of North Dakota have raised questions at many levels on the safety of transporting this, and other types of crude oil, by rail. Sandia National Laboratories was commissioned by the U.S. Department of Energy to investigate the material properties of crude oils, and in particular the so-called “tight oils” like Bakken that comprise the majority of crude oil rail shipments in the U.S. at the current time. The book provides a literature survey of public sources of information on crude oil properties that have some bearing on the likelihood or severity of combustion events that may occur around spills associated with rail transport. The book also contains background information including a review of the notional “tight oil” field operating environment, as well a basic description of crude oils and potential combustion events in rail transport.

**Energy Efficiency of Buildings in India and China:**  
*Analysis and Activities*  
*William Porter*  
In series: *Energy Science, Engineering and Technology*  
Hardcover: 978-1-63482-873-4. $120.00.  
e-book: 978-1-63482-874-1. $120.00.  

India is experiencing an unprecedented construction boom. The country doubled its floorspace between 2001 and 2005 and is expected to add 35 billion m2 of new buildings by 2050. Buildings account for 35% of total final energy consumption in India today, and building energy use is growing at 8% annually. China will account for about half of the new construction globally in the coming decade. Its floorspace doubled from 1996 to 2011, and Chinese rural buildings alone have as much floorspace as all of U.S. residential buildings. Building energy consumption has also grown, increasing by over 40% since 1990. This book discusses the compliance evaluation of energy conservation building code for building energy efficiency in India; and assesses the impact of China’s policies on building energy efficiency and on the market for energy efficiency in the future.

**Enhanced Oil Recovery:**  
*Methods, Economic Benefits and Impacts on the Environment*  
*Alícia Knight*  
In series: *Energy Policies, Politics and Prices*  
Hardcover: 978-1-63463-917-0. $160.00.  

Significant quantities of oil can be extracted using Enhanced Oil Recovery (EOR) methods. One of the main methods of this type is CO2-EOR, which also has a positive impact on the environment as it results in the practically permanent storage of CO2, the main greenhouse gas (GHG). When its use is economically viable, the technology for extracting oil using CO2 (CO2-EOR) enables significant quantities of oil to be obtained and at the same time, provides storage for large volumes of CO2. It thus brings in both financial profits and environmental benefits if the oil extracted is used instead of crude oil obtained by conventional methods and does not entail any increase in consumption. This book discusses the different methods of EOR, as well as all of the economic benefits and impacts it has on the environment.
compelling evidence that space-based solar power systems may be technically feasible, there is no compelling evidence that such systems will be economically or operationally competitive with terrestrial-power generation systems in use or in development. However, this book does find that there may be some utility in the limited application of space-based solar power to enable operations in remote and forward operating locations.

To Own or Lease Solar Installations: Considerations for Decision Makers
Jordom Gomez
In series: Energy Science, Engineering and Technology
Softcover: 978-1-63483-080-5. $62.00.
This book examines the tradeoffs among financing methods for businesses installing onsite photovoltaics (PV). The authors present case studies of PV financing strategies used by two large commercial retailers that have deployed substantial U.S. PV capacity: IKEA, which owns its PV, and Staples, which purchases power generated from onsite PV systems through power purchase agreements (PPAs). The book also analyzes the financial considerations that influence any company’s choice of PV financing strategy. The goal in this book is to clarify the financial and institutional costs and benefits of financing strategies and to inform other companies that are considering launching or expanding similar PV programs. Furthermore, this book provides a high-level overview of the developing U.S. solar loan product landscape, from both a market and economic perspective. It covers current and potential U.S. solar lending institutions; currently available loan products; loan program structures and post-loan origination options; risks and uncertainties of the solar asset class as it pertains to lenders; and an economic analysis comparing loan products to third-party-financed systems in California.

U.S. Energy Infrastructure: Climate Change Vulnerabilities and Adaptation Efforts
Joanne R. Ballard
In series: Energy Policies, Politics and Prices
Hardcover: 978-1-63482-286-2. $120.00.
e-book: 978-1-63482-287-9. $120.00.
According to the NRC and the USGCRP, changes in the earth’s climate—including higher temperatures, changes in precipitation, rising sea levels, and increases in the severity and frequency of severe weather events—are under way and expected to grow more severe over time. These impacts present significant risks to the nation’s energy infrastructure. This book examines what is known about potential impacts of climate change on U.S. energy infrastructure; measures that can reduce climate-related risks and adapt energy infrastructure to climate change; and the role of the federal government in adapting energy infrastructure and adaptation steps selected federal entities have taken.

U.S. Exports of Oil and Natural Gas: Analyses of Selected Issues
Frank G. Adams
In series: Energy Policies, Politics and Prices
Hardcover: 978-1-63463-904-0. $120.00.
e-book: 978-1-63463-930-9. $120.00.

Green Building and Phase Change Materials: Characteristics, Energy Implications and Environmental Impacts
Mildred Coleman-Sanders
In series: Energy Science, Engineering and Technology
Hardcover: 978-1-63482-702-7. $110.00.
Buildings are made completely of materials. Hence, in this book, the characteristics of materials used in green buildings is elaborated on, including for green roofs and green facades. For the purpose of energy structural reduction and saving, a strategy designed by the authors is explained as explained. As the last two chapters explore phase change energy materials and their related technologies. The chapters introduce newly developed experimental characterization technique and numerical simulation method for PCMs (phase change microcapsules), as well as microPCMs, which have drawn great interest due to their high heat capacity and easy manipulating and operating, and thus are potentially applicable in various industries.

Solid-State and Compact Fluorescent Lighting: Lessons Learned on the Way to Market
Joan L. Thompson
In series: Energy Policies, Politics and Prices
Hardcover: 978-1-63482-881-9. $120.00.
e-book: 978-1-63482-882-6. $120.00.
In recent years, solid-state lighting (SSL) has emerged as a promising new lighting technology that could fundamentally alter and improve lighting systems and significantly lower energy use and costs. However, SSL’s full performance and energy savings potential is far from realized or assured. The U.S. Department of Energy (DOE) has invested public funds in research and development to support advancements in the performance and energy efficiency of SSL technology, as well as a range of activities intended to increase the likelihood of rapid market uptake of new SSL products. The purpose of this book is to document early challenges and lessons learned in the SSL market development as part of the DOE’s SSL Program efforts to continually evaluate market progress in this area. This book summarizes early actions taken by DOE and others to avoid potential problems anticipated based on lessons learned from the market introduction of compact fluorescent lamps and identifies issues, challenges, and new lessons that have been learned in the early stages of the SSL market introduction. Furthermore, this book reviews efforts to increase market acceptance of compact fluorescent lamps (CFLs) and barriers to that acceptance.

Space-Based Solar Power: Feasible Idea or Folly?
Carl P. Thompson
In series: Energy Science, Engineering and Technology
Softcover: 978-1-63483-145-1. $62.00.
Space-based solar power (SBSP) is a concept for a revolutionary energy system. It involves placing into orbit stupendously large orbital power plants—kilometers across—which collect the sun’s raw energy and beam it down to where it is needed on the earth. In theory, SBSP could scale to meet all of humanity’s energy needs, providing virtually unlimited green, renewable power to an energy-hungry world. With growing international awareness of energy security challenges, the promise of space-based solar power for clean and unlimited energy for all humankind is certainly appealing. While significant progress continues in the enabling technologies of such systems, is there compelling evidence that space-based solar power systems will provide the best energy solution? How does the Army’s current approach to incorporating a diverse portfolio of renewable energy sources in distributed locations compare with the potential of enterprise ventures that beam energy from solar collectors in space? For more than 4 decades, many credible organizations in government and industry have explored the concept of space-based solar power. But their serious studies often conclude that such systems remain on the future horizon, usually at least 10 years away from practical application. This book posits that, while space-based solar power systems may be technically feasible, there is no compelling evidence that such systems will be economically or operationally competitive with terrestrial-power generation systems in use or in development.
Almost four decades ago, in response to the Arab oil embargo and recession it triggered, Congress passed legislation restricting crude oil exports and establishing the SPR to release oil to the market during supply disruptions and protect the U.S. economy from damage. After decades of generally falling U.S. crude oil production, technological advances have contributed to increasing U.S. production. This book examines what is known about price implications of removing crude oil export restrictions; other key potential implications; and implications of recent changes in market conditions on the SPR. This book also discusses and describes the status of applications to export liquefied natural gas–natural gas cooled to a liquid state for transport—and the Department of Energy’s process to review them; and the status of applications to build LNG export facilities and FERC’s process to review them.

Waste Management and Clean Energy Production from Municipal Solid Waste

Maria Laura Mastellone, Ph.D. (Department of Environmental, Biological, Pharmaceutical Science and Technology, Second University of Naples Viva Vivaldi, Caserta, Italy)

In series: Waste and Waste Management
Hardcover: 978-1-63463-827-2. $190.00.

Waste-to-Energy is one of the key technologies for sustainable waste management. The book by Laura Mastellone offers a comprehensive overview of the various processes for thermal waste treatment such as incineration, pyrolysis, and gasification. It is instrumental for understanding objectives, functioning, residues, and environmental impacts of thermal processes. “Waste Management and Clean Energy Production from Municipal Solid Waste” is worthwhile reading for any expert in the field of resources and waste management.

Advances in Environmental Research. Volume 37
Justin A. Daniels
In series: Advances in Environmental Research
2015. 201 pp.
Hardcover: 978-1-63463-602-5. $190.00.

This series covers leading-edge research focusing on the environment, including current research data on water and nutrient use efficiency and root distribution of selected horticultural crops; development of green energy-saving mechanisms; sustainable research and technological development on bio-energy; lentic habitats as study models for assessing aquatic contamination; significant change-points of subperiod levels in tree-ring chronologies as indications of climate change; differences in bryophyte diversity between subalpine abies forests and larch plantations; and mosses as biomonitors of atmospheric pollution.

Advances in Environmental Research. Volume 38
Justin A. Daniels
In series: Advances in Environmental Research

This series covers leading-edge research focusing on the environment, including current research data on the hidden risks and unfulfilled expectations of biochar; clean and green energy development and sustainable development; catchment properties as useful proxies for freshwater biodiversity; resource conservation and environment management; an overview on the development of integrated bioenergy devices for improvement of quality of life of poor people; climatic factors before and after cotton anthesis and its statistical relations nature with cotton production; application, toxicology and environmental effects of nitrobenzene; prediction of California bearing ratio (CBR) for pavement subgrade soils in saturated and unsaturated conditions; and innovative approach of the regional food retail trade.

Advances in Environmental Research. Volume 39
Justin A. Daniels
In series: Advances in Environmental Research
Hardcover: 978-1-63482-366-1. $190.00.

This series covers leading-edge research focusing on the environment, including current research data on UHI’s impacts on aquatic environments; the use of the lichen genus rhizocarpon in lichenometric dating with special reference to holocene glacial events; environmental problems, place elites and counter elites in depopulated rural areas; fumonisin in Zambia and neighboring countries in a changing climate; major features on brazil’s legislative policy in uramium production and related environmental aspects; dissolved 222n and 226ra in groundwaters of guarani aquifer system and serra geral aquifer at Ribeiro Preto City, Sao Paulo state, Brazil; ambient air conditions and emergency department visits in Vancouver; evaluation of urban heat island effect using modis remote sensing data of Guangzhou, China; changes in 2-de protein profile of white and red clover leaves in response to waterlogging stress and recovery; and spatial decision support systems integrating ecohydrology in limited water resources regions.

Advances in Environmental Research. Volume 40
Justin A. Daniels
In series: Advances in Environmental Research
2015. 228 pp.
Hardcover: 978-1-63482-785-0. $160.00.
This series covers leading-edge research focusing on the environment, including current research data on sustainable agricultural development and the environment: new perspectives and policy proposals; impacts of these changes on success stories in natural resources management in Togo; cultural predictors of perceived environmental responsibility and sustainable behavior; degraded karst relief; erosion dynamics in lateritic santhiniketan badland, west Bengal, India; study of oil recovery in naturally fractured reservoirs considering impact of parameters included in performance of spontaneous inhibition mechanism; prevalence of vibrio parahaemolyticus in Chile and potential use of antagonistic bacterial strains for its control in aquaculture; the environmental perception amongst the inhabitants of Taperó, an urban area in the state of Paraíba; ecosystem’s role in empowering communities to face global environmental change: community-based ecological mangrove restoration in Thailand; biowallization; and evaluation of comfort in indoor spaces.

**Advances in Environmental Research. Volume 41**

*Justin A. Daniels*

In series: *Advances in Environmental Research*


Hardcover: 978-1-63482-885-7; $160.00.
e-book: 978-1-63482-911-3; $160.00.

This series covers leading-edge research focusing on the environment, including current research data on the impact of forest canopy structure on simulations of atmosphere-biosphere NOX exchange; numerical simulation of CO2 sequestration in saline aquifer influenced by heterogeneous capillary pressure and wettability; the estimation of riverine nutrient fluxes from an urban watershed in New Jersey; a field survey on the Iberian Peninsula; pollution characteristics and potential ecological risk assessment of heavy metals in river sediments based on calculation of pollution indices; rainfall patterns and the relation to atmospheric circulation in Northern Patagonia; a case study of a dry deciduous forest in Kratie, Cambodia; a case study on wastewater management in Nepal; methane interactions with an atmospheric moisture; anthanides and actinides in soils of Khimbay-Lovozero Province; safer irrigation technology adoption under uncertainty perception in Ghana; and nano biomaterial for decontamination of carcinogenic metal from waste water.

**Advances in Environmental Research. Volume 42**

*Justin A. Daniels*

In series: *Advances in Environmental Research*


Hardcover: 978-1-63482-886-4; $190.00.
e-book: 978-1-63482-912-0; $190.00.

This series covers leading-edge research focusing on the environment, including current research data on coastal wetlands and their role in human health; electro-kinetic enhanced phytoremediation for the restoration of multi-metal(loid) contaminated soils; French neotropical solanum genus; advances in production of value-added products from sugarcane straw ash; influence of organic load, fill time and cycle length on biohydrogen production in an AnSBBR treating glucose-based wastewater; AnSBBR operated in batch and fed-batch modes applied to biohydrogen production treating lactose-based wastewater; and impact assessment of mining and metallurgical activities on the distribution of trace elements in the Stavnja Valley, Bosnia and Herzegovina.

**Advances in Environmental Research. Volume 43**

*Justin A. Daniels*

In series: *Advances in Environmental Research*


Hardcover: 978-1-63482-969-4; $190.00.

The authors of this book examine the latest developments in environmental research. Chapters include community and societal perspectives and strategies on learning to co-exist with environmental hazards; an overview of the current knowledge of biomonitoring of environmental heavy metals pollution; important insights on climate variables in water demand modelling which can be useful in conducting a more rigorous climate change impact analysis on urban water demand in other cities and regions; the applications of renewable energy in buildings and other various environments; an evaluation of SRCs as a potential carbon neutral source of biomass for energy and chemicals; a discussion on the distribution of certain chemical elements which in higher contents represent hazards to the environment and cause certain unwanted consequences on human health; and an analysis of dynamic linear modeling of homogenized monthly temperatures which demonstrated a rise in monthly temperature records with a seasonal pattern.

**Advances in Environmental Research. Volume 44**

*Justin A. Daniels*

In series: *Advances in Environmental Research*


Hardcover: 978-1-63483-094-2; $190.00.

The authors of this book examine the latest developments in environmental research. Chapters include numerical simulation of chemical spills and assessment of environmental impacts; some ontological reflections on current environmental justice Research; nudges as an alternative to economic market-based instruments in environmental regulation policies; potentialities of biochars from different biomasses for climate change abatement by carbon capture and soil amelioration; electrospray nanofibers affinity membranes for water hazards remediation; hydrogeochemical and stable isotope monitoring and numerical modelling of groundwater resource in Eastern Georgia to secure stability and quality of water supply; risks and hazards of gully erosion in a cold environment; and wheat rusts in Azerbaijan.

**Advances in Environmental Research. Volume 45**

*Justin A. Daniels*

In series: *Advances in Environmental Research*


Hardcover: 978-1-63483-278-6; $190.00.
e-book: 978-1-63483-299-1; $190.00.

The authors of this book examine the latest developments in environmental research. Chapters include nanostructured porous semiconductors as emerging materials in environmental technology; contrasting fish assemblages in free-flowing and impounded tributaries to the upper Delaware River; effects of the absence of adequate regulatory structure on the conservation of peyote; iridium as the new polluting metal linked to vehicular traffic; application of biogas for sustainable energy development from agricultural residues; combustion of oil layer on the surface of water; weathering effects on the structure and thermal behavior of bituminous coal; the use of lignite for the thermal treatment of waste-tyre on a commercial scale; cadmium uptake and distribution in tissues of sea bream with different cadmium exposure histories; mine closure aspects of balanda opencast mine of Jagannath area, Mahanadi coal field; and Bogota’s urban wetlands.

**Advances in Environmental Research. Volume 46**

*Justin A. Daniels*

In series: *Advances in Environmental Research*

2015.

Hardcover: 978-1-63483-545-9; $190.00.
e-book: 978-1-63483-583-1; $190.00.

This book presents a comprehensive review of recent advances in environmental research. Chapters included in this volume include sustainable development and environmentally friendly energy systems; the application of bioenergy for energy or materials; refrigeration and air conditioning impact on pollution and the environment; weighted
vector method for real-time indoor obstacle avoidance in fire environments; challenges and perspectives of climate change legal instrument; cellular level defense mechanisms in plant against toxic metals; and sustainable development framework for mining industry in India.

Agro-based Ecotoxicological Preview on Anthropogenic Activities on Ecosystems

Mwinyikione Mwinyihija (COMESA- Leather and Leather Products Institute, Addis Ababa, Ethiopia)

In series: Environmental Science, Engineering and Technology


This book provides selected authored on anthropogenic impacts caused by arsenic, lead, chromium and other pollutants and contaminants emanating from identified activities (e.g. tanning industry, effect of irrigation water and exposure to living tissue). The basis of the study is to improve on the knowledge and spread awareness to the general public. This book, identified impacts and their associated with arsenic, chromium, lead, salinity induced processes, effluents and selected synthetic tannins provide a preview of how identified anthropogenic activities can degrade and affect terrestrial, aquatic and human health. In light of this, the individual chapters pursue (to some extent) an experimental and descriptive approach in explaining these aspects. All the contributors of these chapters are specialists in their areas of specialization with very strong research backgrounds. Thus, the book has a formidable basis of communicating the science that is relevant for agronomical activities when evaluating the effluent generation from anthropogenic view, its disposal, potential impacts towards irrigation related to specific geographical areas and the human occupational risks involved overall. It is, therefore, apparent that identifying the denudating aspects of the ecosystems is a paramount step towards building appropriate diagnostic, preventive and curative capabilities in managing the environmental sustainably.

Airborne Algae: Their Significance

Naveen Kumar Sharma (Department of Botany, Indira Gandhi National Tribal University, Amarkantak, India)

In series: Air, Water and Soil Pollution Science and Technology

2015. 103 pp.

This book is a compilation of information on airborne microalgae and cyanobacteria. This includes a survey of the literature, biology and ecology of airborne algae, mechanisms involved in their aerosolization, the role of environmental factors in shaping the structure and composition of aero-algal communities, and information on methodological approaches used to study airborne algae. It also discusses the importance of airborne algae, including their ecological significance, as well as the role they could play in estimating the diversity and biogeography of different microalgal groups. Studies have shown that airborne algae may act as allergens. Since many reported airborne algae are known to produce toxins, they could also therefore be responsible for certain toxicoses. The book is intended to rejuvenate the academia’s interest in the above aspects of this fascinating group of microbes.

Amazonian Resources: Microbiota, Fauna and Flora

Bruno Sampaio Sant’Anna, Renata Takeara and Maxwel Adriano Abegg (Universidade Federal do Amazonas, Instituto de Ciencias Exatas e Tecnologia, Tiradentes, Municipio: Itacoatiara Amazonas, Brazil)

In series: Environmental Research Advances


This book is intended to present information about applications related to mycorrhizal fungi and endophytic microorganisms.
changes can pose significant challenges to the EPA’s ability to fulfill its mission. The EPA must adapt to climate change if it is to continue fulfilling its statutory, regulatory and programmatic requirements. The Agency is therefore anticipating and planning for future changes in climate to ensure it continues to fulfill its mission of protecting human health and the environment as well as the climate changes. This book discusses the EPA’s climate change adaptation plan, and discusses the impacts of climate change on the United States.

Climate Change and the USDA: Agency Efforts, Challenges, and Plans

Edward Hogarth
In series: Climate Change and its Causes, Effects and Prediction
2015. 120 pp.
Hardcover: 978-1-63482-053-0, $120.00.
e-book: 978-1-63482-054-7, $120.00.
The U.S. Department of Agriculture’s (USDA) climate change priorities for agriculture include, among other things, providing better information to farmers on future climate conditions. These priorities generally align with national priorities set by the Administration, which include promoting actions that reduce greenhouse gas emissions, advancing climate science, developing tools for decision makers, and developing better projections of future climate conditions. In 2012, the United States produced about $395 billion in agricultural commodities, with about half of this revenue from crop sales and half from livestock. This book examines USDA’s climate change priorities and how these align with national priorities; the status of USDA’s climate change efforts, and; the challenges USDA faces in implementing its climate efforts and the steps it has taken to overcome these challenges. This book also discusses the The U.S. Department of Agriculture Climate Change Adaptation Plan’s strategies and actions to address the effects of climate change on key mission areas including agricultural production, food security, rural development, and forestry and natural resources conservation.

Climate Change Effects on Soils: Aspects and Considerations

Claudia Holmes
In series: Climate Change and its Causes, Effects and Prediction
Softcover: 978-1-63482-773-7, $62.00.
Climate change has and will significantly affect soil properties. Biotic processes that consume atmospheric CO2 and create organic carbon (C) that is either reprocessed to CO2 or stored in soils, are the subject of active current investigations with great concern over the influence of climate change. In addition, abiotic C cycling and its influence on the inorganic C pool in soils is a fundamental global process in which acidic atmospheric CO2 participates in the weathering of carbonate and silicate minerals, ultimately delivering bicarbonate and Ca2+ or other cations that precipitate in the form of carbonates in soils or are transported to the rivers, lakes, and oceans. Soil responses to climate change will be complex, and there are many uncertainties and unresolved issues. The objective of this book is to initiate and further stimulate a discussion about some important and challenging aspects of climate-change effects on soils, such as accelerated weathering of soil minerals and resulting C and elemental fluxes in and out of soils, soil/geo-engineering methods used to increase C sequestration in soils, soil organic matter (SOM) protection, transformation and mineralization, and SOM temperature sensitivity. This book reports recent discoveries and identifies key research needs required to understand the effects of climate change on soils.
Climate Change’s Effect on Insurers: Exposures, Risks and Preparations
Noah Lynch
In series: Climate Change and its Causes, Effects and Prediction
Hardcover: 978-1-63482-518-4. $120.00.
e-book: 978-1-63482-519-1. $120.00.
The May 2014 National Climate Assessment indicates that the frequency and/or severity of many weather and climate extremes may increase with climate change. Public and private property insurers can bear a large portion of the financial impact of such weather-related losses. In the public sector, federal insurance includes NFIP, managed by FEMA, and the federal crop insurance program, managed by RMA. This book examines how federal and private exposure to losses has changed since GAO’s 2007 report on the subject, and what is known about how climate change may affect insured and uninsured losses; how public insurers are preparing for climate change, and any challenges they face; and how private insurers are preparing for climate change and any challenges they face.

Drip Irrigation: Technology, Management and Efficiency
Alfred H. Steele
In series: Environmental Remediation Technologies, Regulations and Safety
Hardcover: 978-1-63463-737-4. $160.00.
Although over two thirds of the Earth's surface is covered by water, more than 97% is ocean water which is too salty for human use or even for irrigation. Consequently, the freshwater is only 3% and almost 1% of the available freshwater is liquid surface water that can be used directly by humans. The rest is groundwater and iced water. Yet still, freshwater is considered to be one of the most abundant resources on earth. In the agriculture sector only, more than two thirds of the available freshwater is used for irrigation. This book focuses on the technology, management and efficiency of drip irrigation.

Environmental Litigation and the EPA: Trends, Costs, Issues
Martin F. Oliver
In series: Environmental Research Advances
Hardcover: 978-1-63482-720-1. $120.00.
e-book: 978-1-63482-721-8. $120.00.
In 2007, the Supreme Court handed down Massachusetts v. EPA, its first pronouncement on climate change and arguably the most important environmental law decision of the past decade. This book reviews that decision, but leaves coverage of the many EPA actions based on the decision to other CRS reports. This book also examines the trends in and factors affecting environmental litigation for fiscal years 1995 through 2010; and the Department of Justice’s recent costs and recent plaintiff payments from the Judgment Fund and EPA.

Environmental Quality and Human Health
Harriet Mills
In series: Environmental Research Advances
Softcover: 978-1-63483-551-0. $82.00.
e-book: 978-1-63483-585-5. $82.00.
This book focuses on environmental quality and human health. The first chapter included therein is an assessment of indoor environment quality and its impact on schoolwork performance. The importance of thermal comfort in the indoor environment cannot be underestimated, especially in educational buildings. In the second chapter, the mobility, safety, health and protection of the environment with regards to automobile pollution is reviewed. Next, research on industrial wastewater, subject to strict environmental regulations which makes its adequate management a key issue, is expanded upon by the authors. Finally, a review on the actual state of the art of the treatment and disposal of the olive mill effluents (OME) from both the two-phase and three-phase systems by membranes is addressed.

Carla H. Jackson
In series: Environmental Remediation Technologies, Regulations and Safety
Hardcover: 978-1-63463-792-3. $190.00.
e-book: 978-1-63463-824-1. $190.00.
Landfills have been targeted by geophysical methods in order to investigate their environmental impacts. In fact, landfills have been the classic way to deposit domestic and industrial waste and have generated a large range of negative environmental impacts in groundwater and soils. These problems often persist even after the effective use of the landfills and subsequent recovery processes. Owing to their characteristics, landfills are difficult to access and because of the general lack of accurate information regarding the shape, nature of the refuse, history and development of the landfill, non-invasive, non-destructive methods and sometimes autonomous data acquisition devices must be used to monitor impacts and to investigate and prevent groundwater and soil contamination. This book discusses processing systems, environmental impacts and adverse health effects of landfills and other recycling centers.

Methane: Emission Sources and Reduction Strategies
Andrea Malone
In series: Environmental Remediation Technologies, Regulations and Safety
Hardcover: 978-1-63482-526-9. $120.00.
e-book: 978-1-63482-527-6. $120.00.
On June 25, 2013, President Obama announced a national “Climate Action Plan” (CAP) to reduce emissions of carbon dioxide and other greenhouse gases, as well as to encourage adaptation to expected climate change. One of the more significant initiatives within the CAP focused on the control of methane emissions, a potent short-lived climate pollutant. It called for the U.S. Environmental Protection Agency (EPA) and the Departments of Agriculture, Energy, Interior, Labor, and Transportation to develop a comprehensive interagency “Strategy to Reduce Methane Emissions” (Strategy). The Strategy commits to new steps to cut emissions through both voluntary actions and proposed rulemaking, and outlines the Administration’s efforts to improve the measurement and assessment of these emissions. This book's objective is to discuss emission sources of methane, and to examine strategies of reducing greenhouse gases.

Microbes in Soil and Their Agricultural Prospects
Kaushal Kishore Choudhary, Ph.D., (Dr Jagannath Mishra College, Affiliated to Babasaheb Bhimrao Ambedkar Bihar University, Muzafarpur, Bihar, India) and Dolly Wattal Dhar, Ph.D. (Centre for Conservation and Utilisation of Blue Green Algae,
**Division of Microbiology, Indian Agricultural Research Institute, New Delhi, India**

In series: *Air, Water and Soil Pollution Science and Technology*


Hardcover: 978-1-63482-824-6, $270.00.

The book *Microbes in Soil and Their Agricultural Prospects* is a collection of advantageous, informative, simulative and holistic viewpoints presenting basic and applied aspects of microbial functioning in soil. This book covers physiological, biochemical and molecular mechanisms of microorganisms pertaining to the production of available nitrogen (nitrogen fixation), phosphorus (P mobilization) and plant-growth promoting hormones for adaptation in agricultural soil. Responses between microbiomes and plants (known as plant-microbe interaction) corresponding to signal molecules and plant reactions to bacterial quorum sensing have been intricately presented as well. This book covers most of the agriculturally important microbes (Bacteria, Frankia, Burkholderia, Cyanobacteria, Arbuscular Mycorrhizal (AM) fungi, Bacteriophages, Trichoderma). It addresses various issues in agricultural practices to make it more understandable for various levels of academia. Analysis of microbial diversity and advances in development of microbial fertilizers have also been incorporated to introduce young researchers with biofertilizer. This expert-complied data analyzes most of the microorganisms supporting soil fertility and crop productivity that is of significant value for sustainable agronomic practices. It is invaluable not only for experienced scientists, research leaders, and agriculturalists, but also undergraduate, postgraduate and postdoctoral researchers beginning their careers. Each chapter in this book has been a contribution from a qualified teachers or researchers of multiple expertise. The chapters are concentrated on microbial metabolism and its agricultural prospects. Concerted efforts have been made to make a quality compilation and presentation of microorganisms in soil. A lot of common queries and practices have been addressed to make it more interesting as well. Microbes in Soil and Their Agricultural Prospects will certainly serve as an invaluable, suitable and sustainable resource for students, teachers, and various scientists interested in sustainable agricultural practices for production of healthy foods.

**Old-Growth Forests and Coniferous Forests: Ecology, Habitat and Conservation**

*Ronald P. Weber*

In series: *Environmental Research Advances*

2015. 142 pp.

Hardcover: 978-1-63482-369-2, $110.00.

Forest ecosystems cover around 31% of the total land area of the Earth. They represent important biodiversity and genetic resources; provide material goods, including fuelwood, commercial timber, soils, medicinal plants and others; as well as environmental services, such as cleaning air and water, sequestering carbon and maintaining biodiversity. Old-growth forests are those developed during long periods without relevant human impact and with distinctive features in terms of forest continuity, structural heterogeneity, large volumes of standing and fallen deadwood, decaying ancient and veteran trees, and large diameter live trees. These characteristics ensure the growth and dispersal of forest-dwelling species, playing thus a vital role in the conservation of biodiversity. This book discusses the ecology, habitat and conservation of old-growth forests, as well as coniferous forests.

**Potentially Contaminated Sites Managed by USDA and Department of the Interior: Identification, Funding and Liability Issues**

*Roger L. Brooks*

In series: *Waste and Waste Management*


Hardcover: 978-1-63483-076-8, $120.00.

USDA and Interior manage over 600 million acres of land, including sites contaminated from prior uses or events, such as mining or toxic spills. These lands are managed by five Interior agencies, including BLM and the National Park Service, and five USDA agencies, including the U.S. Forest Service. These agencies must identify and report to EPA certain facilities that may threaten human health or the environment and, under some circumstances, clean them up. They must also report cost estimates for addressing contamination at certain sites, called environmental liabilities. This book examines USDA’s and Interior’s efforts to identify these sites, funding to address the sites, reported environmental liabilities, and EPA’s role in addressing the sites. Furthermore, this book provides a summary of the Superfund Amendments and Reauthorization Act and related provisions of the Act.

**Rangeland Ecology, Management and Conservation Benefits**

*Victor R. Squires (Gansu Agricultural University, Lanzhou, China)*

In series: *Environmental Research Advances*


Hardcover: 978-1-63482-504-7, $190.00.
e-book: 978-1-63482-584-9, $190.00.

Rangelands are a type of land that include vast grasslands, shrublands, woodland, wetlands and deserts, grazed by domestic livestock or wild animals. They comprise almost one-half of all the lands in the world. This book analyzes the sustainability of beef cattle systems of the Spanish Rangelands known as “Dehesas.” These systems are considered as outstanding High Nature Value (HNV) farming systems and the most agroforestry systems in Europe. Additionally, on a global scale, China has around one-eighth of the rangelands (the second largest area of land in any country other than Australia). These rangelands are mostly inhabited by peoples of various ethnic minorities. This book provides an overview of the environment and current development trends in the pastoral regions including a glimpse of the people affected most by any conservation or development effort and provide a framework for future integrated conservation and development work in the pastoral regions of north and north-west China. Furthermore, land degradation and biodiversity loss are the most critical issues of ecological environment in the West of China and they are the main causes for poverty and constraints for economic development. This book examines rangeland degradation in China as well as rangeland management and livestock production in an effort to arrest and reverse rangeland degradation. In other chapters, changes in vegetation related with grazing are reviewed, the benefits of reintegrating burrowing bettongs as a part of rangeland restoration programs, and integrating national feral camel management plans that are being implemented across the camel range in Australia, aiming to control the damage caused by camels (there are around 750,000 feral camels in arid and semi-arid rangelands in Australia).

**Soil Management: Technological Systems, Practices and Ecological Implications**

*Manuel Esteban Lucas Borja (Universidad de Castilla La Mancha, Escuela Técnica Superior de Ingenieros Agrónomos y de Montes, Departamento de Ciencia y Tecnología Agroforestal y Genética Campus Universitario, Albacete, Spain)*

In series: *Air, Water and Soil Pollution Science and Technology*

2015. 188 pp.

Hardcover: 978-1-63483-274-8, $160.00.
Natural ecosystems provide the basic conditions without which humanity could not survive. Goods and services provided by ecosystems include, for example, provisions of food, fibre and fuel, purification of water and air, cultural and aesthetic benefits, stabilization and moderation of the Earth’s climate, generation and renewal of soil fertility, including nutrient cycling or maintenance of genetic resources as key inputs to crop varieties and livestock breeds, medicines, and other products. However, the ability of natural ecosystems to continue performing these services is seriously threatened since the diversity of plant species and soil are being seriously deteriorated and, in some cases, destroyed. Various studies worldwide have shown that soils do not support intensive annual plant cultivation without fertilizer applications, and even these may not maintain sustainability. Inappropriate silvicultural operations (or the use of land for intensive agricultural purposes) is one of the main causes of soil degradation, and there is therefore worldwide interest in quantifying the loss of soil quality generated by incorrect agricultural operations or forest management practices. This can only happen if people have the right information, skills, and organizations for understanding and dealing with soil and plant diversity issues. The book shows different studies and research works on the topic of soil management, such as soil degradation, microbiological soil properties, bio-fertilizer soil applications, water dynamics in soil profile, soil erosion and sustainability of soils among others. Transferring information and knowledge within the society is crucial for fighting soil management and soil deterioration. In addition, promoting the sustainable use of soil quality will be of growing importance for maintaining society and biodiversity in the years and decades to come.

Sustainability: Integrating Environment, Agriculture and Renewable Energy for Food Security
Tofael Ahamed, Ph.D., Ryozo Noguchi, Ph.D., and Tomohiro Takigawa, Ph.D. (Faculty of Life and Environmental Sciences, University of Tsukuba, Japan)
In series: Environmental Science, Engineering and Technology
Hardcover: 978-1-63117-702-6. $190.00.
This book has the ambition of presenting sustainability issues in a simple way to students in the field of agriculture and the environment. There is much diversity in the viewpoints on the meaning of sustainability. Sustainability must be made operational in each specific context and scaled, and appropriate methods must be designed to achieve long-term goals for the environment, agriculture, energy, and food security. The ultimate goal of the environment and agriculture is protecting soil and water to ensure food security for the growing population. This book discusses the integration of views pertaining to the sustainability of agriculture, the environment, renewable energy and food security.

Sustainable Utilization and Management of Natural Resources in the Era of Climate Change
Edward Debrah Wiafe and Frank S. Arku
(Department of Environmental and Natural Resources Management, Presbyterian University College, Akropong-Akuapem, Ghana)
In series: Environmental Remediation Technologies, Regulations and Safety
2015. 130 pp.
Hardcover: 978-1-63482-896-3. $110.00.
e-book: 978-1-63482-944-1. $110.00.
The ever-increasing human population and high demand for natural resources have resulted in declining species and ecosystems that justify the exploration of opportunities for sustainable management options. This is particularly validated in areas of the planet that are prone to extreme climatic conditions where unsustainable utilization and management is common practice. Written by young and energetic scientists, this book offers a multidisciplinary perspective that integrates environmental, sanitation and social sciences. It demonstrates the crucial importance of shaping outcomes and development. It demonstrates that the struggle to achieve sustainable natural resources management and its subsequent utilization can be done; it is possible through the combined efforts and commitment of individuals, communities and institutions with complimentary roles. In our view, this book provides a significant contribution towards systematically evaluating and improving measures of policy and management intended to regulate the exploitation of natural resources. The ideas presented in this book provide resource managers and researchers (whether government, community or the private individual) with a systematic means of resource utilization and management.

Traditional Ecological Knowledge: Practical Roles in Climate Change Adaptation and Conservation
Jerome M. Harrington
In series: Climate Change and its Causes, Effects and Prediction
Hardcover: 978-1-63482-348-7. $120.00.
e-book: 978-1-63482-349-4. $120.00.
Traditional Ecological Knowledge (TEK), also called by other names including Indigenous Knowledge or Native Science, refers to the evolving knowledge acquired by indigenous and local peoples over hundreds or thousands of years through direct contact with the environment. This knowledge is specific to a location and includes the relationships between plants, animals, natural phenomena, landscapes and timing of events that are used for lifeways, including but not limited to hunting, fishing, trapping, agriculture, and forestry. TEK is an accumulating body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (human and non-human) with one another and with the environment. It encompasses the world view of indigenous peoples which includes ecology, spirituality, human and animal relationships, and more. This book discusses the practical roles in climate change adaptation and conservation that traditional ecological knowledge provides.

U.S. Weather Satellites: Background, Program Challenges and Potential Data Gaps
Louise O. Berkan
In series: Environmental Science, Engineering and Technology
Hardcover: 978-1-63482-726-3. $120.00.
e-book: 978-1-63482-727-0. $120.00.
The National Oceanic and Atmospheric Administration (NOAA), with the aid of the National Aeronautics and Space Administration (NASA), is procuring the next generation of geostationary weather satellites. This book assesses progress on program schedule, cost, and functionality; assesses efforts to identify and address issues discovered during integration and testing; and evaluates the likelihood of a gap in satellite coverage and actions to prevent or mitigate such a gap. This book also evaluates NOAA’s progress on the Joint Polar Satellite System (JPSS) satellite program with respect to cost, schedule, and mitigation of key risks; identifies the benefits and challenges of alternatives for polar satellite gap mitigation; and assesses NOAA’s efforts to establish and implement a comprehensive contingency plan for potential gaps in polar satellite data.

Urban and Built Environments: Sustainable Development, Health Implications and Challenges
Aleix Cohen
In series: Urban Development and Infrastructure
Hardcover: 978-1-63483-067-6. $110.00.

The relationship between human beings and the urban environment is a topic increasing in relevance. Most of the people in the world live in an urban context and, as many scholars assert, the more urbanism is developing, the more specific problems arise, such as insecurity, loneliness and weak social ties. This book explores urban and built environments, focusing on chapters that examine the predictors of life satisfaction from living in an urban environment; contradictions between environmental indicators for a walkable neighbourhood and human behavior; reckless urbanization and pathways of therapeutic planning in an Italian urban sprawl; an evaluation of changes in urban environments using orthophoto maps (i.e., aerial images). This kind of research is very important for sustainable development of urban environments to gain control of the development of construction sites to monitor the keeping of building regulations and the use of building materials. Other chapters explore volatile organic compounds (VOC) based on their detrimental effects on human health and the environment; key factors for the sustainability of built environments; and efficiency of planning and design tools towards eco-friendly, high-density communities.

Water Resources in the United States: Select Issues
Dianna Harrington
In series: Water Resource Planning, Development and Management
Softcover: 978-1-63482-681-5. $62.00.

The 114th Congress faces many water resource development, management, and protection issues. Congressional actions shape reinvestment in aging federal infrastructure (e.g., dams, locks, and levees) and federal and nonfederal investment in new infrastructure, such as water supply augmentation, hydropower projects, navigation improvements, and efforts to restore aquatic ecosystems. These issues often arise at the regional or local levels but frequently have a federal connection. Ongoing issues include competition over water, drought and flood responses and policies, competitiveness and efficiency of U.S. harbors and waterways, and innovative and alternative financing approaches. This book provides an overview of the federal role in water resources development, management, and protection, with a focus on projects of the two major federal water resources agencies—Reclamation and the U.S. Army Corps—and related legislation. It also discusses overarching policy issues, such as drought and flood management and response, project funding and authorization priorities, and aquatic ecosystem restoration.

Water Resources Reform and Development Act: Select Provisions
Darrin Russell
In series: Water Resource Planning, Development and Management
Hardcover: 978-1-63482-683-9. $120.00.
e-book: 978-1-63482-684-6. $120.00.

The Water Resources Reform and Development Act of 2014 became law on June 10, 2014. Its conference report resolved differences between the Water Resources Reform and Development Act of 2013 and the Water Resources Development Act of 2013. Policy makers have recently been considering several legislative options to help finance water infrastructure projects, including projects to build and upgrade wastewater and drinking water treatment systems. This book examines one particular option, a “Water Infrastructure Finance and Innovation Act,” or WIFIA, program, which Congress included in the Water Resources Reform and Development Act of 2014. This book also summarizes congressional authorization and appropriations processes for the U.S. Army Corps and discusses agency activities under general authorities.

Wetlands: Overview and Targeted Investment for Restoration and Protection
Nelson E. Santiago
In series: Environmental Research Advances
Hardcover: 978-1-63482-728-7. $120.00.
e-book: 978-1-63482-729-4. $120.00.

Wetlands, with a variety of physical characteristics, are found throughout the country. They are known in different regions as swamps, marshes, fens, potholes, playa lakes, or bogs. Although these places can differ greatly, they all have distinctive plant and animal assemblages because of the wetness of the soil. Some wetland areas may be continuously inundated by water, while other areas may not be flooded at all. In coastal areas, flooding may occur daily as tides rise and fall. Recent Congresses have considered numerous policy topics that involve wetlands. Many reflect issues of long-standing interest, such as applying federal regulations on private lands, wetland loss rates, and restoration and creation accomplishments. This book provides an overview of issues with the wetlands; and provides some economic insights on targeting investments to cost effectively restore and protect wetland ecosystems.

ETHICS

Autonomy, Altruism and Authority in Medical Ethics: Essays in Honor of Professor Shimon Glick
Alan Jotkowitz and Shifra Shvarts (Faculty of Health Sciences, Ben Gurion University of the Negev, Israel)
In series: Ethical Issues in the 21st Century
2015. 221 pp.

In this volume, written in honor of the eightieth birthday of Professor Shimon Glick, world renowned experts in the field of medical ethics struggle with the question of how to weigh the respective values of autonomy, altruism and authority in dealing with real life bioethical dilemmas.
Conducting Research in Organizations on Ethical Matters While Focusing On Challenges, Issues and Other Aspects
Abul K. Rashid (Dr. R. Solutions LLC, White Settlement, Texas, USA)
In series: Ethical Issues in the 21st Century
Hardcover: 978-1-63482-274-9. $190.00.
There are many challenges in conducting quantitative research and examining these challenges can be helpful to select the best quantitative research strategy. Selecting an appropriate survey strategy for research on the relationship between job satisfaction and organizational commitment can be dependent on organizational environments, participants’ professional levels, and demographic criteria. Therefore, randomly selecting a survey strategy may not be the best approach. Effective organizational management in the current economic climate seems challenging with ethical, global, technological and other geopolitical issues. An analysis of studies that address the factors influencing employee commitment and an evaluation of the connection between employee commitment and performance are done based on a review of the applied scholarly literature. Three classical theories of ethics (utilitarian, virtue ethics, and ethics of rights) can be compared and contrasted, both from originality and in the current economic climate. Similarities and differences between these theories of ethics can be based on criteria such as focus, justice, categories, premise, the moral point of view, and enforcing moral rules and issues with measurement. This book addresses these developments and challenges as well as other issues in conducting research in organizations on ethical matters.

Ethical Issues in Neuroscience Research: Integrative Approaches and Paths to Progress
Marilyn Phillips
In series: Ethical Issues in the 21st Century
Hardcover: 978-1-63482-989-2. $145.00.
This book is a set of recommendations from the Bioethics Commission in response to a request from President Obama to review the ethical issues associated with the conduct and implications of neuroscience research; and President Obama’s request related to the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative. Specifically the President asked the Bioethics Commission to “identify proactively a set of core ethical standards – both to guide neuroscience research and to address some of the ethical dilemmas that may be raised by the application of neuroscience research findings.” This book focuses on the integration of ethics into neuroscience research across the life of a research endeavor; and on the analysis on three particularly controversial topics that illustrate the ethical tensions and societal implications of advancing neuroscience and technology: cognitive enhancement, consent capacity, and neuroscience and the legal system. The book seeks to clarify the scientific landscape, identify common ground, and recommend ethical paths forward.

Whistleblower Protection and Retaliation Issues at the FBI
Evelyn Brooks
In series: Ethical Issues in the 21st Century
Hardcover: 978-1-63483-147-5. $145.00.
Whistleblowers help safeguard the federal government against waste, fraud, and abuse — however, they also risk retaliation by their employers. For example, in 2002, a former FBI agent allegedly suffered retaliation after disclosing that colleagues had stolen items from Ground Zero following the September 11, 2001, terrorist attacks. The Department of Justice (DOJ) found in her favor over 10 years after she reported the retaliation. The Government Accountability Office (GAO) reviewed DOJ’s process for handling such complaints and in this book examines the time DOJ took to resolve FBI whistleblower retaliation complaints; the extent to which DOJ took steps to resolve complaints more quickly; and the extent to which DOJ complied with certain regulatory reporting requirements. Furthermore, in the context of the Intelligence Community (IC), whistleblowers are generally employees or contractors of federal intelligence agencies who bring to light information on agency wrongdoing. The threat of retaliation may deter potential whistleblowers from disclosing information on agency wrongdoing. There is seemingly tension between the desire to eliminate this deterrence, and thus encourage whistleblowers to bring agency misconduct to light, and the need to protect government secrets which, if disclosed publicly, could be harmful to the country’s national security interests. This book concludes with a discussion on three sources of IC whistleblower protection against retaliation.

EUROPE

Encyclopedia of Europe (3 Volume Set)
Michelle E. Rhodes
In series: European Political, Economic, and Security Issues
2015.
Hardcover: 978-1-63483-035-5. $450.00.
This encyclopedia presents important research on Europe. Some of the countries explored in these books include Belarus; Denmark; Finland; Kosovo; Moldova; Norway; Sweden; Germany; Ukraine; Georgia; and Russia. The book discusses several topics including the Eurozone Crisis, and Europe’s energy security.

Encyclopedia of the United Kingdom
Erika M. Ruiz
In series: European Political, Economic, and Security Issues
e-book: 978-1-63482-909-0. $350.00.
This encyclopedia presents important research on the United Kingdom. Some of the topics discussed herein include the United Kingdom’s relations with the United States; human trafficking; the modern slavery bill; homelessness in England; environmental issues; the history of the parliamentary franchise; and voting.

The Master and its Servants: The Entangled Web Between the Serbian Secret Service, Organized Crime and Paramilitary Units in the Yugoslav Conflict
Maria Vivod (Social Anthropologist, Associate Researcher (Freelance Status), CNRS, Research Laboratory, 'Dynamics of Europe,' Strasbourg, France)
In series: European Political, Economic, and Security Issues
2015. 201 pp.
Hardcover: 978-1-63483-323-3. $110.00.
e-book: 978-1-63483-353-0. $110.00.
As in most countries of the former Warsaw Pact or of Eastern Europe with a socialist-communist regime, in former Yugoslavia too, the birth
of organized crime groups was a direct product of state security services of authoritative regimes in decadence. The roots of most of these groups are to be found in the association of the state securities or secret polices with the crime-milieu. The formal practice of employing professional criminals for state-operations organized and supported by these obscure state services was established and conducted from the early beginnings of socialists/communist regimes onward. For the regime, the use of an otherwise problematic social layer at the margins of socialist societies was founded on the principle of ‘like cures like’. Using this method, the state security service in former Yugoslavia employed professional criminals in the elimination of political dissidents, ‘enemies of socialism’ and used their services to produce illicit profit for its financing. When the Milosevic regime rose to power, the ‘Service’ just changed its ‘master’ but the method remained the same. Professional criminals were recruited to join or to lead a so called ‘unit of volunteers’. Often these criminals exchanged their time in prison for a time at the ‘battlefield’. The Serbian warlords were able to carry out the political goals of the Belgrade-regime and were granted in exchange ‘open hands’ in looting and developing illicit trade. As feudal vassals they exchanged their services for the privileges they obtained from the state. From the margins of society, empowered by crime, sustained by the media, fully benefiting on violence, they rose to the highest peaks of Serbian society. This book’s goal is to depict the rise of the Serbian warrior-aristocracy.

**FINANCE**

**401(k) Plans: Protection Issues for Forced Transfers and Inactive Accounts**

*Suzanne Abbott*

In series: *Retirement Issues, Plans and Lifestyles*


Hardcover: 978-1-63482-598-6. $120.00.
e-book: 978-1-63482-599-3. $120.00.

Millions of employees change jobs each year and some leave their savings in their former employers’ 401(k) plans. If their accounts are small enough and they do not instruct the plan to do otherwise, plans can transfer their savings into an IRA without their consent. The United States Government Accountability Office examined the implications for 401(k) plan participants of being forced out of plans and into these IRAs. This book examines what happens over time to the savings of participants forced out of their plans; the challenges 401(k) plan participants face keeping track of retirement savings in general; and how other countries address similar challenges of inactive accounts. This book also discusses the issues plan sponsors, fiduciaries, service providers, and other parties face in handling plan benefits payable to participants and beneficiaries who cannot be found or are nonresponsive.

**401(k) Plans: Rollover Challenges and Fee Considerations**

*Rudolph Graham*

In series: *Retirement Issues, Plans and Lifestyles*

2015. 94 pp.


401(k) plan participants separating from their employers must decide what to do with their plan savings. Many roll over their plan savings to IRAs. As GAO previously reported, there is concern that participants may be encouraged to choose rollovers to IRAs in lieu of options that could be more in their interests. This book identifies challenges separating plan participants may face in implementing rollovers; obtaining clear information about which option to choose; and understanding distribution options.

**Computational Data Analysis Techniques in Economics and Finance**

*Michael Doumpos, Constantin Zopounidis and Chrysovalantis Gaganis (Technical University of Crete, School of Production Engineering & Management, Financial Engineering Laboratory, Chania, Greece)*

In series: *Studies in Financial Optimization and Risk Management*


Hardcover: 978-1-63463-957-6. $170.00.
e-book: 978-1-56072-017-1. $170.00.

The vast volume of financial data that exists and the globalization of financial markets create new challenges for researchers and practitioners in economics and finance. Computational data analysis techniques can contribute significantly within this context, by providing a rigorous analytic framework for decision-making and support, in areas such as financial times series analysis and forecasting, risk assessment, trading, asset management, and pricing. The aim of this edited volume is to present, in a unified context, some recent advances in the field, covering the theory, the methodologies, and the applications of computational data analysis methods in economics and finance. The volume consists of papers published in the fifth volume of the Journal of Computational Optimization in Economics and Finance (published by Nova Science Publishers). The contents of this volume cover a wide range of topics, including among others stock market applications, corporate finance, corporate performance, as well as macroeconomic issues.

**Individual Retirement Accounts: Size of Balance Issues and Enforcement of IRS Rules**

*Jake Silva*

In series: *Retirement Issues, Plans and Lifestyles*


Hardcover: 978-1-63482-176-6. $120.00.
e-book: 978-1-63482-177-3. $120.00.

In 2014, the federal government will forgo an estimated $17.45 billion in tax revenue from IRAs, which Congress created to ensure equitable tax treatment for those not covered by employer-sponsored retirement plans. Congress limited annual contributions to IRAs to prevent the tax-favored accumulation of unduly large balances. But concerns have been raised about whether the tax incentives encourage new or additional saving. Congress is reexamining retirement tax incentives as part of tax reform. This book describes IRA balances in terms of reported FMV aggregated by taxpayers; examines how IRA balances can become large; and assesses how IRS ensures that taxpayers comply with IRA tax laws.

**Private Pensions, Lump Sum Offers, and Sponsor De-Risking: Implications and Analysis**

*James G. Hughes*

In series: *Retirement Issues, Plans and Lifestyles*


Hardcover: 978-1-63483-263-2. $120.00.
e-book: 978-1-63483-264-9. $120.00.

Little public data are available to assess the extent to which sponsors of defined benefit plans are offering participants immediate lump sums to replace their lifetime annuities, defined benefit plans are offering participants immediate lump sums to replace their lifetime annuities, but certain laws and regulations provide incentives for use of this practice. Although the U.S. Department of Labor (DOL) has primary responsibility for overseeing pension sponsors’ reporting requirements, it does not require sponsors to report such lump sum offers, making oversight difficult. Pension experts generally agree that there has been a recent increase in these types of offers. Since 2012, a number of large pension plan sponsors have given selected participants a limited-time option of receiving their retirement...
benefits in the form of a lump sum. Although sponsors’ decisions to make certain lump sum “window” offers may be permissible by law, questions have been raised about participants’ understanding of the financial tradeoffs associated with their choice. This book focuses on the prevalence of lump sum offers and sponsors’ incentives to use them; the implications for participants; and the extent to which selected lump sum materials provided to participants include key information.

Private-Sector Pensions: Assessments of Disclosure and Reporting Requirements

*Christian Wong*

In series: *Retirement Issues, Plans and Lifestyles*

2015. 147 pp.

Hardcover: 978-1-63482-608-2. $120.00.
e-book: 978-1-63482-609-9. $120.00.

The private sector pension system in the United States represents trillions of dollars in assets and is a key source of financial security for millions of Americans. To promote transparency and enhance retirement security, legislation and regulations require that plan sponsors provide numerous reports to Labor, IRS, and PBGC, and numerous disclosures to plan participants. This book examines the reports and disclosures pension plans are required to make to government agencies and plan participants; the ways, if any, reports to agencies may be inefficient or ineffective; and the ways, if any, disclosures to participants may be inefficient or ineffective. The book also discusses the extent to which law and regulations permit electronic disclosure to participants; explores the reported advantages and disadvantages associated with electronic delivery; and evaluates the weaknesses identified, if any, in the agencies’ electronic delivery requirements.

Retirement Savings and Conflicted Investment Advice: Cost and Protection Issues

*Florence P. Marsh*

In series: *Retirement Issues, Plans and Lifestyles*

2015. 139 pp.

Hardcover: 978-1-63482-724-9. $120.00.
e-book: 978-1-63482-725-6. $120.00.

In response to concerns over the adequacy of retirement savings, Congress has created incentives to encourage individuals to save more for retirement through a variety of retirement plans. Some retirement plans are employer-sponsored, such as 401(k) plans, and others are established by individual employees, such as Individual Retirement Accounts (IRAs). This book describes the primary features of two common retirement savings accounts that are available to individuals. It also examines the evidence on the cost of conflicted investment advice and its effects on Americans’ retirement savings; and describes circumstances where service providers may have conflicts of interest in providing assistance related to the selection of investment options for plan sponsors and plan participants, and steps the Department of Labor (Labor) has taken to address conflicts of interest related to the selection of investment options.

Young Workers in the Shadow of the Great Recession: Analysis and Perspectives

*Nichole Caldwell*

In series: *Business Issues, Competition and Entrepreneurship*


Hardcover: 978-1-63482-184-1. $120.00.
e-book: 978-1-63482-185-8. $120.00.

Young adults in the United States have experienced higher rates of unemployment and lower rates of labor force participation than the general population for at least two decades. The Great Recession exacerbated this phenomenon. Despite a substantial labor market recovery from 2009 through 2014, vulnerable populations—including the nation’s young adults—continue to experience higher rates of unemployment. Meanwhile, changes in labor market conditions, including globalization and automation, have reduced the availability of well-paid, secure jobs for less-educated persons, particularly those jobs that provide opportunity for advancement. Furthermore, data suggest that young workers entering the labor market are affected by a long-running increase in the use of “contingent” work arrangements, characterized by contracted, part-time, temporary, and seasonal work. This book summarizes insights from the Survey of Young Workers and related research in the field; and it frames policy and research issues for future consideration by the Federal Reserve Board and others interested in young workers.

**FINE ARTS**

Copyright and the Music Marketplace: Analysis, Challenges, and Recommendations for Improvement

*Keith Turner*

In series: *Fine Arts, Music and Literature*


The United States has the most innovative and influential music culture in the world, but much of the legal framework for licensing of music dates back to the early part of the twentieth century, long before the digital revolution in music. Our licensing system is founded on a view that the music marketplace requires a unique level of government regulation, much of it reflected in statutory licensing provisions of the Copyright Act. The Copyright Office believes that the time is ripe to question the existing paradigm for the licensing of musical works and sound recordings and consider meaningful change. This book provides an analysis, discusses challenges and recommendations for improvement of the copyright laws in the music marketplace.

**FOOD SCIENCE**

Ginger: Antioxidant Properties, Functions and Medicinal Benefits

*Janine L. Perry*

In series: *Food and Beverage Consumption and Health*


Hardcover: 978-1-63482-020-2. $160.00.

Zingiber officinale Roscoe (ginger) has been used in popular medicine since ancient times, being explored for its effects anti-inflammatory, antiemetic, anti-microbial and several other properties by both common folk and scientific community. Apart from its well-known folkloric uses, there are several more studies that can be found in scientific research which describe many other capabilities of this plant. Also, several investigations have associated ginger with medicinal benefits, as antioxidant, anti-inflammatory and analgesic, antiemetic, anti-diarrheal, anti-ulcer, anti-cancer, anti-cholinesterase, anti-bacterial, anti-fungal, anti-parasitary and preventing intoxications. This book discusses all of the properties, as well as its functions and the medicinal benefits of ginger.
FOREIGN POLICY

Foreign Policy of the United States. Volume 8
Ernest Simone

In series: Foreign Policy of the United States
Hardcover: 978-1-63482-929-8, $145.00.

Due to extensive cooperation on a wide range of issues, the relationship between the United States and Europe is often called the transatlantic partnership. The two sides have many common values and concerns, and have grown increasingly interdependent in terms of security and prosperity. The transatlantic relationship and the main areas of U.S.-European cooperation and shared interest are likely to have continuing implications for U.S. policy during the 114th Congress. Members of Congress may have an interest in considering the dimensions and dynamics of current issues in U.S.-European relations in the course of oversight or legislative activities, or in the context of direct interactions with European legislators and officials. This book summarizes key issues that both illustrate the nature of U.S.-European cooperation based on shared interests and present challenges in terms of the efficacy of such cooperation. Moreover, economic sanctions on Russian individuals, entities, and sectors have been a key part of the U.S. response to Russia’s annexation of the Crimean region of Ukraine and Russia’s efforts to destabilize eastern Ukraine. This book discusses the economic implications of U.S. sanctions on Russia. Background information and issues of the Russia’s relations with the Intermediate Range Nuclear Forces is also provided. Cuban sanctions; foreign policy of unaccompanied children from Central America; U.S. assistance in China; and combating terrorism is also discussed in this book.

International Fisheries Management: Improvement Efforts as Reported to Congress
Martin D. Anderson

In series: Fish, Fishing and Fisheries
Hardcover: 978-1-63483-170-3, $145.00.

In 2006 Congress recognized the need for international cooperation to address some of the most significant issues affecting international fisheries today: illegal, unreported, and unregulated (IUU) fishing and fishing practices that may undermine the sustainability of living marine resources. In 2010, Congress focused on the need for enhanced international action to conserve and protect sharks in passing the Shark Conservation Act. By requirement, the Secretary of Commerce, in biennial reports, is to identify nations whose fishing vessels are engaged in certain IUU fishing, bycatch, and shark fishing practices; describe U.S. consultations with the identified countries to urge appropriate actions; and certify whether such actions subsequent to identification have adequately addressed the offending activities. The Secretary of Commerce has delegated authority to identify and certify countries under the Moratorium Protection Act to the NOAA Assistant Administrator for Fisheries. The Secretary of Commerce is also directed, in consultation with the Secretary of State and in cooperation with relevant regional fishery management councils and any relevant advisory committees, to take certain actions to improve the effectiveness of international fishery management organizations in conserving and managing stocks under their jurisdiction. This book surveys efforts by the United States to strengthen its leadership toward improving international fisheries management and enforcement, particularly with regard to IUU fishing, bycatch of protected living marine resources (PLMRs), and certain shark fishing practices. Furthermore, this book covers issues that have been identified during congressional hearings and in legislation introduced during the last three Congresses, some of which include the flexibility in rebuilding overfished fisheries; annual catch limits; uncertainty and data needs; catch shares (limited access privilege programs); management process and decision making; bycatch; and environmental quality.

GLOBAL AFFAIRS

A Contribution to the Critique of Contemporary Capitalism: Theoretical and International Perspectives
Raju J. Das (Faculty of Graduate Studies, York University, Toronto, Canada)

In series: Global Political Studies
Hardcover: 978-1-63117-559-6, $150.00.
Softcover: 978-1-63483-149-9, $89.00.
e-book: 978-1-63117-562-6, $89.00.

The book is a critique of the capitalist world, including both the injustices it inflicts and the acts of resistance it provokes, which end up reproducing it. It is also a critique of the ideas about this world, especially some of the ideas which are considered to be progressive. The book talks about why so-called critical thought as it exists is inadequate; why genuine critique is possible and necessary; what its different forms and attributes are; and who it is aimed toward: the masses or academia? This book presents what it considers to be the most adequate form of critique: the Marxist critique. This is a critique which explains humanity’s problems, mainly in terms of the conflict-ridden social relations that determine how society’s resources are used. And this is a critique which seeks to transcend the current arrangements to establish popular democracy in all spheres of life, including economic, political and cultural. The book then employs the principles of the Marxist critique to shed light on specific issues in the world as they exist and on the so-called progressive ideas about these issues. The issues include: poverty and inequality in India; industrial disasters in the US; labour unfreedom in the capitalist North and South; the relation between economic and political power in modern society; social democracy; development of capitalism in rural areas and imperialism; pharmaceutical fraud and the consequent threat to human health in the US, and the Maoist movement, and protest politics (of the ‘anarchist type’), against dispossession and other forms of injustice. Anyone with an interest in a theoretical understanding of the notion of critique, in the nature of the Marxist critique, and in some of the fundamental issues facing the humanity will benefit from this book.

Sociologists, political scientists, human geographers, anthropologists, and experts in development studies will find some value in this book. Critical scholars in general, who have an interest in understanding power relations in economic and political arenas, will be the main audience. People involved in NGOs and grassroots movements will also find something useful in the critiques this book offers. Large parts of the book are actually written in a non-academic mode for the non-specialists.

GOVERNMENT

Biennial Budgeting: Options and Considerations for Congress and the Federal Government
Carolyn Douglas

In series: Congressional Policies, Practices and Procedures
2015. 159 pp.
Hardcover: 978-1-63482-673-0, $120.00.

Biennial budgeting is a concept that may involve several variations, including two-year budget resolutions, two-year appropriations, and
other changes in the timing of legislation related to revenue or spending. Biennial budgeting proposals may focus on enacting budgetary legislation for either a two-year period or two succeeding one-year periods in a single measure. This book discusses options, issues and previous Congressional action in biennial budgeting. The book provides background information on the annual character of the current process and a history of proposals to convert to multiyear budgeting; describes three bills that reflect different approaches to biennial budgeting; analyzes the potential effects of converting from annual to biennial budgeting; discusses the federal budget process; and examines challenges and proposals for adopting a long-term budget focus.

Constitutional Inquiries: The Doctrine of Constitutional Avoidance and the Political Question Doctrine
Kelly R. Doyle
In series: Government Procedures and Operations
Softcover: 978-1-63482-927-4. $62.00.

Article III of the Constitution established the judicial branch of the United States, consisting of the Supreme Court and of any “inferior Courts as the Congress may from time to time ordain and establish...” To staff such courts, the Constitution empowered life-tenured and salary-protected judges to adjudicate certain “cases” or “controversies,” including cases arising under the Constitution. The Supreme Court, in Marbury v. Madison, held that the judicial power to interpret the Constitution necessarily includes the power of judicial review—that is, the power to countermand the decisions by other government agents because a given decision contravenes the Constitution. The Supreme Court has established a host of loosely related rules generally called the constitutional avoidance doctrine that discourage a federal court from issuing broad rulings on matters of constitutional law. After providing general background on the power of judicial review and the major theories on the constitutional avoidance doctrine, this book explores the various rules that allow a court to avoid a ruling that invalidates a democratically enacted law and the logic behind those rules. This book provides an exploration of how the doctrine of constitutional avoidance has influenced some of the recent jurisprudence of the Roberts Court, criticisms of the doctrine, and the implications for Congress. The book also discusses the justiciability and the separation of powers in the political question doctrine, which the Supreme Court has articulated to restrict when federal courts will adjudicate disputes.

Domestic Content Restrictions on Federal Procurements: Provisions and Issues
Elizabeth V. Brody
In series: American Political, Economic, and Security Issues
Hardcover: 978-1-63482-120-9. $120.00.
e-book: 978-1-63482-121-6. $120.00.

Broadly understood, domestic content restrictions are provisions which require that items purchased using specific funds appropriated by Congress be produced or manufactured in the United States. Federal law contains a number of such restrictions, each of which applies to different entities and supplies, and imposes somewhat different requirements. Some of these restrictions have, however, been waived pursuant to the Trade Agreements Act (TAA). This book discusses the provisions and issues of domestic content restrictions on federal procurements.

Enactment of War and the Use of Military Force: Background and Legal Implications
Craig Perez
In series: Government Procedures and Operations
2015. 185 pp.

Article I, Section 8, of the Constitution vests in Congress the power “to declare War.” Pursuant to that power, Congress has enacted 11 declarations of war during the course of American history relating to five different wars, the most recent being those that were adopted during World War II. In addition, Congress has adopted a number of authorizations for the use of military force, the most recent being the joint resolution enacted on October 16, 2002, authorizing the use of military force against Iraq. To buttress the nation’s ability to prosecute a war or armed conflict, Congress has also enacted numerous statutes which confer standby authority on the President or the executive branch and are activated by the enactment of a declaration of war, the existence of a state of war, or the promulgation of a declaration of national emergency. This book examines a number of topics related to declarations of war and authorizations for the use of military force by the United States. It provides historical background on each of the declarations of war and on several major authorizations for the use of force that have been enacted; analyzes the implications of declarations of war and authorizations for the use of force under both international law and domestic law; lists and summarizes the more than 250 standby statutory authorities that can come into effect pursuant to a declaration of war, the existence of a state of war, and/or a declaration of national emergency; describes the procedures in Congress governing the consideration of declarations of war and authorizations for the use of force, including the procedures under the War Powers Resolution; and sets forth in two appendices the texts of all of the declarations of war and the major authorizations for the use of force that have been enacted.

Federal Courts and Judgeships: Types, Issues, and Profiles
Adam Scott Newton
In series: Government Procedures and Operations
Hardcover: 978-1-63463-842-5. $185.00.

The United States Constitution established only one federal court—the United States Supreme Court. Beyond this, Article III of the Constitution left it to the discretion of Congress to “ordain and establish” lower federal courts to conduct the judicial business of the federal government. From the very first, Congress established a host of different federal tribunals to adjudicate a variety of legal disputes. The two central types of federal “courts”—courts established under Article III and those tribunals that are not—differ in many respects, including with regard to their personnel, purposes, and powers. This book discusses the use of congressional power to create federal courts. It also examines ongoing congressional interest in select characteristics of lower federal court judges.

Federal Drug Enforcement: History, Policies, Trends
Collin Valponi
In series: Drug Transit and Distribution, Interception and Control
Hardcover: 978-1-63463-786-2. $120.00.
e-book: 978-1-63463-797-8. $120.00.

The federal government prohibits the manufacturing, distribution, and possession of many intoxicating substances that are solely intended for recreational use (notable exceptions are alcohol and tobacco); however, the federal government also allows for and controls the medical use of...
many intoxicants. Federal authority to control these substances primarily resides with the Attorney General of the United States. This book discusses domestic drug enforcement. It outlines historic development and major changes in U.S. drug enforcement to help provide an understanding of how and why certain laws and policies were implemented and how these developments and changes shaped current drug enforcement policy. This book also highlights certain non-criminal regulatory requirements of the Controlled Substances Act (CSA).

Federal Grant Management and Controls: Select Assessments
Dana T. Greer
In series: Government Procedures and Operations
2015. 139 pp.
Hardcover: 978-1-63482-559-7. $120.00.
e-book: 978-1-63482-560-3. $120.00.
In fiscal year 2013, the federal government obligated over $555 billion for grants. Effective oversight of internal controls is important for providing reasonable assurance that grants are awarded properly, recipients are eligible, and federal grant funds are used as intended. This book examines whether the five largest grant-making agencies’ internal control oversight processes for their grant programs were consistent with OMB requirements and describes internal control issues that have been reported related to the grants management process and key grant programs. The book also examines federal, state, and local experiences with implementing grants funded by the Recovery Act by identifying examples of good practices employed and challenges faced in meeting the act’s accountability and transparency requirements. Finally, the book examines the extent to which selected federal agencies and grantees have mechanisms and guidance in place to distinguish between administrative and program costs and to facilitate the availability of these data to Congress and the public; and the extent to which there are challenges that hinder the comparability of grant administrative cost data.

Federal Real Property: Analyses of Key Issues
Adam B. Clark
In series: Government Procedures and Operations
Hardcover: 978-1-63482-278-7. $120.00.
e-book: 978-1-63482-279-4. $120.00.
Prior to seeking appropriations, The General Services Administration (GSA) is required to obtain congressional authorization for constructing, purchasing, leasing, or renovating real property. The GSA controls more than 8,700 owned and leased buildings with 422 million square feet of floor space, which represents about 12.6% of the government’s 3.354 billion total building square footage. GSA has the authority to acquire, operate, and dispose of real property on behalf of other federal agencies, including the judiciary. Its portfolio includes courthouses, land ports of entry, and federal office space. This book provides an analyses of key issues of federal real property.

Federal Research and Development: Analyses of Funding and R&D Center Performance
Phillip L. Cooke
In series: Government Procedures and Operations
Hardcover: 978-1-63463-965-1. $120.00.
e-book: 978-1-63463-966-8. $120.00.
President Obama’s budget request for FY2015 includes $135.352 billion for research and development (R&D), a $1.670 billion (1.2%) increase from the FY2014 level of $133.682 billion. The request represents the President’s R&D priorities; Congress may opt to agree with part or all of the request, or it may express different priorities through the appropriations process. In particular, Congress will play a central role in determining the growth rate and allocation of the federal R&D investment in a period of intense pressure on discretionary spending. Low or negative growth in the overall R&D investment may require movement of resources across disciplines, programs, or agencies to address priorities. This book analyzes the funding and R&D center performance.

Federal Rulemaking: Overview and the Use of Cost-Benefit Analysis in Significant Rules
Norman A. Elwin
In series: Economic Issues, Problems and Perspectives
Hardcover: 978-1-63463-724-4. $120.00.
e-book: 978-1-63463-752-7. $120.00.
Federal regulation, like taxing and spending, is one of the basic tools of government uses to implement public policy. Although not as frequently examined as congressional or presidential policy making, the process of developing and framing rules is viewed by some as central to the definition and implementation of public policy in the United States. Federal agencies issue thousands of regulations each year to achieve national goals. For the few hundred of these rules deemed to be significant, agencies are required to assess expected costs and benefits. For the subset of these rules estimated to have the greatest economic impact, agencies must also include an assessment of alternatives. This book addresses how often and to what extent significant, economically significant, and major rules include key elements for assessing or analyzing benefits and costs; and how and to what extent agencies assess the quality of the scientific, technical, and other types of data they use to consider benefits and costs. The purpose of this book is to provide Congress with an overview of the federal rulemaking process and a brief discussion of the major laws and executive orders that prescribe the procedures agencies are to apply when promulgating regulations.

Government Shutdowns: Select Analyses and Effects of the 2013 Shutdown
Yvonne E. Gonzalez
In series: Government Procedures and Operations
Hardcover: 978-1-63482-340-1. $145.00.
When federal agencies and programs lack funding after the expiration of full-year or interim appropriations, the agencies and programs experience a funding gap. If funding does not resume in time to continue government operations, then, under the Antideficiency Act, an agency must cease operations, except in certain situations when law authorizes continued activity. The criteria that flow from the Antideficiency Act for determining which activities are affected are complex. 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 causes of shutdowns, including the legal framework under which they may occur; processes related to how agencies may plan for the contingency of a shutdown; effects of shutdowns, focusing especially on federal personnel and government operations; and issues related to shutdowns that may be of interest to Congress.

Parliamentary Reference Sources of Congress: House and Senate Governing Procedures
Abigail L. Hanley
In series: Congressional Policies, Practices and Procedures
2015. 149 pp.
Hardcover: 978-1-63463-781-7. $120.00.
e-book: 978-1-63463-800-5. $120.00.
House and Senate procedures are not based solely on the standing rules of each chamber. Instead, their foundation rests on a combination of the standing rules, precedents (which are primarily created by decisions on points of order and guided by responses to parliamentary inquiries), informal parliamentary practices which have become accepted traditions and are sometimes cited as precedent, rule-making statutes, party caucus rules, and constitutional mandates. This book defines these concepts, discusses their relationship, and describes the official parliamentary reference sources from which the authority for the procedures used in each chamber is derived.

**Presidential Executive Action on Immigration:**

*Overview and Issues*

*David Ferguson*

In series: *Immigration in the 21st Century: Political, Social and Economic Issues*


Hardcover: 978-1-63482-264-0. $120.00.
e-book: 978-1-63482-264-0. $120.00.

President Obama announced in June 2014 that he would seek “to fix as much of our immigration system as I can on my own” through administrative action. It seems likely that such actions will prompt heated legal debate concerning the scope of the Executive’s discretionary authority over immigration matters, including with respect to the enforcement of immigration-related sanctions and the granting of immigration benefits or privileges. On November 20, 2014, President Obama announced his Immigration Accountability Executive Action which revises some U.S. immigration policies and initiates several programs, including a revised border security policy for the Southwest border; deferred action programs for some unauthorized aliens; revised interior enforcement priorities; changes to aid the entry of skilled workers; the promotion of immigrant integration and naturalization; and several other initiatives the President indicated would improve the U.S. immigration system. This book provides an overview of the executive action on immigration, and well as discusses the issues involved.

**The Federal Prison Population: Growth and Cost Issues**

*Mason C. Darwin*

In series: *American Political, Economic, and Security Issues*


Correctional services—which includes salaries and benefits for correctional officers—is the Department of Justice’s (DOJ) Bureau of Prisons’ (BOP) largest operational cost, and BOP has undertaken a number of initiatives to reduce costs. This book describes BOP’s major costs and actions to achieve savings; assesses the extent to which BOP has mechanisms to identify additional efficiencies; and describes potential changes within and outside of BOP’s authority that might reduce costs. This book also provides an overview of the federal prison population buildup, policy changes, issues and options of the BOP.

**The Sanctions Way: Issues and Use by the United States**

*Brian Fields*

In series: *Government Procedures and Operations*


Economic sanctions on Russian individuals, entities, and sectors have been a key part of the U.S. response to Russia’s annexation of the Crimean region of Ukraine and Russia’s efforts to destabilize eastern Ukraine. This book discusses the economic implications of the U.S. sanctions on Russia. The book continues by examining U.S. sanctions in several other countries including Cuba, Iran, North Korea, and Burma.

**Voting Congestion: Analyses of Lines and Wait Times**

*Shelby Allen*

In series: *Government Procedures and Operations*


Hardcover: 978-1-63463-905-7. $120.00.
e-book: 978-1-63463-931-6. $120.00.

Millions turn out to vote in U.S. general elections, and there were reports of long wait times at some polling places on Election Day in 2012. The authority to regulate elections is shared by federal, state, and local officials; however, responsibility for conducting federal elections primarily resides with about 10,500 local election jurisdictions. This book addresses the extent to which local election jurisdictions collected data to measure voter wait times and had long wait times on Election Day 2012; and the factors that affected wait times and their impacts across jurisdictions.

**HEALTH**

**FDA Foreign Offices and Imported Food Safety: An Examination**

*George Jenkins*

In series: *Food and Beverage Consumption and Health*


The Food and Drug Administration (FDA) has a responsibility for ensuring the safety and proper labeling of more than 80 percent of the U.S. food supply, including an increased volume of imported food. The FDA’s foreign offices have engaged in a variety of activities since 2010 to help ensure that imported food is safe. This book examines these activities as well as the extent of the foreign offices’ contributions to the safety of imported food; and the extent to which FDA has engaged in workforce planning for its foreign offices.

**Food Shopping Patterns and Geographic Access to Food: Comparisons and Data**

*Mary Henderson*

In series: *Food and Beverage Consumption and Health*


Hardcover: 978-1-63483-141-3. $185.00.
e-book: 978-1-63483-142-0. $185.00.

The National Household Food Acquisition and Purchase Survey (FoodAPS) is the first survey to collect unique data to measure voter wait times and had long wait times on Election Day 2012; and the factors that affected wait times and their impacts across jurisdictions.
concludes with updates on population estimates of indicators of spatial access to healthy and affordable foods in the United States using population data from the 2010 Census, income and vehicle availability data from the 2006-2010 American Community Survey, and a 2010 directory of supermarkets.

**From Sexual Deviance to Abuse: Etiology, Attribution and Prevention**
*Roland Paulauskas (Department of Psychology, Siauliai University, Lithuania)*

In series: *Health Psychology Research Focus*  
Hardcover: 978-1-63483-204-5. $160.00.  
e-book: 978-1-63483-634-0. $160.00.

The concept of sexual deviance refers to the nature of sexual behavior that is nonconforming with societal norms or expectations, is maladaptive and interferes with the individual’s functioning. Sexual deviance is also often perceived as harmful or even dangerous. In most cases, it manifests through the use of force, sexual focus on children or other anomalous activities and targets. It encompasses a vast range of atypical or aberrant sexual behaviors that may or may not be formalized into a law. The author of this book adheres to the theory that although sexual violence may be motivated by opportunistic factors, the common denominator in most instances of sexual abuse is sexual deviance. The results of the authors' research indicate that most male and female subjects interpret sexual deviance as a multi-causal phenomenon; however, juvenile sex offenders are more likely to externalize these causes rather than attribute them to internal factors. This book is divided into three major parts. The first part focuses on critical review of different theories of etiology of sexual deviance, sex offender characteristics and treatment implications; the second explores attribution of sexually abnormal behavior and its measurement; and the third describes the findings of the study and their relevance to the treatment of sexual abusers.

**Green Tea and Health: Antioxidant Properties, Consumption and Role in Disease Prevention**
*Nicolas Powell*

In series: *Food and Beverage Consumption and Health*  
2015. 185 pp.  
Hardcover: 978-1-63482-904-5. $190.00.  
e-book: 978-1-63482-915-1. $190.00.

Green tea is a popular healthful beverage in many parts of the world and its medical properties have been extensively explored. Green tea originated in China and the chemistry of green tea is renowned by its presence of polyphenolic compounds, particularly catechins. This book reviews the antioxidant activities of green tea catechins, its consumption and the ways it prevents potential infections; the potential beneficial effects of green tea consumption on Diabetes mellitus and how it can be used to reduce severe brain damage as well as its use in treating obesity. Other chapters examine how catechins may assist in the suppression of heart transplant rejection; a discussion on EGCG as the most abundant catechin green tea and its capability of inhibiting cell proliferation and inducing apoptosis in cancer cells; an evaluation and comparison of the phenolic composition and metal content of commercially available aromatized green tea infusions; and an investigation of the chromatographic behavior of catechins.

**Health Communication: Advocacy Strategies, Effectiveness and Emerging Challenges**
*Rosemary M. Caron (Associate Professor and Director of Undergraduate Studies, University of New Hampshire, College of Health and Human Services, Dept. of Health Management and Policy, NH, USA)*

In series: *Public Health in the 21st Century*  
Hardcover: 978-1-63483-422-3. $190.00.  

The communication of health information is a critical determinant for the achievement and maintenance of health at the individual and population level. Health communication can take on various forms, including the use of social media, reading of a children’s story, policy development and management, the patient-physician partnership, and via community-based participatory research, for example. This book provides a broad perspective on selected areas of health communication and addresses how we, as a population, can utilize communication to achieve what should be a basic human right in the twenty-first century. We are living in changing times, and how we communicate health information is happening more rapidly than ever before. This book highlights selected areas of research, action, and recommendations for implementation that are applicable to all sectors involved in promoting health and preventing disease. This book is not only for the educator, but the learner, as well. Both parties are essential for effective policy-making that will enable a healthy citizenry to meet the contemporary demands posed by the twenty-first century. The author hopes that you, the reader, will reference this book often as you educate, learn, and communicate about health so that it is more accessible and adaptable to the society in which we live.

**Leadership and Service Learning Education: Holistic Development for Chinese University Students**
*Daniel TL Shek, Florence KY Wu, and Joav Merrick (Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hunghom, PR China)*

In series: *Health and Human Development*  
Edited by: Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)  
Hardcover: 978-1-63483-340-0. $160.00.  

Adolescent risk behavior is a growing problem in the global context. In many places, efforts are carried out to prevent the occurrence of adolescent risk behavior and to identify the best intervention options. In view of the growing magnitude of adolescent risk behavior, one question is how we can “explain” such behavior. Traditionally, people tend to find answers “within” adolescents. Explanations such as “weak mindedness”, “lack of determination” and “laziness” have been shared in people in different cultures. While these beliefs are widely held, there is no scientific support for such explanations. Fundamentally, promotion of psychosocial competencies is at the heart of positive youth development and psychosocial competence is closely related to leadership skills in adolescents. In view of the developmental issues faced by Chinese university students and taking advantage of higher education reform in Hong Kong, a subject entitled “Tomorrow’s Leaders” is offered to around 2.000 students every year. Based on our evaluation of this project, we strongly encourage colleagues to make similar initiatives elsewhere to create leadership for the future.

**Teen Dating: Perspectives on Relationships and Violence**
*Juliana Aiken*

In series: *Public Health in the 21st Century*  
Hardcover: 978-1-63321-448-4. $145.00.  

Adolescent dating violence has surfaced as a significant public health issue. As teen dating violence (TDV) incidence has escalated...
substantially in recent years, a number of research, practice and policy efforts have been championed in response. One critical challenge in effectively addressing teen dating violence relates to the lack of research that directly considers how youth conceptualize teen dating in the first place, apart from specifically aggressive or violent relationships. This book discusses perspectives on relationship and violence in teen dating.

**Health Care**

Achieving the Quadruple Aim in a Technology-Driven Transformed Health System: Better Care, Improved Health, Lower Costs and Decreased Medical Liability

*James B. Couch (Senior Physician Executive, The JHD Group, Inc.)*

In series: *Health Care in Transition*

2015. 159 pp.

Hardcover: 978-1-63321-675-4. $125.00.


PPACA required by January 1, 2014, the establishment in each state of health insurance markets where eligible individuals and small businesses can compare and select among insurance plans. Issuer participation, including the number of plans these issuers offer, is a key factor in the extent of consumer choice offered by the exchanges. The United States Government Accountability Office (GAO) was asked to examine the number of issuers participating in both the individual and small-business exchanges beginning in 2014, as well as how this compared with issuer participation in the individual and small-group markets prior to the exchanges. In this book, GAO describes the extent to which issuers that previously offered health plans in the individual and small-group markets participated in the exchanges in 2014, and the issuers that participated in 2014 exchanges and the health plans they offered. This book also describes Small Business Health Options Programs (SHOPs) functionality, enrollment, plan availability, and premiums; and stakeholders’ views on key factors that have affected current SHOP enrollment or may affect future enrollment growth.

Geographic Variation in Private Health Care Spending: Selected Procedures and Metropolitan Areas

*Derrick Watkins*

In series: *Health Care in Transition*


Hardcover: 978-1-63482-875-8. $120.00.

e-book: 978-1-63482-876-5. $120.00.

Research shows that spending on health care varies by geographic area and that higher spending in an area is not always associated with better quality of care. While a substantial body of research exists on geographic variation in spending in Medicare, less research has been done on variation in private sector health care spending, although this spending accounts for about a third of overall health care spending. As U.S. health expenditures continue to rise, policymakers and others have expressed interest in better understanding spending variation and how health care systems can operate efficiently—that is, providing equivalent or higher quality care while maintaining or lowering current spending levels. This book examines how spending per episode of care for certain high-cost procedures varies across geographic areas for private payers; and how the mix of service types, and the volume, intensity, and price of services contribute to variation in episode spending across geographic areas for private payers.

Health Benefits for Federal Employees and Members of Congress: Overview, Provisions, and Fraud Issues

*Nathaniel Marsh*

In series: *Health Care in Transition*

2015. 147 pp.

Hardcover: 978-1-63483-368-4. $120.00.

e-book: 978-1-63483-369-1. $120.00.

The federal government is the largest employer in the United States, and the Federal Employees Health Benefits (FEHB) Program is the largest employer-sponsored health insurance program in the country. It provides more than $40 billion in health care benefits annually. This first chapter of this book provides a general overview of FEHB. It describes the structure of FEHB, including eligibility for the program and coverage options available to enrollees, as well as premiums, benefits and cost sharing, and general financing of FEHB. The chapter also describes the role of the Office of Personnel Management (OPM) in administering the program. The second chapter discusses the Patient Protection and Affordable Care Act (ACA) which generally specifies that the only health plans that the federal government may make available to Members and certain congressional staff are either created under ACA or offered through an exchange. The chapter summarizes the provisions of the final rule made to OPM which amends FEHB eligibility regulations, and describes how it affects current and retired Members and congressional staff. The third chapter in this book provides historical and background information that helps explain how FEHBMP has evolved into the program it is today. The fourth and final chapter describes oversight of fraud and abuse programs by OPM’s contracting office, and the OPM contracting office’s approach to measuring the effectiveness of FEHB’s carriers’ fraud and abuse programs.

Medicaid Prescription Drugs: Pricing and Policy Issues

*Sandra Olivia Barton*

In series: *Health Care in Transition*

2015. 130 pp.

Hardcover: 978-1-63482-522-1. $120.00.

e-book: 978-1-63482-523-8. $120.00.

Medicaid is a federal-state entitlement program that pays for health care and related services on behalf of certain low-income individuals. Prescription drugs are an optional Medicaid benefit and all states cover outpatient drugs. States can create formularies, or lists of preferred drugs, but federal rules tend to result in comprehensive coverage, even for beneficiaries enrolled in Medicaid managed care plans. Pharmaceutical manufacturers that voluntarily participate in Medicaid are required to pay rebates to states on covered outpatient drugs, which help Medicaid receive manufacturers’ lowest or best price. States then share the rebate they receive from pharmaceutical manufacturers with the federal government. This book discusses Medicaid prescription drug pricing and policies.

Medicaid Third-Party Liability: Savings Issues and Efforts

*Donald Murphy*

In series: *Health Care in Transition*


Hardcover: 978-1-63483-049-2. $120.00.

e-book: 978-1-63483-050-8. $120.00.

In fiscal year 2013, Medicaid—jointly financed by states and the federal government—provided health care coverage to over 70 million individuals at a total cost of about $400 billion. Congress generally established Medicaid as the health care payer of last resort, meaning that if enrollees have another source of health care coverage—such as private insurance—that source should pay, to the extent of its liability, before Medicaid does. This is referred to as third-party liability (TPL). There are known challenges to ensuring that Medicaid is the payer of
last resort. This book examines the extent to which Medicaid enrollees have private insurance; and state and Centers for Medicare & Medicaid Services (CMS) initiatives to improve TPL efforts. Provided in this book is the Effective Practices Guide. Its intent is to provide state Medicaid agencies with information on practices that could assist states in improving their identification and successful pursuit of legally liable third party resources.

Medicare Part D Prescription Drug Benefit: Elements, Provisions and Integrity Issues

In series: Health Care in Transition

Elena Marshall

2015. 130 pp.
Hardcover: 978-1-63482-524-5, $120.00.
e-book: 978-1-63482-525-2, $120.00.

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 established a voluntary, outpatient prescription drug benefit under Medicare Part D, effective January 1, 2006. Medicare Part D provides coverage through private prescription drug plans (PDPs) that offer only drug coverage, or through Medicare Advantage (MA) prescription drug plans (MA-PDs) that offer coverage as part of broader, managed care plans. Private drug plans participating in Part D bear some financial risk, though federal subsidies cover most program costs in an effort to encourage participation and keep benefits affordable. This book discusses the prescription drug benefit of Medicare Part D. It also examines practices for promoting prescription drug program integrity, and the extent that CMS’s oversight of Medicare Part D program integrity, including the program integrity contractors, reflects these practices.

Public Reporting of Health Care Performance Information: Best Practices

Alexis Pratt

In series: Health Care in Transition

Hardcover: 978-1-63482-346-3, $120.00.
e-book: 978-1-63482-347-0, $120.00.

The purpose of this book is to provide practical approaches to designing public reports that make health care performance information clear, meaningful, and usable by consumers. This book includes three reports which focus on the presentation of comparative health care performance data; the background information contained in public reports that frames the decision question, provides a context for using the information, and details the specifics of the data; and the promotion and dissemination of reports. This book also discusses quality reporting on Medicare's compare sites.

Staffing Issues in Military Health Care: Mental Health Providers and VA Nursing

Douglas Parker

In series: Health Care in Transition

Softcover: 978-1-63482-993-9, $62.00.

Mental health providers are essential to the Department of Defense's (DOD) delivery of health care to servicemembers and other beneficiaries. DOD's need for these providers has grown as increasing numbers of servicemembers experience life-threatening combat situations. This led to congressional attention—such as the NDAA for Fiscal Year 2010, which included provisions to help DOD increase the number of mental health providers it employs. This book examines how staffing levels changed in response to congressional direction; and how DOD and the military services assess current and future needs for mental health providers. Furthermore, this book reviews the extent to which Department of Veterans Affairs medical centers (VAMC) have implemented the Veterans Health Administration's (VHA) nurse staffing methodology; and VHA oversees VAMCs’ implementation and ongoing administration of the methodology.

State Children’s Health Insurance Program: Effects on Coverage and Selected Costs to Consumers

Ted Warner

In series: Children's Issues, Laws and Programs

2015. 113 pp.
Hardcover: 978-1-63483-673-9, $120.00.
e-book: 978-1-63483-674-6, $120.00.

CHIP is a joint federal-state program that finances health insurance for over 8 million children. Since the program’s inception, the percentage of uninsured children nationwide has decreased by half, from 13.9 percent in 1997 to 6.6 percent in the first three months of 2014. This year, Congress will decide whether to extend CHIP funding beyond 2015. In this book, GAO examines what assessments of CHIP suggest about its effect on children’s health care coverage and access; and what key issues identified by GAO’s work the Congress may wish to consider in determining whether to extend CHIP funding.

State Children’s Health Insurance Program: Elements and Considerations

Marty Sparks

In series: Children's Issues, Laws and Programs

2015. 185 pp.
Hardcover: 978-1-63483-675-3, $145.00.
e-book: 978-1-63483-676-0, $145.00.

The State Children’s Health Insurance Program (CHIP) is a means-tested program that provides health coverage to targeted low-income children and pregnant women in families that have annual income above Medicaid eligibility levels but have no health insurance. CHIP is jointly financed by the federal government and states, and the states are responsible for administering CHIP. Under the CHIP program, the federal government sets basic requirements for CHIP, but states have the flexibility to design their own version of CHIP within the federal government’s basic framework. As a result, there is significant variation across CHIP programs. This book describes the basic elements of CHIP, focusing on how the program is designed, who is eligible, what services are covered, how enrollees share in the cost of care, and how the program is financed. The book also includes a brief discussion of the future of CHIP. Furthermore, this book examines provisions of H.R. 2, which is the Medicare Access and CHIP Reauthorization Act (MACRA) of 2015; CHIP financing, beginning with an explanation of the federal matching rate; and the ACA MOE requirement for children if federal CHIP funding expires.

The Family and Medical Leave Act: Overview and Policy Issues

Natasha Stephens

In series: Health Care in Transition

2015. 81 pp.
Softcover: 978-1-63482-284-8, $62.00.

The Family and Medical Leave Act of 1993 (FMLA), as amended, is intended to help employees balance work and family life. The act provides eligible employees with two types of job-protected leave: regular leave and military family leave. In turn, military family leave consists of qualifying exigency leave and military caregiver leave. This book provides an overview of the FMLA and discusses the policy issues involved.
Housing Finance and the Secondary Mortgage Market: Alternatives for Change
Sally G. Mitchell
In series: Housing Issues, Laws and Programs
2015. 146 pp.
Hardcover: 978-1-63482-877-2. $120.00.
e-book: 978-1-63482-878-9. $120.00.
When making a decision about housing, a household must choose between renting and owning. Multiple factors, such as a household’s financial status and expectations about the future, will influence the decision. Few that decide to purchase a home have the necessary savings or available financial resources to make the purchase on their own. Most need to take out a loan. A loan that uses real estate as collateral is typically referred to as a mortgage. This book serves as a primer that explains how the system of housing finance works. This book also examines various mechanisms that policy-makers could use to attract more private capital to the secondary mortgage market; and addresses how those mechanisms could be combined in different ways to help the market make the transition to a new structure during the coming decade.

Native American Housing: Federal Assistance, Challenges Faced and Efforts to Address Them
Cassandra Durand
In series: Housing Issues, Laws and Programs
Hardcover: 978-1-63482-009-7. $185.00.
e-book: 978-1-63482-045-5. $185.00.
Native Americans living in tribal areas experience some of the poorest housing conditions in the United States. Native Americans in tribal areas are several times more likely to live in housing that is physically substandard or overcrowded than the U.S. population as a whole. They are also more likely to live in poverty than the general population, further contributing to housing problems. In addition, a number of issues, such as the legal status of tribal land, pose unique barriers to housing for many people living in tribal areas. This book discusses federal assistance, challenges faced and efforts made to address these challenges for Native American housing.

The Housing Finance System: Developments, Challenges, Assessing Potential Changes
Roger D. White
In series: Housing Issues, Laws and Programs
Housing finance played a major role in the 2007-2009 financial crisis, and the housing sector continues to show considerable strains. The federal government’s role in the single-family housing finance system has also grown substantially. As a result, policymakers and others have made proposals to change the system. To help policymakers assess various proposals and consider ways to make it more effective and efficient, this book describes market developments since 2000 that have led to changes in the federal government’s role in the single-family housing finance system; analyzes whether and how these market developments have challenged the housing finance system; and presents an evaluation framework for assessing potential changes to the system.

Unused Federal Property for Homeless Assistance: An Examination
Julia L. Brown
In series: Housing Issues, Laws and Programs
Hardcover: 978-1-63482-995-3. $120.00.
e-book: 978-1-63482-996-0. $120.00.
The federal government holds thousands of properties that agencies no longer need to accomplish their missions. When the government disposes of unneeded properties—through transfer, donation, or sale—it generates savings by eliminating maintenance costs. In addition, when state or local governments, nonprofits, or businesses acquire unneeded federal properties, they may be used to provide services to the public, such as temporary housing, or contribute to economic development. Title V of the McKinney-Vento Homeless Assistance Act enacted in 1987 created a program to assist the homeless, in part, by identifying unused federal real property and making it available to homeless assistance providers. This book examines the identification and transfer of federal real property to homeless assistance providers; and the benefits and challenges homeless assistance providers and national advocacy organizations reported in identifying, acquiring, and using federal real property, and the potential actions that could help to address these challenges. This book also provides an explanation of the central role played by the General Services Administration (GSA) in the disposal of federal real property at most agencies. It then provides a discussion of the unique disposal processes at DOD and the U.S. Postal Service (USPS), which each have independent statutory authority to dispose of their own properties. It concludes with an overview of the environmental and historic preservation requirements that apply to the disposal of properties at all federal agencies.

Human Rights
Youth in Solitary Confinement: Focus on New York and Outside Perspectives
Meghan Lloyd
In series: Human Rights: Background and Issues
Hardcover: 978-1-63483-530-5. $120.00.
e-book: 978-1-63483-538-1. $120.00.
On July 10, 2014, the New York Advisory Committee held a briefing on New York’s use of solitary confinement (or extreme isolation, as it is sometimes termed) of youth inmates. The expert presenters included representatives from various state and city agencies and institutions in the State of New York as well as advocates and former inmates. The Committee examined the extent of the use of solitary confinement of youth in the State of New York and the City of New York, and, in particular, the disproportionate assignment of racial minorities to solitary confinement. Based on the briefing, the book discusses the history of solitary confinement within the United States; the conditions of solitary confinement in New York jails; the mental, physical and developmental effects of solitary confinement on youth in New York jails; the primary legal protections related to solitary confinement of youth inmates; and the pending legislative, judicial and executive efforts to eliminate or limit the solitary confinement of youth.
IMMIGRATION

Barriers and Migration Control Along U.S. Borders: Background, Issues and Statutory Authority
Arthur Rivera
In series: Immigration in the 21st Century: Political, Social and Economic Issues
2015. 130 pp.
Hardcover: 978-1-63483-308-0. $120.00.
e-book: 978-1-63483-309-7. $120.00.
Border enforcement is a core element of the Department of Homeland Security’s effort to control unauthorized migration, with the U.S. Border Patrol (USBP) within the U.S. Customs and Border Protection (CBP) as the lead agency along most of the border. Border enforcement has been an ongoing subject of congressional interest since the 1970s, when illegal immigration to the United States first registered as a serious national problem; and border security has received additional attention in the years since the terrorist attacks of 2001. This book reviews efforts to combat unauthorized migration across the Southwest border in the nearly three decades since IRCA initiated the modern era in migration control. In reviewing such efforts, the book takes stock of the current state of border security and considers lessons that may be learned about enhanced enforcement at U.S. borders. Furthermore, the title discusses key statutory authorities and requirements governing DHS’s construction of barriers along the U.S. borders. It also includes appendixes listing federal laws that have been waived by DHS in furtherance of border construction projects.

Immigration Policy Proposals and Potential Budgetary Effects
Kimberly D. Parsons
In series: Immigration in the 21st Century: Political, Social and Economic Issues
Hardcover: 978-1-63482-344-9. $120.00.
e-book: 978-1-63482-345-6. $120.00.
During the past two years, the Congress has considered proposals to modify the nation’s immigration system. The Border Security, Economic Opportunity, and Immigration Modernization Act, passed by the Senate in June 2013, addresses multiple facets of immigration policy, including changes to the existing visa system, improvements in border security and law enforcement, and changes to the status of people who currently live in the country without legal authorization. Other proposals have focused on one component of immigration policy—for example, improving border security or changing certain aspects of the visa system. Whether the proposals involve broad or narrow changes to immigration policy, they could have a variety of consequences for both citizens and noncitizens, for the federal government, and for state and local governments. This book examines some of those proposals and how such changes would affect the federal budget.

Immigration Policy: Political Influences, Challenges and Economic Impact
Carissa Todd
In series: Immigration in the 21st Century: Political, Social and Economic Issues
Hardcover: 978-1-63463-862-3. $110.00.
Imigration legislation is a debated subject among the attentive public and political operatives, at both the national and sub-national level of government, in the United States. In recent years, the American government has been more likely to pass new laws, with many states issuing new punitive measures intended to discourage migration into the US from Latin America. The move by sub-governments breaks with a historical pattern whereby immigration policy directives were the purview of the national government. American state governments, arguably, have been stirred to act because of gridlock at the national level. This book attempts to help better understand major immigration policy change at the national level in the US over the past 60 years, as a way to enlighten the contemporary debate. This book also discusses the political influences, challenges and economic impact immigration policies have in several other countries such as Italy, China and New Zealand.

Removal and Exclusion of Foreign Nationals: Issues and Considerations
Delia Gibson
In series: Immigration in the 21st Century: Political, Social and Economic Issues
2015. 130 pp.
Hardcover: 978-1-63482-610-5. $120.00.
e-book: 978-1-63482-611-2. $120.00.
The ability to remove foreign nationals (aliens) who violate U.S. immigration law is central to the immigration enforcement system. Some lawful migrants violate the terms of their admittance, and some aliens enter the United States illegally, despite U.S. immigration laws and enforcement. This book provides an overview of removing foreign nationals from the United States. It discusses immigration policies and issues on health-related grounds for exclusion; terrorist grounds for exclusion and removal of aliens; and the consequences of criminal activity for immigrants.

Special Immigration Situations in the United States
Austin Banks
In series: Immigration in the 21st Century: Political, Social and Economic Issues
Hardcover: 978-1-63482-677-8. $120.00.
e-book: 978-1-63482-678-5. $120.00.
Special immigrants comprise a category of permanent employment-based admissions under the Immigration and Nationality Act (INA). While the special immigrant category is unique, it does bear some similarities to other admission categories that are authorized by other sections of the INA, including refugees and Amerasian children. When civil unrest, violence, or natural disasters erupt in spots around the world, concerns arise over the safety of foreign nationals from these troubled places who are in the United States. Provisions exist in the INA to offer temporary protected status (TPS) or relief from removal under specified circumstances. A foreign national who is granted TPS receives a registration document and an employment authorization for the duration of TPS. This book discusses special immigration situations which include TPS; special immigrant juveniles; unaccompanied alien children; refugee admissions and resettlements; and examines asylum and "credible fear" issues in the U.S. Immigration policy.

The Other Side of Italy: Immigration in a Changing Country
Francesco Pittau (Centro Studi e Ricerche IDOS, Roma, Italy)
In series: Immigration in the 21st Century: Political, Social and Economic Issues
2015. 201 pp.
In Italy, the rate of foreign immigration is among one of the major cultural shifts after World War II. Increased immigration rates account not only for people fleeing from countries during the war or times of
unstable political situations (170,000 in 2014), but also for people relocating for work or family-related reasons. The immigrants were fewer than 150,000 in 1970, but currently count for 5 million (8% of the total population, not including those who have become Italian citizens), and are more numerous than Italian citizens residing abroad (4.5 million). This book proposes to introduce foreign readers to this phenomenon, which is in some respects problematic. Translation of texts written for Italian readers was avoided and the authors made choices to include original themes that could be interesting to readers outside Italy. The book’s conclusions were entrusted to three immigrants: an Albanian sociologist, an Eritrean researcher and an Algerian novelist. According to the forecasts of demographers, the future Italy will be a country of large-scale immigrations, accounting for more than 10 million people by mid-century. Will Italy only be a country with many immigrants or a country with an adequate migration policy? Although society is still divided on the subject of newcomers, this book hopes to solve this issue in a positive manner and stimulate greater interest abroad.

**INTERNATIONAL TRADE**

**Intellectual Property Rights: Background, International Trade Protection and the Role of Exclusion Orders**

*Evelyn P. Gilbert*

In series: *Intellectual Property in the 21st Century*

Hardcover: 978-1-63482-396-8. $120.00.
e-book: 978-1-63482-397-5. $120.00.

Intellectual property rights (IPR) are legal rights granted by governments to encourage innovation and creative output by ensuring that creators reap the benefits of their inventions or works. They may take forms such as patents, trade secrets, copyrights, trademarks, or geographical indications. Congress has constitutional responsibility for legislating and overseeing IPR and international trade policy.

Responsible for developing IPR policy, engaging in IPR-related international negotiations, and enforcing IPR laws cuts across multiple U.S. government agencies. This book provides background on IPR and discusses the role of U.S. international trade policy in enhancing IPR protection and enforcement abroad. This book also describes Customs and Border Protection’s (CBP) processes for enforcing exclusion orders; and assesses CBP’s management of its enforcement process at ports of entry.

**Monetary Policy and Risk Management in Financial Globalization**

*Georgios I Zekos, BSc (Econ), JD, LLM, PhD (Law), PhD (Econ), Advocate and Economist, (Serres-Macedonia-Hellas)*

In series: *Monetary, Fiscal and Trade Policies*

Hardcover: 978-1-63482-895-6. $270.00.

Globalization is a complex, forceful, legal and social process that takes place within an integrated whole with no regard for geographical boundaries. Financial globalization is criticized for consequential increases in economic volatility and disruptions to monetary policy autonomy. Globalization increases the vulnerability of economies to shock while restraining the apparatus that central banks and policy authorities have for dealing with said shocks engendered at home and abroad. Globalization and corporate governance interact to deal with governance issues arising from the globalization of business. Corporate governance is, to a great extent, a set of means through which outside investors protect themselves against expropriation by insiders. Risk management is at the centre of all financial actions. Moreover, risk management is a two-step course: firstly, it is necessary to uncover what risks exist in an investment and then deal with those risks in a way best-suited to a corporation’s investment objectives. Financial markets have been liberalized around the globe. Banks advance their capacity to administer credit risk function with greater leverage by lending more of their assets to risky borrowers. In a market-based financial system, banking and capital market advancements are tied to fluctuations in the control of market-based financial intermediaries. Risk management has become a momentous element of company management after the modern financial crisis.

**NAFTA at 20: Overview, Trade Effects, and Impact on Agriculture**

*Marian Weaver*

In series: *Trade Issues, Policies and Laws*

Hardcover: 978-1-63482-779-9. $120.00.
e-book: 978-1-63482-780-5. $120.00.

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. The agreement may have accelerated the trade liberalization that was already taking place, but many of these changes may have taken place with or without an agreement. Nevertheless, NAFTA is significant because it was the most comprehensive free trade agreement (FTA) negotiated at the time and contained several groundbreaking provisions. 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. This book also examines the integration of North America’s agricultural and food markets as a result of the North American Free Trade Agreement.

**U.S. Free Trade Agreements: Enforcement of Labor Provisions with Partner Countries**

*Violet Hanson*

In series: *Trade Issues, Policies and Laws*

2015. 100 pp.

Partner countries of free trade agreements (FTA) that the Government Accountability Office (GAO) selected—the Dominican Republic-Central America-United States Free Trade Agreement (CAFTA-DR) and the FTAs with Colombia, Oman, and Peru—have taken steps to implement labor provisions and other initiatives to strengthen labor rights. This book examines steps that selected partner countries have taken, and U.S. assistance they have received, to implement these provisions and other labor initiatives and the reported results of such steps; submissions regarding possible violations of FTA labor provisions that DOL has accepted and any problems related to the implementation of FTA labor provisions and report results to Congress.

**LANGUAGE**

**Attention and Meaning: The Attentional Basis of Meaning**

*Giorgio Marchetti, Giulio Benedetti and Ahlam Alharbi (Pozzo d'Adda, Italy)*

In series: *Languages and Linguistics*
Linguistics and Language Education in New Horizons: The Link between Theory, Research and Pedagogy

Si Fan, Thao Le, and Quynh Le (Faculty of Education, University of Tasmania, Australia)

In series: Languages and Linguistics
Hardcover: 978-1-63482-800-0. $310.00.

While there are many books on language and literacy education, there is an urgent need to provide a book which makes an essential link between theory, research and pedagogy with a focus on the two interrelated fields of linguistics and language education. This book is a timely contribution to the current academic discourse for such a study. It is a big challenge for lecturers and university students of educational linguistics to be fully aware of new developments in the field of linguistics and language education. This book provides some essential insights and directions which have shaped innovative ideas, practices and research implications in this broad field. The chapters of the book are grouped into three parts with different focuses: theory into research, cultural and social aspects which influence theory and practice of language education, and finally pedagogical implications. The book is a collective contribution of scholars with intensive research and professional experiences from different countries, levels of education and global contexts.

Phonetics: Fundamentals, Potential Applications and Role in Communicative Disorders

Jasmine Davis

In series: Languages and Linguistics
Hardcover: 978-1-63483-637-1. $110.00.

Specific Language Impairment (SLI) occurs in 6.3% of children, twice as much in males than females. Deficits in phonology may include difficulties with early speech sound production, and/or weak phonological awareness skills, resulting in struggles with reading and writing. Chapter 1 reviews the most relevant research published that informs the definition, identification and treatment of expressive language impairment (ELI) in children ages 3 to 10 years old, with a focus on phonetic and phonological interventions. Chapter 2 explores the place of coarticulation in the phonology/phonetics dichotomy, relating coarticulation to what may in essence be viewed as its phonological counterpart - assimilation. Chapter 3 addresses how an approach based on phonological principles can be a reliable method for the speech intervention in children with cleft palate and compensatory articulation errors. A categorically stratified scale for classifying compensatory articulation errors according to severity and response to therapy is described. Finally, some strategies for speech intervention which are more suitable for a phonological and linguistic intervention are presented. The chapter explains how is that selecting the strategies to be used during the intervention according the severity of the articulation errors seem to increase their effectiveness.

Recent Advances in Language and Communication

Gerald M. Martínez

In series: Languages and Linguistics
e-book: 978-1-63482-813-0. $190.00.

Language ability is not only universal, but of vast potential, and related to numerous other cognitive and social functions. This book explores individual language process development and how it proceeds in a very predictable manner, parallel to specific areas of brain development. The authors' acquaint the reader with the current debate on the prevalence of oral and written linguistic difficulties as a precursor of
Specific Learning Difficulties (SLD). The difficulties in verb/action processing found in patients with Parkinson's disease are discussed as well. The inferential abilities of children with Specific Language Impairments (SLI) are also reviewed. Traumatic brain injury (TBI) and its effects on communication are explored in Chapter 6. The authors' findings suggest that communication difficulty persist for years after injury, independent from other cognitive abilities. In later chapters, the authors examine atypical language development and psychopathological risk. The remaining chapters review nonverbal behavior and its importance in objectifying and verifying the diagnosis of mental disorders, if any; the communication challenges for the deaf (and applications that can help impaired people in some aspects of their life); and finally, the importance of segmental duration - a very important component of a text-to-speech (TTS) system in order to produce high quality synthetic speech which sounds natural.

**LATIN AMERICA**

**Cuba in Context: A Consideration of Issues and U.S. Relations and Restrictions**

*Janet G. Campbell*

In *series: Latin American Political, Economic, and Security Issues*


Hardcover: 978-1-63482-985-4. $120.00.

e-book: 978-1-63482-986-1. $120.00.

Political and economic developments in Cuba and U.S. policy toward the island nation, located just 90 miles from the United States, have been significant congressional concerns for many years. Especially since the end of the Cold War, Congress has played an active role in shaping U.S. policy toward Cuba, first with the enactment of the Cuban Democracy Act of 1992 and then with the Cuban Liberty and Democratic Solidarity Act of 1996. Both of these measures strengthened U.S. economic sanctions on Cuba that had first been imposed in the early 1960s, but the measures also provided roadmaps for a normalization of relations dependent upon significant political and economic changes in Cuba. A decade ago, Congress partially modified its sanctions-based policy toward Cuba when it enacted the Trade Sanctions Reform and Export Enhancement Act of 2000 allowing for U.S. agricultural exports to Cuba that led to the United States becoming a major source for Cuba’s food imports. This book discusses Cuba’s political and economic environment; U.S. policies toward Cuba; and selected issues in U.S.-Cuban relations. This book also provides information on legislative provisions restricting relations with Cuba. It lists the various provisions of law comprising economic sanctions on Cuba, including key laws that are the statutory basis of the embargo, and provides information on the authority to lift or waive these restrictions.

**Encyclopedia of Cuba**

*Eileen L. Nelson*

In *series: Latin American Political, Economic, and Security Issues*


Hardcover: 978-1-63483-036-2. $245.00.


This encyclopedia presents important research on Cuba. Some of the topics discussed herein include Cuba’s policies and relations with the United States; Cuba broadcasting; human rights; offshore oil development; legislative restrictions limiting the normalization of relations; and the reengagement of detainees formerly held at Guantanamo Bay, Cuba.

**Unaccompanied Children from Central America: Issues and Considerations**

*Veronica K. Quinn*

In *series: Latin American Political, Economic, and Security Issues*


Softcover: 978-1-63482-937-3. $62.00.

e-book: 978-1-63482-938-0. $62.00.

Since 2012, there has been a rapid increase in the number of unaccompanied alien children (UAC) apprehended at the U.S.-Mexican border. According to DHS’s Customs and Border Protection (CBP), the number of UAC from any country apprehended at the U.S.-Mexican border climbed from more than 24,000 in fiscal year 2012 to nearly 39,000 in fiscal year 2013, and to nearly 69,000 in fiscal year 2014. Prior to fiscal year 2012, the majority of UAC apprehended at the border were Mexican nationals. However, more than half of the UAC apprehended at the border in fiscal year 2013, and 75 percent apprehended in fiscal year 2014 were nationals of El Salvador, Guatemala, and Honduras, according to DHS/CBP. El Salvador, Guatemala, and Honduras face various socioeconomic challenges, which the United States is seeking to address through assistance efforts. This book identifies U.S. mission-level efforts to identify causes of the rapid increase in migration of unaccompanied children and address the causes identified. Furthermore, this book discusses the demographics of unaccompanied alien children while they are in removal proceedings.

**Venezuela: Conditions, Issues and U.S. Relations**

*Augustus Brady*

In *series: Latin American Political, Economic, and Security Issues*

2015. 188 pp.

Hardcover: 978-1-63463-784-8. $145.00.


While historically the United States has had close relations with Venezuela, a major oil supplier, friction in bilateral relations rose under the leftist populist government of President Hugo Chávez (1999-2013), who died in March 2013 after battling cancer for almost two years. U.S. policymakers and Members of Congress have had concerns for a number of years about the deterioration of human rights and democratic conditions in Venezuela as well as the Venezuelan government’s lack of cooperation on anti-drug and counterterrorism efforts. The United States has imposed financial sanctions on eight current or former Venezuelan officials for allegedly helping the Revolutionary Armed Forces of Colombia with drug and weapons trafficking. The United States has also imposed sanctions on three Venezuelan companies for support to Iran and on several Venezuelan individuals for supporting Hezbollah. Despite tensions in relations, the Obama Administration has maintained that the United States remains committed to seeking constructive engagement with Venezuela. This book discusses the conditions, issues and United States relations of Venezuela.

**LAW**

**Abortion Law in the United States and Europe**

*Jean Simpson*

In *series: Law, Crime and Law Enforcement*

2015. 76 pp.


In 1973, the U.S. Supreme Court concluded in Roe v. Wade that the U.S. Constitution protects a woman’s decision to terminate her pregnancy. In Doe v. Bolton, a companion decision, the Court found
that a state may not unduly burden the exercise of that fundamental right with regulations that prohibit or substantially limit access to the means of effectuating the decision to have an abortion. Rather than settle the issue, the Court’s rulings since Roe and Doe have continued to generate debate and have precipitated a variety of governmental actions at the national, state, and local levels designed either to nullify the rulings or limit their effect. These governmental regulations have, in turn, spawned further litigation in which resulting judicial refinements in the law have been no more successful in dampening the controversy. Although the primary focus of this book is legislative action with respect to abortion, discussion of the various legislative proposals necessarily involves an examination of the leading Supreme Court decisions concerning a woman’s right to choose. This book also summarizes laws on abortion in selected European countries which shows diverse approaches to the regulation of abortion in Europe. A majority of the surveyed countries allow abortion upon the woman’s request in the early weeks of pregnancy, and allow abortion under specified circumstances in later periods.

Action Plan for Combating Illegal, Unreported, and Unregulated Fishing and Seafood Fraud
Caleb Jennings
In series: Fish, Fishing and Fisheries 2015. 97 pp.
Softcover: 978-1-63483-164-2. $62.00.
On June 17, 2014, the White House released a Presidential Memorandum entitled “Establishing a Comprehensive Framework to Combat Illegal, Unreported, and Unregulated Fishing and Seafood Fraud.” Among other actions, the Memorandum established a Presidential Task Force on Combating Illegal, Unreported, and Unregulated Fishing and Seafood Fraud. The Task Force was directed to report to the President “recommendations for the implementation of a comprehensive framework of integrated programs to combat illegal, unreported, and unregulated (IUU) fishing and seafood fraud that emphasizes areas of greatest need.” Those recommendations were provided to the President on December 18, 2014. There are 15 recommendations, which are broad in scope and call on agencies to take concrete and specific actions to combat illegal, unreported, and unregulated (IUU) fishing and seafood fraud throughout the seafood supply chain. This plan articulates the aggressive steps that federal agencies will take both domestically and internationally to implement the recommendations the Task Force made in December 2014. The plan identifies actions that will strengthen enforcement, create and expand partnerships with state and local governments, industry, and non-governmental organizations, and create a risk-based traceability program to track seafood from harvest to entry into U.S. commerce. The plan also highlights ways in which the United States will work with our foreign partners to strengthen international governance, enhance cooperation, and build capacity to combat IUU fishing and seafood fraud. This book addresses the recommendations made by the Task Force.

Advances in Criminology Research
Julia Guzman
Hardcover: 978-1-63483-180-2. $110.00.
In this book, the authors discuss recent advances in criminology research. In the first chapter, the author gives a spatial analysis of the causes of criminality. Spatial analysis is one of the most widespread methods of criminological research in English-speaking countries. It is used to analyze the reasons of individual criminal behavior. In the second chapter, the author provides a combination of integrated and biosocial approaches on criminology. This chapter provides an argument whereby the agenda of white collar crime research can be developed by a synthesis of integrated and biosocial factors. In the third chapter, the authors present a theory that describes the association between social categories and inequitable police enforcement behavior. The social sciences have long been interested in the ways that an individual’s demographic characteristics such as race, gender and age shape behavior in applied settings where people differ in power and status. In the last chapter, the gendered attachment-self-control theory is examined, designed to explain the gender differences in criminal involvement.

Crime, Victimization, and Police Contact: Select Reports from the Bureau of Justice Statistics
Kassy Moore
Hardcover: 978-1-63463-959-0. $185.00.
In 2011, U.S. households experienced about 3,394,700 burglary victimizations. Persons age 12 or older who had disabilities experienced 1.3 million nonfatal violent crimes in 2012. Nonfatal violent crimes include rape, sexual assault, robbery, aggravated assault, and simple assault. In 2012, an estimated 293,800 nonfatal violent and property hate crime victimizations occurred against persons age 12 or older residing in U.S. households. Seasonal patterns exist when similar fluctuations in the victimization rates tend to recur each year during the same season. Seasonal patterns are a long-standing topic in both popular and scholarly literatures on crime and show how environmental factors, such as temperature changes and daylight hours, might be associated with crime throughout the year. This book discusses crime, victimization and police contact in these crimes and victimization. Topics include household burglary, crimes against persons with disabilities, hate crimes, and seasonal patterns in criminal victimization trends. This book also examines requests for police assistance and police behavior during traffic and street stops.

Criminal Background Checks and the Equal Employment Opportunity Commission’s Conviction Records Policy: Perspectives and Impact
Samuel Wilkinson
An employer’s use of an individual’s criminal history in making employment decisions may, in some instances, violate the prohibition against employment discrimination under Title VII of the Civil Rights Act of 1964, as amended. This book discusses how criminal record information is collected and recorded, why employers use criminal records, and the EEOC’s interest in such criminal record screening.

Criminal History Records and Background Checks: Elements, Considerations and Recommendations
Brian Wilkins
Hardcover: 978-1-63483-438-4. $145.00.
There is widespread interest in obtaining access to criminal history record information from reliable sources for the purpose of screening an individual’s suitability for employment, licensing, or placement in positions of trust. The interest is based on a desire or perceived need to evaluate the risk of hiring or placing someone with a criminal record in particular positions and is intended to protect employees, customers, vulnerable persons, and business assets. Employers and organizations are subject to potential liability under negligent hiring doctrines if they fail to exercise due diligence in determining whether an applicant has a
criminal history that is relevant to the responsibilities of a job and determining whether placement of the individual in the position would create an unreasonable risk to other employees or the public. This book addresses to what extent states conduct FBI record checks for selected employment sectors and face any challenges; states have improved the completeness of records, and remaining challenges that federal agencies can help mitigate; and private companies conduct criminal record checks, the benefits those checks provide to employers, and any related challenges.

**Eminent Domain: Uses, Effects, and Civil Rights Implications of its Abuse**

**Irene Hines**  
In series: Government Procedures and Operations  
Hardcover: 978-1-63483-440-7. $120.00.  
e-book: 978-1-63483-441-4. $120.00.

The Fifth Amendment to the U.S. Constitution states that government shall not take private property except for “public use” and with “just compensation.” Official states from national organizations and state and local governments cited various purposes for which eminent domain can be or has been used, including the building or expansion of transportation-related projects; the elimination and prevention of conditions that are detrimental to the physical, social, and economic well-being of an area; remediation of environmental contamination; and economic development. This book provides information on the purposes for and extent to which eminent domain can be and has been used; the process states and select localities across the country use to acquire land, including by eminent domain; how the use of eminent domain has affected individuals and communities in select localities; and the changes state legislatures made to laws governing the use of eminent domain from June 2005 through July 2006.

**Federal Civil Rights Engagement with America's Arab and Muslim Communities**

**Amy Benson**  
In series: Human Rights: Background and Issues  
Hardcover: 978-1-63483-442-1. $145.00.  

In the wake of September 11, 2001, proactive engagement with the Arab and Muslim-American community became a new, distinct, and national civil rights priority for federal government enforcement components. This book examines the methods, goals and effectiveness of the federal government’s engagement with Arab and Muslim-American individuals and communities. Specifically, the book focuses on actions taken by the federal government to address, prevent and eradicate violations of civil rights laws against the Arab and Muslim-American communities, as well as efforts taken to ameliorate, eliminate or reduce religious, national-origin, and ethnic bias. Furthermore, this book provides a brief summary of selected federal criminal civil right statutes.

**Federal Forfeiture Law: Provisions, Issues and Reform Proposals**

**Jerald Diaz**  
In series: Law, Crime and Law Enforcement  

Forfeiture has long been an effective law enforcement tool. Congress and state legislatures have authorized its use for over 200 years. Every year, it redirects property worth billions of dollars from criminal to lawful uses. Forfeiture law has always been somewhat unique. By the close of the 20th century, however, legislative bodies, commentators, and the courts had begun to examine its eccentricities in greater detail because under some circumstances it could be not only harsh but unfair. The Civil Asset Forfeiture Reform Act was a product of that reexamination. This book is an overview of federal forfeiture law. It sketches the origins and general attributes of forfeiture, describes the distribution of the hundreds of millions of dollars it generates, and identifies some of the constitutional issues it raises. Furthermore, the book provides an overview of selected legal issues and reforms surrounding asset forfeiture, including the burden-of-proof standard and innocent-owner defense in civil asset forfeiture cases, access to counsel in both civil and criminal forfeiture cases, allocation of profits from confiscated assets, and DOJ’s equitable sharing program.

**Hate Crime Data Collection: Guidelines, Identification Assistance and Selected Statistics**

**Gloria Thompson**  
In series: Law, Crime and Law Enforcement  
Hardcover: 978-1-63483-624-1. $120.00.  
e-book: 978-1-63483-625-8. $120.00.

This book is intended to assist law enforcement agencies in reporting incidents of hate crime to the FBI Uniform Crime Reporting (UCR) Program. It addresses policy, the types of bias crime to be reported, how to identify a hate crime and guidelines for reporting hate crime. Furthermore, this book presents counts and rates of hate crime victimization in 2012, using data from the National Crime Victimization Survey (NCVS). The tables show change in the number and rate of hate crime victimizations since 2011 and during the 10-year period since 2003. They examine the perceived motivation for the hate crime, demographic characteristics of victims and offenders, and the percentage of hate crime reported to police. In addition, the tables compare characteristics of hate crime and nonhate crime victimization, and the NCVS and FBI's Uniform Crime Reporting (UCR) hate crime statistics.

**International Approaches to Online Copyright Enforcement**

**Patricia Wade**  
In series: Law, Crime and Law Enforcement  
Hardcover: 978-1-63483-168-0. $145.00.  

The United Kingdom's Intellectual Property Office commissioned two consultants to undertake an international comparison of approaches to online copyright enforcement. The aims and objectives of the research were to establish the range of different approaches currently being adopted around the world to enforce copyright in the online environment; and the strengths and weaknesses of different approaches and to what extent enforcement approaches are perceived to be working to reduce infringement levels. The countries chosen for inclusion in the research were as follows: United Kingdom, United States, Canada, France, the Netherlands, Spain, Italy, Brazil, and South Korea. This book discusses the final report on the international comparison of approaches to online copyright infringement. It also provides the 2014 out-of-cycle review of notorious markets and examines safe harbor for online service providers.

**Law and Legal Issues in the United States: Analyses and Developments, Volume 4**

**Laurent B. Landers**  
In series: Law and Legal Issues in the United States: Analyses and Developments  
Hardcover: 978-1-63463-840-1. $145.00.  

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 mandatory vaccinations; federal and state quarantine and isolation authority; prayer and religious expression in public institutions; free exercise of religion by secular organizations and their owners; aliens’ right to counsel in removal proceedings; nondiscrimination in environmental regulation; the proposed equal rights amendment; and federal civil rights statutes.

Law and State in the Globalized World: A Comparative and Conceptual Analysis
Surendra Bhandari (Associate Professor, Ritsumeikan University, Kyoto, Japan)
More than at any other time in history, today, law governs us all. As a result, some level of knowledge of the law is becoming increasingly important at all levels. It is especially useful for students of law, international relations, politics, and social sciences. International professionals as well as civil society organizations also benefit from the basic knowledge of law. In the post-war era, it is not only domestic laws, but also international laws that govern our individual rights, duties, and social interactions, including international relations. This is particularly the case in the fields of peace, security, human rights, international crime, environmental protection, and world trade. Moreover, the demand for harmonization between domestic and international law has, in many respects, caused international law to become the main source for the creation and development of domestic law. This book offers a comparative perspective on the basic concepts and ideas about law and state. It was created in response to a number of demands. It is written in a simple and comprehensive style so that general readers, law students, paralegals, and students from different social science disciplines can, in a straightforward fashion, all understand the legal concepts, legal philosophy, and law-state relationships in the context of globalization, international cooperation, and the maintaining of the rule of law at the domestic level. This book aims to offer legal knowledge not only to students who are required to study law as an introductory course, but also to general readers on a wider scale. Its treatment is not confined to a particular legal system full of technical jargons, but rather explains general legal principles applicable to different legal systems in a non-technical manner, allowing the reader to understand the basic legal concepts from a general standpoint.

Measures of Violent Crime: Select Reports from the Bureau of Justice Statistics
Jacquelyn E. Miles
In 2009–12, 68% of victims of serious violent crime—rape or sexual assault, robbery, or aggravate assault—reported experiencing socio-emotional problems as a result of their victimization. Victims who experienced severe distress as a result of a violent victimization were more likely to report the crime to police and receive victim services than victims with no distress or mild distress. This book discusses select reports from the Bureau of Justice Statistics on the measures of violent crimes including firearm violence, homicide, and nonfatal domestic violence. It also examines the socio-emotional impact violent crimes have on individuals.

Modern Perspectives on Policing: Selected Papers
Ryan T. Shwartz

Music Licensing and Copyright: An Overview of Issues and the Legal Framework
Gregory L. West
Hardcover: 978-1-63483-174-1. $120.00.
e-book: 978-1-63483-175-8. $120.00.
The laws that determine who pays whom in the digital world were written, by and large, at a time when music was distributed mainly via radio broadcasts or physical media, such as sheet music and phonograph records, and when each of these forms of distribution represented a distinct channel with unique characteristics. With the emergence of the Internet, Congress updated some copyright laws in the 1990s. It applied one set of copyright laws to digital services it viewed as akin to radio broadcasts, and another set of laws to digital services it viewed as akin to physical media. Since that time, however, consumers have increasingly been consuming music via digital services that incorporate attributes of both radio and physical media. Under existing law, the companies that compete in delivering music to listeners face very different cost structures, depending on the royalty provisions applicable to their unique business models. The royalties received by songwriters, performers, music publishers, and record companies for one play or sale of a particular song may vary greatly, depending upon the particular business model of the company delivering music. This book describes the current legal framework governing licensing and rate-setting in the music industry. It also examines the changes in technology and consumer behavior that have reshaped the industry.

Preservation of Biological Evidence: Best Practices
Louise M. Clinton
Hardcover: 978-1-63463-974-3. $120.00.
e-book: 978-1-63463-975-0. $120.00.
Across the nation, headlines tell the story of evidence that has been mishandled, misplaced, lost, or destroyed. Often the blame for these mishaps is directed toward property and evidence custodians housed in law enforcement agencies nationwide. Many law enforcement agencies do not properly address, recognize, or support the efforts of their property rooms. Although these agencies bear ultimate responsibility for maintaining the integrity of the evidence, the real problem lies with a systemic failure to properly account for evidence from collection through final disposition. This failure reduces the public’s confidence in the criminal justice system to produce just results in criminal and civil proceedings. This book discusses the best practices for evidence handlers: the use of DNA in solving cold cases; the effects of DNA advances on police property rooms; and provides insight on what every law enforcement officer should know about DNA evidence.

Sex Offender Registration within Indian Tribes: Implementation and Challenges
Angelica K. Bishop
In series: Law, Crime and Law Enforcement
According to DOJ, tribal nations are disproportionately affected by violent crimes and sex offenses in particular. In 2006, Congress passed SORNA, which introduced new sex offender registration and notification standards for states, territories, and eligible tribes. The act made special provisions for eligible tribes to elect either to act as registration jurisdictions or to delegate SORNA functions to the states in which they are located. This book addresses, among other things, the extent to which eligible tribes have retained their authority to implement, and for those that did, describe their implementation status; and implementation challenges tribes that retained their authority reported, and steps federal agencies have taken or could take to address these challenges.

Sex Trafficking: Issues From a Gender-Based Discrimination Perspective and Federal Legal Proposals
Joyce Fuller
In series: Law, Crime and Law Enforcement
Hardcover: 978-1-63483-450-6. $120.00.
e-book: 978-1-63483-451-3. $120.00.
The trafficking of persons has frequently been described as a “modern” or “Twenty-First Century” form of slavery. According to the Department of State, the U.S. government considers trafficking in persons to include all of the criminal conduct involved in forced labor and sex trafficking. Under the TVPA, trafficking in persons does not require actual movement of the victim. It is the many forms of enslavement that lay at the heart of human trafficking. Individuals may be trafficking victims regardless of whether they once consented, participated in a crime as a direct result of being trafficked, were transported in the exploitative situation, or were simply born into a state of servitude. This book discusses the gender-based civil right violations and provides proposals from the 114th Congress to amend the criminal laws of sex trafficking.

MEDIA AND COMMUNICATIONS

Mobile Access to Government Information and Services: Trends and Federal Actions
Jordan L. Weaver
In series: Media and Communications - Technologies, Policies and Challenges
Softcover: 978-1-63482-604-4. $62.00.
Today, millions of Americans use mobile devices like smartphones and tablet computers on a daily basis to communicate and obtain information. Further, due to recent technical advances in mobile technology, consumers can use these devices to carry out a broad range of activities that previously required a desktop or laptop computer including shopping, banking, and accessing government services. Given these trends, providing government information and services “anytime, anywhere, and on any device,” has become increasingly important, particularly as some mobile users may not have any other means of online access. This book describes the demographics of mobile users and the factors that might be associated with the increased use of mobile devices; the devices individuals are using to access government services and the challenges people face; and the actions the federal government has taken to enhance access to government services via mobile devices. This book also examines a report on Congress Member adoption and use of two social networking services: Twitter and Facebook. The book analyzes data on Member use of Twitter and Facebook collected by an academic institution in collaboration with the Congressional Research Service during a two-month period between August and October 2011 and the adoption of both platforms as of January 2012.

Net Neutrality and the FCC: Legal Issues and Matters of Debate
Denise Lambert
In series: Electronics and Telecommunications Research
In February 2015, the Federal Communications Commission (FCC) adopted an order that will impose rules governing the management of Internet traffic as it passes over broadband Internet access services (BIAS), whether those services are fixed or wireless. The rules are commonly known as “net neutrality” rules. The order was released in March 2015. According to the order, the rules ban the blocking of legal content, forbid paid prioritization of affiliated or proprietary content, and prohibit the throttling of legal content by broadband Internet access service providers (BIAS providers). The rules are subject to reasonable network management, as that term is defined by the FCC. This book discusses selected legal issues raised by FCC’s 2015 open internet order, and examines the net neutrality debate.

MEDICINE

Contributions of African American Scientists to the Fields of Science, Medicine, and Inventions, Second Edition
Robert B. Sanders (University of Kansas, USA)
In series: Distinguished Men and Women of Science, Medicine and the Arts
Scientists included in this book represent the fields of biochemistry, biology, chemistry, computer science, dentistry, engineering, entomology, genetics, geology, mathematics, medicine, nursing, physics, psychology, sociology, zoology, and inventions. Described here are African American men and women who have contributed to the advancement of science, including inventions. These individuals have contributed in large and small ways that might have been overlooked when chronicling the history of science. All individuals included here were listed in the published literature. The author conducted no interviews, and no suggestions were accepted solely on the basis of hearsay. There is no intent to be all-inclusive. The selections were strictly the author’s. Many important contributions have been omitted, especially those of recent years, because a limit had to be set. This book shows that African Americans made many contributions to the sciences, medicine, education, and inventions as slaves, as freed persons, and as immigrants. They made contributions during the period of slavery, segregation, sharecropping and the modern era. Their contributions had and continue to have an impact on the economy of the United States, and the convenience, education, health, safety, security, and welfare of its citizens. These contributors improved the economic well-being of individuals and groups of individuals. They saved lives, improved the health of people, alleviated much pain and suffering, and raised the levels of education and knowledge. The activities and deeds of George Washington Carver, Ernest Everett Just, Percy Lavon Julian, and Charles Richard Drew, who are arguably the greatest of the African American scientists and who have made great contributions, exemplify these characteristics. Some of their research,
creations, and contributions will have an influence—at home and abroad—well into the future.

**Patient Rights: Ethical Perspectives, Emerging Developments and Global Challenges**

*Jenna Pope*

In series: *Ethical Issues in the 21st Century*


Hardcover: 978-1-63482-136-0. $110.00.  

In the past 50 years, ethical concerns concerning human experimentation have arisen with the advancement of new medical research and technology. While the benefits of human experimentation are well known in the fields of biology, psychology, sociology, and medicine, the conditions of human subject research have been persistently controversial. This book discusses ethical perspectives, emerging developments and global challenged of patient rights. Topics include effective medical informed consent; rights to health and dental care; the ethics of HIV screening targeted to the seriously mentally ill; and problems in ethics for medical publication.

**MIDDLE EAST**

**Encyclopedia of the Middle East (4 Volume Set)**

*George M. Ramirez*

In series: *Politics and Economics of the Middle East*


e-book: 978-1-63482-756-0. $1495.00.  

This encyclopedia presents important research on the Middle East. Some of the topics discussed herein include Iran's ballistic missile and space launch programs; Iran sanctions; politics, governance, and human rights in Iraq; the Israel-Hezbollah conflict; reform, security and U.S. policies of Bahrain, Iran, Iraq, Kuwait, Israel, Jordan, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, The United Arab Emirates, and Yemen; and security, and U.S. trade and investment in the Middle East and North Africa.

**Encyclopedia of Turkey**

*Dennis Rivera*

In series: *Politics and Economics of the Middle East*


This encyclopedia presents important research on Turkey. Some of the topics discussed herein include the prospects and challenges involved in Turkey and United States defense cooperation; Turkey-Kurdish regional government relations after the U.S. withdrawal from Iraq; Turkey's new regional security role's implications for the U.S.; and Turkey's background and relations with the United States.

**Qatar: Conditions, Issues, and U.S. Relations**

*Donald Sullivan*

In series: *Politics and Economics of the Middle East*


Hardcover: 978-1-63482-010-3. $120.00.  
e-book: 978-1-63482-046-2. $120.00.  

Qatar, a small peninsular country in the Persian Gulf, emerged as a partner of the United States in the mid-1990s and currently serves as host to major U.S. military facilities. Qatar holds the third largest proven natural gas reserves in the world, and is the largest exporter of liquefied natural gas. Its small citizenry enjoys the world’s highest per capita income. Since the mid-1990s, Qatari leaders have overseen a course of major economic growth, increased diplomatic engagement, and limited political liberalization. This book discusses the conditions of Qatar, as well as the issues and its relations with the United States.

**MILITARY**

**Alleviating Stress of the Soldier and Civilian**

*Sushil K. Sharma (Saint James School of Medicine, Kalendijk, Bonaire, Dutch Caribbean)*

In series: *Military and Veteran Issues*


Hardcover: 978-1-63483-098-0. $230.00.  

Initially, the author intended to write a book entitled “Alleviating Stress of the Soldier”. However, after going through the extensive literature and recalling his childhood memories of war times, he decided to write “Alleviating Stress of the Soldier and Civilian”. Sufficient historical evidence indicates that both soldiers as well as civilians have faced the war and tolerated its deleterious consequences simultaneously. However, a soldier and his/her family face unexpected and unpredictable stresses requiring: physical and mental fitness, character, dedication, commitment, communication, mutual understanding, adjustment, discipline, tolerance, patience, isolation, resilience, hyper-vigilance, minimum vulnerability, sanitation, nutritional stress, sleep deprivation, patriotism, and sacrifice. This book (i) confers basic knowledge of diversified stresses; (ii) prepares readers to face stresses with patience, endurance, and resilience; (iii) and presents novel strategies of alleviating physical, psychological, and physiological stresses of war-wounded soldiers, prisoners of war (POWs), and veterans. The book guides the soldiers of the Army, Navy, Air Force, SEALS (sea, air, and land), POWs, and civilians to handle their professional and family stresses without having to suffer from Combat Stress Reaction (CSR) or Post-Traumatic Stress Disorder (PTSD) before, during, and/or after the war or conflict. It also guides those who experienced early childhood neglect, physical and/or sexual abuse, and other stresses of diversified origin. It is envisaged that this timely released book will be particularly of great interest to the soldier’s family members, their spouses, children, parents, relatives, and friends because of its motivational messages, immediate demand, and versatility. The author hopes that this unique manuscript will encourage, motivate, excite, and guide young soldiers, civilians, and their families to tackle stresses with courage, patience, and resilience to successfully accomplish their trainings, adventurous professional career, and married life.

**Major Depressive Disorder in Veterans: Antidepressant Use and Suicide Prevention**

*Casey P. Barton*

In series: *Military and Veteran Issues*


Softcover: 978-1-63482-561-0. $62.00.  

In 2013, the Department of Veterans Affairs (VA) estimated that about 1.5 million veterans required mental health care, including services for Major Depressive Disorder (MDD). MDD is a debilitating mental illness related to reduced quality of life and productivity, and increased risk for suicide. VA also plays a role in suicide prevention. This book begins with a brief overview of the public health framework for suicide prevention, which forms the basis for both the National Strategy for Suicide Prevention and the VA’s approach to suicide prevention. The book discusses suicide surveillance; suicide risk factors and protective factors; suicide prevention interventions; potential issues for Congress; VA’s data on veterans with MDD, including those prescribed an antidepressant; the extent that veterans with MDD who are prescribed antidepressants receive recommended care and the extent to which VA
monitors such care; and the quality of data VA requires VAMCs to collect on veteran suicides.

**Navy Submarines: Overview of Virginia and Ohio Class Programs**  
*Terry Coleman*  
In series: *Military and Veteran Issues*  
2015. 95 pp.  
Softcover: 978-1-63483-236-6. $62.00.  

The U.S. Navy operates three types of submarines—nuclear-powered ballistic missile submarines (SSBNs), nuclear-powered cruise missile and special operations forces (SOF) submarines (SSGNs), and nuclear-powered attack submarines (SSNs). This book provides background information and issues for Congress on the Virginia-class SSN program. The Navy’s proposed FY2016 budget requests $5.340.1 million in procurement, advance procurement (AP), and Economic Order Quantity (EOQ) funding for the program. Decisions that Congress makes on procurement of Virginia-class boats could substantially affect U.S. Navy capabilities and funding requirements, and the U.S. shipbuilding industrial base. Furthermore, this book provides background information and potential oversight issues for Congress on the Ohio replacement program (ORP), a program to design and build a new class of 12 ballistic missile submarines (SSBNs) to replace the Navy’s current force of 14 Ohio-class SSBNs. The Ohio replacement program is also known as the SSBN(X) program. The Navy wants to procure the first Ohio replacement boat in FY2021, with advance procurement (AP) funding starting in FY2017. The Navy has identified the Ohio replacement program as its top priority program.

**Servicemembers Separated for Non-Disability Mental Conditions: A Review**  
*Scott Norton*  
In series: *Military and Veteran Issues*  
2015. 72 pp.  
Softcover: 978-1-63483-078-2. $62.00.  

Non-disability mental conditions, such as personality disorders, can render a service member unsuitable for military service and can lead to an administrative separation. This book examines the extent to which the Department of Defense (DOD) and the military services are able to identify the number of enlisted service members separated for non-disability mental conditions, and the military services are complying with DOD requirements when separating enlisted service members for non-disability mental conditions, including personality disorders, and how DOD and the military services oversee such separations.

**Sexual Assaults of Male Military Personnel**  
*Henrietta Moore*  
In series: *Military and Veteran Issues*  
Softcover: 978-1-63483-564-0. $62.00.  

Females have long been viewed as the primary victims of sexual assault but, based on survey data, RAND estimated that in 2014, about 9,000 to about 13,000 male servicemembers were sexually assaulted. This book addresses the extent to which DOD has taken actions to prevent and respond to sexual assaults of male servicemembers; DOD’s sexual assault prevention and response program is meeting the medical and mental health-care needs of male servicemembers; and the culture of the U.S. military poses distinct challenges for preventing and responding to sexual assaults of male servicemembers.

**The Army Force Mix: Issues and Considerations for Active and Reserve Components**  
*Shannon V. Turner*  
In series: *Military and Veteran Issues*  
2015. 192 pp.  
Hardcover: 978-1-63482-178-0. $185.00.  

The Army is composed of both an Active Component (AC) and a Reserve Component (RC). The AC consists of soldiers who are in the Army as their full-time occupation. The RC is composed primarily of soldiers who serve part-time but who can be ordered to full-time duty. The Army’s RC is made up of both the Army National Guard (ARNG) and the United States Army Reserve (USAR). AC/RC force mix refers to the distribution of units between the active and reserve components of the armed forces. This book discusses the AC/RC force mix, as well as the unit cost and readiness for the AC and RC.

**U.S. Geological Survey Roadmap for Unmanned Aircraft Systems**  
*Kathryn Miller*  
In series: *Military and Veteran Issues*  
Hardcover: 978-1-63483-566-4. $120.00.  
e-book: 978-1-63483-567-1. $120.00.

The U.S. Department of the Interior (DOI) is responsible for protecting the natural resources and heritage contained on almost 20 percent of the land in the United States. This responsibility requires acquisition of remotely sensed data throughout vast lands, including areas that are remote and potentially dangerous to access. One promising new technology for data collection is unmanned aircraft systems (UAS), which may be better suited (achieving superior science, safety, and savings) than traditional methods. UAS, regardless of their size, have the same operational components: aircraft, payloads, communications unit, and operator control unit. This book provides operational procedures and lessons learned from completed proof-of-concept UAS missions in areas such as wildlife management, resource monitoring, and public land inspections. This information provides not only an implementation framework but can also help increase the awareness by resource managers, scientists, and others of the ability of UAS technology to advance data quality, improve personnel safety, and reduce data acquisition costs.

**U.S. Navy Force Structure and Forward Presence Overseas: Plans and Considerations**  
*Agnes S. Jennings*  
In series: *Military and Veteran Issues*  
Hardcover: 978-1-63482-939-7. $185.00.  

This book provides background information and presents potential issues for Congress concerning the Navy’s ship force-structure goals and shipbuilding plans. The planned size of the Navy, the rate of Navy ship procurement, and the prospective affordability of the Navy’s shipbuilding plans have been matters of concern for the congressional defense committees for the past several years. Decisions that Congress makes on Navy shipbuilding programs can substantially affect Navy capabilities and funding requirements, and the U.S. shipbuilding industrial base. Moreover, in support of its mission to deter conflict or fight in wars if necessary, the Navy considers it a core responsibility to maintain a forward presence—to keep some of its fleet far from U.S. shores at all times in areas that are important to national interests. This book discusses the Navy’s future presence with smaller fleet, as well as provides an analysis of the Navy’s fiscal year 2015 shipbuilding plan. Finally, it examines the long-term effect if crew rotation on forward presence.
Music and Hearing
K. Rajalakshmi (Department of Audiology, All India Institute of Speech & Hearing, Manasangothri, Mysore, Karnataka, India)
In series: Fine Arts, Music and Literature
Hardcover: 978-1-63463-621-6, $95.00.
India is a country with a huge diversity in culture and language. Indian music is one of the oldest types of music and is rich in its content and variation. Researching any one variety of music or mastering it is a lifetime task. It is very interesting to study and understand how music learning facilitates the enhanced auditory processing in musicians. A musician's brain is distinctly different from that of non-musicians. The differences are due to the way they have acquired their music skills. A music environment enhances auditory processing and hearing. The topics covered will include how musical sounds are coded by the ear. Hearing is one of the important senses which builds bridges between what we hear and how we speak. Hearing plays a vital role in learning and performing music. Musicians spend a lot of time fine tuning their musical skills through hearing. If this training begins at an early age, their auditory processing gets enhanced owing to the fact that their listening training is continuously becoming complex with every new lesson in music. There are plenty of studies and research on speech perception but the research on music perception and hearing in musicians is scarce. When it comes to the Indian context, the research on music and hearing is still in its infancy. Over the past few years, as a faculty in audiology, the author discovered that music perception, understanding the hearing sense of musicians, auditory processing in musicians and prolonged exposure to music will cause deterioration in hearing in musicians. This book will contribute a lot to the understanding of normal hearing behavior. With this notion in mind, different studies were taken up to understand how musicians are different from non-musicians. These studies have opened up a lot of avenues to study the auditory behavior of musicians. Consequently, the author has added valuable research in this single compilation for the benefit of beginners in the field of audiology, physics, music and other allied professionals interested in music and hearing.

Music Education and Perceptions
Eric Burgess
In series: Fine Arts, Music and Literature
Softcover: 978-1-63483-087-4, $82.00.
e-book: 978-1-63483-113-0, $82.00.
Many scientific studies confirm the positive effects of music education in prenatal and earliest phases of life on children's holistic development. In this book, the authors' examine how musical development and learning are established in the family environment and the effects of music on children's development. Other chapters examine musical and non-musical learning as a reflection of the internationalization of China's sociopolitical ideologies and the relative nationalism of its education system; the planning of musical objectives in the psychomotor domain; and a multicultural perspective of the "Orff-Schulwerk" music-movement approach, using it primarily as a possible means of expressing one's own sensations and recognizing the sensations of others.

Natural Disasters
Fukushima Nuclear Accident: Global Implications, Long-Term Health Effects and Ecological Consequences
Shizuyo Sutou, Ph.D., Mohan Doss, Ph.D. and Hiroshi Tanooka (Functional Genomics, School of Pharmacy, Shujitsu University, Nishigawara, Naka-ku, Okayama-shi, Okayama, Japan)
In series: Natural Disaster Research, Prediction and Mitigation
Hardcover: 978-1-63463-748-0, $170.00.
The magnitude 9.0 Great East Japan Earthquake occurred on March 11, 2011, claiming more than 20,000 lives. It crippled the Fukushima Daiichi Nuclear Power Plant, whose hydrogen-air explosions contaminated wide areas around Fukushima with radionuclides. The number of evacuees initially totaled 328,903, but has been reduced to 263,392 as of February 13, 2014. More than half of the evacuees (132,500) consist of Fukushima residents, and 67% of whom have experienced mental or physical disorders. Indeed, refugee life is so difficult that many Fukushima families have been affected by suicide, divorce, separation of family members, migration and settlement to other places, mental illness, etc. The difficulty is caused by the fear of low-dose radiation induced by the LNT model which claims that radiation cancer risk is linearly proportional to dose without any threshold. Careful scrutiny of the model, however, clearly indicates that the linearity is invalid; low dose radiation is not hazardous, but is even beneficial or hormetic because of the adaptive response to radiation. This book provides ample evidence to negate the LNT model. This book is primarily compiled to get rid of the spell of the LNT model and release Fukushima people from undue torture. The book would also be useful to the public in general who have CT scans and have concerns. In addition, the people who use radiation worldwide such as nuclear power plant workers, radiation researchers, radiologists, and X-ray operators would be relieved to learn from reading this book that the alleged risk of low-dose radiation is illusionary and that the low-dose radiation is even beneficial. Policy makers of nuclear energy and radiation who are working for governmental and/or regulatory agencies are also recommended to read this book. Severe guidelines from a safety standpoint sometimes entraps people into a fear-stricken situation rather than save them, as no one was killed by radiation directly, but more than 1,000 people have been killed by the fear of radiation secondarily in Fukushima. By the same token, this book is recommended to civil activists and journalists who emphasize dangers of low-dose radiation and raise fear of low-dose radiation. It is the time to shed new scientific light on the outdated LNT model.

Hurricane Sandy Disaster Relief: Select Assessments
Edward S. Ramirez
In series: Natural Disaster Research, Prediction and Mitigation
Hardcover: 978-1-63463-174-2, $120.00.
e-book: 978-1-63482-175-9, $120.00.
Hurricane Sandy struck the United States in October 2012, causing an estimated $65 billion in damages. FEMA provides assistance to survivors through IHP and other programs. Part of its mission is to provide assistance quickly, but the United States Government Accountability Office (GAO) previously identified weaknesses in FEMA’s ability to do so while protecting government resources. Moreover, GAO’s 2006 reports on Hurricane Katrina and Rita showed that FEMA did not consistently validate the identity of applicants or
Risk Assessment for Nuclear Power Plants against Natural Disasters: Probability Prediction and Disaster Prevention Infrastructures

Liu Defu, Shi Hongda, Liu Guilin and Wang Fengqing (Ocean University of China, Qingdao, China)

In series: Natural Disaster Research, Prediction and Mitigation

In China, a lot of Nuclear Power Plants (NPP) are in the stages of planning, design, or construction. Thus it is necessary to do a comprehensive research on design standards for protective engineering and structural technology of the NPP based on the world’s highest safety requirements. This book discusses the joint probability analysis of meteorological, oceanographic and hydrological hazards based on various distribution models.

Volcanic Eruptions: Triggers, Role of Climate Change and Environmental Effects

Trent Milburn

In series: Natural Disaster Research, Prediction and Mitigation
Hardcover: 978-1-63463-308-6. $110.00.

Natural catastrophic events such as volcano eruptions have greatly affected environments in wide regions around the world. Ash and gases impelled by these eruptions into the atmosphere carry large volumes of particles of different sizes (nanometer and ultrafine) that are scattered around the earth. However, the greater accumulation of different grain size was observed in the range of 10 kilometers from the center of the volcano, causing devastating effect. The most important consequences of this type of event are loss of habitats for flora and fauna. This book discusses the triggers of volcanic eruptions, as well as environmental effects and the role they play in climate change.

Dietary Fiber: Production Challenges, Food Sources and Health Benefits

Marvin E. Clemens

In series: Nutrition and Diet Research Progress
2015. 204 pp.
Hardcover: 978-1-63463-655-1. $190.00.

Dietary fibers are classified into water soluble or insoluble, and most plant foods include in their composition variable amounts of a mixture of soluble and insoluble fibers. This soluble or insoluble nature of fiber is related to its physiological effects. Insoluble fibers are characterized by high porosity, low density and the ability to increase fecal bulk, and act by facilitating intestinal transit, thus reducing the exposure to carcinogens in the colon and therefore acting as protectors against colon cancer. The influence of soluble fiber in the digestive tract includes its ability to retain water and form gels as well as a role as a substrate for fermentation of colon bacteria. This book discusses the production challenges, food sources and health benefits of dietary fiber.
Pomegranates: Old Age Remedy for Today’s Diseases
Nady Braidy (UNSW Medicine, School of Psychiatry NPI, Euroa Centre, NSW, Australia)
In series: Food and Beverage Consumption and Health
Hardcover: 978-1-63463-456-4, $95.00.
Pomegranate is a natural plant product which has demonstrated a multitude of beneficial health benefits. Current in vitro and in vivo research have shown that this age-old fruit is composed of natural polyphenolic phytochemicals which exhibit diverse pharmacological potency and potent antioxidant, anti-inflammatory, and antimicrobial/antiviral properties. Pomegranates are also being considered as a cancer chemo-preventive and neuroprotective agents. This book describes the implications of pomegranate consumption for the management and treatment of an array of cardiovascular diseases, cancers, and neurodegenerative disorders. New cultivation techniques to improve pomegranate production are also discussed.

Protein Diets: Nutritional Sources, Health Benefits and Intake Recommendations
Meaghan Hudson
In series: Nutrition and Diet Research Progress
Hardcover: 978-1-63463-498-4, $110.00.
Protein is an essential macronutrient in the human diet. In addition to providing essential amino acids to the body, protein has also been linked to inducing the feeling of fullness and satiety. Different sources of protein are traditionally used in the human diet and offer varying amino acid composition. This book discusses the nutritional sources of protein, as well as its health benefits and intake recommendations.

PHYSICAL SCIENCE

U.S. Assistance to Egypt: Background and Evolution
Marian Cortez
In series: Politics and Economics of the Middle East
2015. 130 pp.
Hardcover: 978-1-63483-376-9, $120.00.
e-book: 978-1-63483-377-6, $120.00.
The United States has provided significant military and economic assistance to Egypt since the late 1970s. U.S. policy makers have routinely explained aid to Egypt as an investment in regional stability, built primarily on long-running cooperation with the Egyptian military and on sustaining the 1979 Egyptian-Israeli peace treaty. U.S. policy makers are now debating complex questions about the future of U.S.-Egypt relations, and these debates and events in Egypt are shaping consideration of appropriations and authorization legislation in the 114th Congress. This book provides an overview of the key issues for Congress related to Egypt and U.S. foreign aid to Egypt.

POLITICAL SCIENCE

A Difficult World: Examining the Roots of Capitalism
Maximiliano Korstanje (University of Palermo, Argentina)
In series: Government Procedures and Operations
Hardcover: 978-1-63483-331-8, $190.00.
e-book: 978-1-63483-452-0, $190.00.
In this book, Maximiliano Korstanje explores the dichotomies of capitalism, continuing the legacy of Max Weber, Ulrich Beck, Richard Hofstadter and Giorgio Agamben. Undoubtedly, we are living in trying times, which merits reconsidering the current conception of sociological theories. From disasters to terrorism, Occident seems to be trapped in an illusory landscape where risk plays a crucial role in the configuration of a new tragic ethos. Although Weber did the correct thing in pointing out that predestination was a key factor in the capitalist genesis, he ignored the influence of Norse culture, which was already rooted in the thinking of Luther and Calvino. Whether in the battleground, Greeks and Romans were subject to an overt destiny which depended on individual actions (sacrifice) Norse mythology, on the other hand, offered the opposite context. The Valkyrias, Odin’s daughters, knew in advance who would be the fallen warriors (predestination). Complementary to what has been written, Korstanje established a new innovative thesis that explains why Anglo-Saxon culture was not only prone to develop a globalized capitalist system of production, but also prone to risk-perception. Combining a closed-conception of future (predestination) with a sentiment of exceptionalism given by the Reform, the US logically constructed a world of preemption that led to the dilemma of “preventive attack”. The role of government in posing threats to control the internal workforce, as well as how the principle of exception triggers fear, are fascinating themes discussed in this text.

Identity Theft Tax Refund Fraud: Challenges and Reduction Efforts
Lucas Haynes
In series: American Political, Economic, and Security Issues
Hardcover: 978-1-63482-602-0, $120.00.
e-book: 978-1-63482-603-7, $120.00.
Identity theft tax refund fraud is a persistent, evolving threat to honest taxpayers and tax administration. It occurs when an identity thief files a fraudulent tax return using a legitimate taxpayer’s identifying information and claims a refund. This book examines what IRS knows about the extent of IDT refund fraud and additional actions IRS can take to combat IDT refund fraud using third-party information from, for example, employers and financial institutions. The book also assesses the quality of IRS’s IDT refund fraud cost estimates, and IRS’s progress in developing processes to enhance taxpayer authentication.

International Emergency Food Aid: Prepositioning and Procurement by the U.S
Jonathan Meyers
In series: Government Procedures and Operations
Hardcover: 978-1-63482-259-6, $120.00.
The U.S. Agency for International Development (USAID) reduces the costs of the food aid; and the extent to which the agency monitors prepositioning to maximize time savings and cost effectiveness.

Spectrum Management and Policy in the U.S.: Emerging Issues
Wanda Flores
In series: Government Procedures and Operations
The Middle Class Tax Relief and Job Creation Act of 2012 contained provisions in Title VI that expedite the availability of spectrum for commercial mobile broadband. The provisions in Title VI—also known as the Public Safety and Spectrum Act, or the Spectrum Act—cover reallocation of spectrum, new assignments of spectrum rights, and changes in procedures for repurposing spectrum used by the federal government. This book discusses emerging issues in the spectrum management and policies in the United States.

The Politics of Cooperation and Co-ops: Forms of Cooperation and Co-ops, and the Politics that Shape them

Carl Ratner, Ph.D. (Director, Institute for Cultural Research & Education, Trinidad, CA, USA)

In series: Capitalism, Counter-Capitalism, and Psychology

Edited by: Carl Ratner (Institute for Cultural Research & Education)


The current co-op movement in the U.S. seeks to be a structural alternative to capitalism; this book seriously questions whether the current movement can accomplish that task. Carl Ratner offers a rich and unique political analysis and critique that provides helpful insights into the practice and problems of the contemporary cooperative movement. Noting that cooperators tend to view their work as apolitical because the explicit influence of national political parties is absent, the author constructs a compelling argument that cooperators nonetheless operate unwittingly with implicit political conceptions of freedom, opportunity, human rights, social participation, decision-making, power, and governance that are shaped and limited by the capitalist economic system. Ratner demonstrates how a more radical, anti-capitalist, socialist form of cooperation and co-ops are needed to realize the fulfilling potential of cooperation and co-ops. For those wishing to understand and advance the cooperative movement, this book is essential reading.

U.S. Foreign Labor Recruitment: Trends and Worker Protection Issues

Josiah Salazar

In series: American Political, Economic, and Security Issues

Hardcover: 978-1-63483-378-3. $120.00.
e-book: 978-1-63483-379-0. $120.00.

Tens of thousands of foreign nationals travel to the United States each year under the H-2A (agricultural) and H-2B (non-agricultural) visa programs. These programs are designed to fill a temporary need that U.S. workers are unavailable to fill. Employers may use third parties to recruit these workers and recruitment generally takes place outside the United States with limited federal oversight. This book examines the number of H-2A and H-2B workers who enter the country and the occupations they fill; how U.S. employers recruit H-2A and H-2B workers and what abuse may occur in recruitment and employment; and how well federal departments and agencies protect H-2A and H-2B workers. Furthermore, the book discusses the DOL labor certification/attestation and Department of Homeland Security (DHS) petition process as well as aspects of the applicability of federal labor laws to foreign workers. It also addresses state and local laws regarding labor, contract, and torts that sometimes provide foreign workers with additional rights.

PREGNANCY

A Darwinian Guide to Parenting: Having a Baby

Lincoln G. Craton and Sharon Ramos-Goyette (Stonehill College, Bridgewater State University, Easton, MA, USA)

In series: Pregnancy and Infants: Medical, Psychological and Social Issues

Hardcover: 978-1-63482-066-0. $110.00.

Did you ever wonder... • When is the “best” time to have a baby? • Why isn’t getting pregnant easier? • Why do pregnant women find good food nauseating, but usually only in the first trimester? • What’s the “normal” amount of weight to gain during pregnancy? • Why do so many women experience heartbreaking miscarriages? If only we knew the answers to these questions, we might be able to figure out ways to make the process of starting a family easier and more fulfilling. And now we can. The key, as developmental psychologist Lin Craton and biologist Sharon Ramos-Goyette explain, is to understand how nature has designed babies and their growups. Short, fun, and packed with eye-opening information, this book offers a fresh look at the everyday challenges of conceiving, carrying, birthing, and nurturing a baby.

Drawing broadly on recent work in evolutionary science and developmental psychology to describe the evolution of family life, Craton and Ramos-Goyette show parents why having a baby is the way it is. With humor and compassion, they illustrate how to use this knowledge to rise above the challenges and become a better, happier parent-to-be. Straight from the hearts and minds of two scientist/parents who have been there, this book describes in simple language the practical wisdom that comes from an evolutionary view of family living. Different in important ways from “natural family living” and “attachment parenting” approaches, this view is full of surprising new insights that will help you make the parenting choices that work for you. Whether you have already taken the parenting plunge or are preparing to do so, you’ll be astounded and enlightened by this book.

PRESIDENCY

Interviews with Professor Donald Elder: The Presidents of the United States

Michael F. Shaughnessy and Donald Elder (Eastern New Mexico University, Portales, New Mexico, US)

In series: Political Leaders and Their Assessment

Hardcover: 978-1-63321-923-6. $190.00.

For citizens of the United States, for social studies teachers, for historians in America, and literally around the world, there is no more interesting topic than leadership, and leadership as seen in the President of the United States. Worldwide, no other individual is as scrutinized, as examined as the President of the USA. The Presidency has obviously a long history dated back to 1776 and George Washington, and out leaders have provided the guidance to lead us through the War of 1812, the Spanish American War, the Civil War, World War I and II and various other undeclared conflicts and difficulties around the world. The personalities and contributions of our Presidents have been exceptional. Some of our Presidents have led us in times of peace, and others during times of war. Some have excelled nationally, others internationally. Some have provided sustenance and nurturance, and others vim, vigor, and vitality during difficult times. Each President has left an indelible mark on American history and should be recognized.
This book attempts to provide a stellar overview of each President and recognize their contributions, strengths, weaknesses as well as their faults. This is a book that will provide keen robust insights into the men who have led our nation.

James A. Garfield: Leading America from Frontier to Empire
Barbara Bennett Peterson (University of Hawaii, Tigard, Oregon, USA)

In series: First Men, America’s Presidents
Edited by: Peterson, Barbara Bennett (Oregon State University, USA)


The Age of President Garfield was an exciting age as it featured the music of John Philip Sousa’s marching bands, the new dime novels, captains of industry such as John D. Rockefeller, legendary cowboys of the Old West, the Indian Wars, and the expansion of America’s interest in empire building abroad. James A. Garfield rose from birth in a log cabin in Ohio, to work as a canal boy, earned an education at Ceauga Academy, Western Reserve Eclectic Institute, and graduated from Williams College in 1856. He became president of Western Reserve in 1857, studied law, married Lucretia Randolph, and was elected to the Ohio Senate in 1859. During the Civil War, he became a hero, earned the rank of Major General and assisted General William S. Rosecrans as his Chief of Staff. Elected to the U.S. House of Representatives in 1862, he was a Radical Republican seeking to redeem the South and protect the freedmen. Selected for the U.S. Senate in 1880, then nominated for the U.S. Presidency in Chicago also in 1880, he won the election and became the 20th U.S. President with Chester A. Arthur as his Vice President. This book is a rich tapestry filled with characters, events, institutions, and causes dominating the era. Roscoe Conkling, James G. Blaine, Andrew Carnegie, King Kalakaua of Hawaii, Queen Victoria, and Gilbert and Sullivan are a few of the parallel characters, and the creation of the United States Geological Survey, expansion of the Smithsonian and the Library of Congress, and the American chapter of the Red Cross are some of the enduring legacies. Garfield’s era saw the invention of the Bessemer steel process and the Otis elevator, the coming of the street trolley and gas lighting, immigrants pouring into Industrializing America and the formation of workers’ unions. Garfield’s presidency was at the height of the Gilded Age, one of the most fascinating moments in all of American history. This book must be read to understand how America moved from frontier to empire. A sophisticated and nuanced treatment of President James A. Garfield.

Proposals for Presidential Election Reform: National Popular Vote and Electoral College Options
Maureen Stone

In series: Government Procedures and Operations
Hardcover: 978-1-63482-913-5. $120.00.
e-book: 978-1-63482-934-2. $120.00.

The National Popular Vote (NPV) initiative proposes an agreement among the states, an interstate compact that would effectively achieve direct popular election of the President and Vice President without a constitutional amendment. This book monitors the NPV’s progress in the states and identifies and provides an analysis of further developments as warranted. When Americans vote for President and Vice President, they are actually choosing presidential electors, known collectively as the Electoral College. It is these officials who choose the President and Vice President of the United States. The complex elements comprising the Electoral College system are responsible for one of the most important processes of the American political and constitutional system: election of the President and Vice President. A failure to elect, or worse, the choice of a chief executive whose legitimacy might be open to question, could precipitate a profound constitutional crisis that would require prompt, judicious, and well-informed action by Congress. This book discusses the contemporary issues for Congress and how the Electoral College works in contemporary presidential elections.

Ulysses S. Grant: In The Interests of the Whole People
Thomas J. Rowland (Department of History, University of Wisconsin-Oshkosh, Oshkosh, WI, USA)

In series: First Men, America’s Presidents
Edited by: Peterson, Barbara Bennett (Oregon State University, USA)

Hardcover: 978-1-63463-978-1. $170.00.

History generally has not been kind to Ulysses Grant. For the longest time, even his military reputation had been sullied by the stinging indictments of Lost Cause advocates who enjoyed un questioned sway over the popular interpretation of Civil War history. The apotheosis of Robert E. Lee’s role in the war required the diminishment of Grant’s reputation. Fortunately, this impression has been convincingly reversed and Grant is now hailed as the proper savior of the Union. The same reversal cannot be said of interpretations of Ulysses S. Grant, the President. Until recently, Grant has been pilloried as a hopelessly naïve, bumbling incompetent who was way over his head in the political arena. The combined forces of self-styled reformers of his own day and the criticism of Lost Cause devotees consigned Grant to the ranks of America’s worst presidents. In the popular imagination, as reflected in ongoing surveys, polls, and rankings, Grant still suffers from a poor evaluation. Only in the last generation of historians have we begun to revisit the Grant presidency and suggest that he may well have been a very capable and strong president; one who was inspired by noble sentiments and aspirations that simply were not attainable in his own time. This study continues in the revisionist tradition to suggest that Grant was an excellent chief executive even though much of what he strove to accomplish was not realized in his time.

Psychology and Psychiatry
A Primer for Swimming Coaches, Volume 1: Physiological Foundations
Ernest W. Maglischo, Ph.D. (Retired Swim Coach, Prescott, AZ, USA)

In series: Sports and Athletics Preparation, Performance, and Psychology
Hardcover: 978-1-63483-218-2. $270.00.

It has been 12 years since the author published the 3rd edition of the Swimming Faster series and time has not stood still. Research has continued at a rapid pace, using increasingly sophisticated methodology to improve our knowledge of the training process. In this book, the author shares what he learned with members of the competitive swimming community throughout the world. The title of this book was changed to reflect his purpose in writing it. It is a source for coaches and athletes to improve their knowledge of the scientific aspects of training. It should also help readers become familiar with the sometimes confusing terms used by sports scientists so they can read the results of their studies with understanding. Furthermore, this book informs the readers’ enough in the areas of physiology, biochemistry
and molecular biology as they pertain to the training of athletes. It is the author’s hope that they will be able to evaluate the validity of that research and decide for themselves if it has merit. Finally, this book provides the readers’ with the knowledge to apply the information they gain to their own unique training environments. This is so they will not have to copy the training of successful coaches without understanding why it was beneficial and how it might be modified to become even more useful within their surroundings.

ADHD – Variability Between Mind and Body
Radek Ptacek, Ph.D. and Hana Kuzelova
(Department of Psychiatry First Faculty of Medicine Charles University in Prague and General University Hospital in Prague; Department of Psychology, University of New York in Prague)

In series: Psychiatry - Theory, Applications and Treatments
2015. 146 pp.
Hardcover: 978-1-63321-449-1. $95.00.
e-book: 978-1-63463-863-0. $95.00.
Attention Deficit Hyperactivity Disorder (ADHD) has been considered as one of the most frequently diagnosed psychiatric disorders in children and adolescents. Nowadays it is becoming among one of the most common lifelong psychiatric disorders. Although ADHD symptoms are clearly defined by DSM 5, it influences the life of each person in many different and variable ways. ADHD is not a single phenomenon with simple causes and simple manifestations. One of the main characteristics of ADHD is variability. Variability in etiology, genetics, biology of the disorder, symptomatology and especially real life manifestation. To understand ADHD means to understand its high variability that is one of the most typical signs of this diagnosis. The present book approaches ADHD from the perspective of its variability. It reviews the variability of ADHD from etiology through somatic and neurobiological causes and manifestations to psychological and social context. The book provides a review of the variability of the diagnoses also in very specific areas such as in the somatic development of ADHD children. The aim of this book is to provide an overview of the variability of ADHD for professionals in the broad area of mental health as well as for related professions. The book is a great source for clinical as well as research workers.

Advances in Psychology Research. Volume 101
Alexandra M. Columbus

In series: Advances in Psychology Research
2015. 147 pp.
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 serial killers who murder women; an examination of belief in myths of popular psychology among university students; a model of the use-it-or-lose-it theory; a comparison of children’s and teachers’ reports on predictive factors of depressive symptomology in school-age children; the implications for performance and health of emotional intelligence training; positive psychological viewpoints for successful leadership; the poetics of melancholy in Dijana Barnes’s Nightwood; and social anxiety and hyperhidrosis.

Advances in Psychology Research. Volume 102
Alexandra M. Columbus

In series: Advances in Psychology Research
e-book: 978-1-63482-110-0. $160.00.
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 behavior modification for the obese person with depression; mental health and therapy in contemporary china; intensive behavioral therapy for the treatment of obesity; a post-Jungian personality theory; Kolb’s experiential learning theory revisited; impulsivity and reactive aggressiveness; supporting students from divorced families; appraisals and control strategies for intrusive thoughts of failure, dirt, and aggression; exploration of the belief bias in transitive inference; and aggression and impulsivity in suicidal behavior.

Advances in Psychology Research. Volume 103
Alexandra M. Columbus

In series: Advances in Psychology Research
Hardcover: 978-1-63482-357-9. $190.00.
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 convergence of subjective and objective methodologies in consciousness research; childhood maltreatment predictors of trait impulsivity; discusses how self-control and materialism influence excessive spending; the role of sport and physical activity in promoting the psychosocial well-being of military personnel with disabilities; technological and psychological principles and platform success for complex systems; a review of excessive infant crying; evaluation of perinatal and pediatric risk factors for the development of schizophrenia; and the impacts of divorce on children and adolescents.

Advances in Psychology Research. Volume 104
Alexandra M. Columbus

In series: Advances in Psychology Research
Hardcover: 978-1-63482-410-1. $190.00.
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 the relationship between sleep quality and social media and mobile phone use; personality predictors of driver space preference; the perception of illness and social supports as predictors of self-esteem; development delays and temperament in children with leukemia after the first year of therapy; cognitive deficits after electroconvulsive therapy; the psychodynamics of nursing work; the relationship between assertiveness, anxiety and risk-taking attitudes among Chinese university students; and finally, examines the happy science doctrine and the theoretical and theological base for prayer-based health interventions.

Advances in Psychology Research. Volume 105
Alexandra M. Columbus

In series: Advances in Psychology Research
Hardcover: 978-1-63482-457-6. $190.00.
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coping strategies between nursing students and business students in the United States; personality change and problem behavior; the concentric interactive psychotherapy group; cognitive flexibility, worry, and generalized anxiety disorder symptoms; relations among sadness, pain, social support and college students' health; the responsiveness of negative cognitive content to an induced negative mood state in those with and without a previous history of depression; health and gender medicine from a psychosocial perspective; another perspective for discussing students' understanding of mathematics; and stress among engineering students.

Advances in Psychology Research. Volume 106
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Advances in Psychology Research. Volume 107
Alexandra M. Columbus
In series: Advances in Psychology Research
2015. 204 pp.
Hardcover: 978-1-63482-459-0. $190.00.
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 the interpersonal functions of emotions; physical and social anhedonia traits; psychological predictors, neural mechanisms and clinical treatment options of anhedonia; a school-wide approach to preventing childhood anxiety; vitamins and minerals as alternative or complementary therapies in depression; self-assessed intelligence and self-reported personality; a critical engagement with social psychological contributions to modifying the health of people and the planet; psychomotor and dopaminergic bipolarity in unipolar depression: experimental findings, conceptual analysis and implications for treatment strategies; and developing an improved reporting system for human rights violations of persons with psychosocial and intellectual disabilities in South Africa.

Advances in Psychology Research. Volume 108
Alexandra M. Columbus
In series: Advances in Psychology Research
Hardcover: 978-1-63482-460-6. $190.00.
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 re-exploring the gender gap in mathematics; effects of motivation and gender on prospective memory strategy use; the development of autonomy and relatedness across cultures; anxiety and affect in racially unmatched dyads during evaluation and assessment; high risk juveniles; the role of impulsivity in patients with major affective disorders; social-communication and behavioral problems in down syndrome; revised version of the body esteem scale; psychometric evidence from Brazilian men; types of emotional intelligence; and identity management within culture.

Advances in Psychology Research. Volume 109
Alexandra M. Columbus
In series: Advances in Psychology Research
Hardcover: 978-1-63482-546-7. $190.00.
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 the observed score versus Rasch score analysis of efficacy data; interpersonal orientation and online gaming behaviors; consumer purchase behavior of private labels brands in emerging markets; the role of health professionals in positive aging; impulsivity in youth; body experience as the core of body image development; impulsivity in patients with borderline personality disorder; predicting psychological maladjustment by self-esteem and self-concept clarity; psychological health in elderly hospitalized patients with and without the STOPP-START criteria of inappropriate prescription; potential logarithmic relationships governing living systems and the perceptions of stimuli; how experience and information influence the choice behavior; and the recent psychological responses to Ebola.

Advances in Psychology Research. Volume 110
Alexandra M. Columbus
In series: Advances in Psychology Research
2015. 192 pp.
Hardcover: 978-1-63482-629-7. $190.00.
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 the parenting behavior, parental influence, and adolescents' risk behaviors in the perspective of cross-cultural perspective; interpersonal orientation and online gaming behaviors; consumer purchase behavior of private labels brands in emerging markets; the role of health professionals in positive aging; impulsivity in youth; body experience as the core of body image development; impulsivity in patients with borderline personality disorder; predicting psychological maladjustment by self-esteem and self-concept clarity; psychological health in elderly hospitalized patients with and without the STOPP-START criteria of inappropriate prescription; potential logarithmic relationships governing living systems and the perceptions of stimuli; how experience and information influence the choice behavior; and the recent psychological responses to Ebola.

Advances in Psychology Research. Volume 111
Alexandra M. Columbus
In series: Advances in Psychology Research
Hardcover: 978-1-63482-965-6. $190.00.
This book includes research on the most recent advances in psychology, including chapters on the stress and pain of female students or concerns of women seeking help after an abortion; factors that enhance or hinder help-seeking behaviors among male victims in IPV (intimate partner violence); a social psychological approach for users' motivation in being involved in social media; the role of Attentional Boost Effect (ABE) in short-term memory; the social, relational and individual aspects of well-being in both divorced parents and the children of the divorced; a literature review on the cultural influences on risky behaviors, in the perspective of cross-cultural psychology; an analysis of human errors, slips and mistakes, the relationship between human errors and accidents and how to reduce human error; couple identity processes in young adult romantic partners and an analysis of the role of family or origin for such processes; and the role of consciousness as an integral part of existence.
Advances in Psychology Research. Volume 112

Alessandra M. Columbus

In series: Advances in Psychology Research

2015. 192 pp.
Hardcover: 978-1-63483-382-0. $190.00.

This book focuses on the latest developments in psychology research. Chapters examine the role of implicit and explicit cognitions in romantic relationships; a discussion on the relationship between academic confidence with learning approaches, self-regulation, stress coping and resilience; basic science and current practices in sleep medicine, a popular medical specialty; a review of recent advances in research on context memory; the influence of gender and sense of coherence measured on patients with malignant tumors, as well as their experience of loneliness and the manner in which they coped with it; an evaluation of side effects profiles of light therapy (LT), used in treating mood disorders such as seasonal affective disorder and nonseasonal depression, across phototherapeutic devices, light spectrums, durations and illuminances; color categorization using Fuzzy Set Theory and a discussion on the gender differences in color categorization; an overview, recent considerations, implementation and criticisms of signal detection theory (SDT); and a discussion on theoretical orientation and whether it compromises objectivity in the interpretation of empirical data in the behavioral sciences.

Antipsychotic Drug Use Among Adults In Nursing Homes: Prevalence and Reduction Efforts

Dominick Foster

In series: Psychiatry - Theory, Applications and Treatments

2015. 96 pp.

Antipsychotic drugs are frequently prescribed to older adults with dementia. Dementia affects millions of older adults, causing behavioral symptoms such as mood changes, loss of communication, and agitation. Concerns have been raised about the use of antipsychotic drugs to address the behavioral symptoms of the disease, primarily due to the FDA’s boxed warning that these drugs may cause an increased risk of death when used by older adults with dementia and the drugs are not approved for this use. This book examines to what extent antipsychotic drugs are prescribed for older adults with dementia living inside and outside nursing homes; what is known from selected experts and published research about factors contributing to the such prescribing; and to what extent the Department of Health and Human Services (HHS) has taken action to reduce the use of antipsychotic drugs by older adults with dementia.

Borderline Personality Disorder in Older Adults: Emphasis on Care in Institutional Settings

Ana Hategan, James A. Bourgeois, and Glen L. Xiong (Department of Psychiatry and Behavioural Neurosciences, Faculty of Health Sciences, McMaster University, Hamilton, Ontario)

In series: Psychiatry - Theory, Applications and Treatments

Hardcover: 978-1-63482-221-3. $160.00.

With the book Borderline Personality Disorder in Older Adults: Emphasis on Care in Institutional Settings, Drs. Hategan, Bourgeois, and Xiong address an often underappreciated clinical problem that is likely increasing with the aging of the population. Geriatric patients with borderline personality disorder, like their younger counterparts, experience social and relationship challenges, comorbid psychiatric illness (including but not limited to substance use disorders), comorbid systemic illness, and are high utilizers of medical and social services. With the aging of the population worldwide, more older patients with chronic/progressive illnesses are to be found in various institutional settings such as skilled nursing facilities, rehabilitation units, and residential care, as well as in the general hospital. However, these patients’ habitual patterns of behavior (including affective dyscontrol, externalizing of blame, “splitting” the external world into groups who are “all good” and “all bad”) make the compromises and need for collectivity in institutional settings more challenging than for any other easily defined and demarcated patient group. The Editors have assembled a large team of authors and co-authors to produce a clinical handbook that addresses the clinical, social, and administrative needs of this particular group of patients. They include an overview of the development of the diagnosis of borderline personality disorder over several issues of the Diagnostic and Statistical Manual of Mental Disorders classification system; the epidemiology and comorbidity, personality and aging, clinical diagnosis and productive use of psychometrics; clinical interventions including psychotherapy, psychopharmacology and advanced somatic treatments; and chapters devoted to medical-legal matters, systems of care, therapeutic alliance, and palliative care approaches. In all chapters, the authors have endeavored to focus specifically on the challenges posed for the patient, the clinician, and the larger system for geriatric patients with borderline personality disorder. The authors and the editors hope that this volume summarizes the current clinical literature pertinent to the care of this population, with a focus on clinical encounters, clinical decision making, and techniques for interventions with patients and clinical systems of care to enhance the opportunities for favorable clinical outcomes for these patients, who typically have difficulty coping with the major existential challenges of old age, infertility, and mortality. Greater awareness of borderline personality disorder in this population and greater clinician attunement to its understanding and management may serve the patient and the care system in this regard.

Compassion: Social Significance, Role in Healthcare and Psychological Effects

Pauline Grant

In series: Psychology of Emotions, Motivations and Actions

Hardcover: 978-1-63482-962-5. $110.00.

Compassion positively correlates to happiness and increases in psychological capabilities, as supported by a substantial body of research. The concept of compassion has been used in a diversity of fields, applications and motivations. The first chapter of this book attempts to theoretically suggest how compassionate and self-compassionate interventions can benefit both the patients and health practitioners, by 1. Investigating the relevance/importance of considering different cultural backgrounds and 2. By introducing emergent findings on self-kindness and 3. By highlighting the significance of self-care. Authors’ of the other chapters examine pain, compassion and the importance of two-way motivational communication in the medical field between patient and physician and the positive correlation between compassion, and physiological and psychological health.

Emotional and Facial Expressions: Recognition, Developmental Differences and Social Importance

Bruce Flores

In series: Psychology of Emotions, Motivations and Actions

2015.
e-book: 978-1-63483-161-1. $190.00.
Communication is a complex two-way process, involving the encoding, translation, and decoding of both verbal and non-verbal cues. The most fundamental cue we utilize when communicating with others is that of the human face. This book examines several topics on the recognition, developmental differences and social importance of emotional and facial expressions. These topics include the theory of mind and emotion perception in typically developing children; intragroup and stereotyping effects in children's recognition of emotions; mother-infant interactions; and facial expression processing deficits in autism.

Forgiveness: Social Significance, Health Impact and Psychological Effects

Eugene L. Olsen
In series: Health Psychology Research Focus
Hardcover: 978-1-63483-334-9, $190.00.

Many people view forgiveness as a pivotal process in avoiding unnecessary conflict and our ability to maintain valued relationships. The chapters in this book explore a range of cognitive and social factors that are purported to contribute to forgiveness and which ultimately influence one's memory for the offending incidents; the relationship between forgiveness and psychological and physical health; forgiveness in parent-child relationships; forgiveness between people who act as parents and carry out their parental role and forgiveness between couples and in intimate relationships; the act of forgiveness and reconciliation in war survivors; research on people's disposition to forgive the self when they have done harm to another person (intrapersonal or self-forgiveness) as well as the victim's response to the wrongdoing, and the relationship between the offender and the victim in the self-forgiveness process. In the final chapter, the psychological process of forgiveness is questioned, and forgiveness as both a psychological capability and normative ideal is examined. The author argues that any sense of forgiveness as a moral relationship (and achievement) between two people is lost in a world in which ideally, the psychology and morality of forgiveness reinforce each other at times, and conversely, are at times in conflict.

Gambling: Cultural Attitudes, Motivations and Impact on Quality of Life

Giovanni Martinotti (Department of Neuroscience and Imaging, "G. d'Annunzio" University of Chieti-Pescara, Italy), Henrietta Bowden-Jones (National Problem Gambling Clinic, Imperial College, Division of Brain Sciences, London, UK)
In series: Psychiatry - Theory, Applications and Treatments
Hardcover: 978-1-63463-478-6, $190.00.
e-book: 978-1-63463-519-6, $190.00.

Gambling Disorder, or pathological gambling, is a psychiatric condition characterized by persistent and recurrent maladaptive gambling behaviour. Previously considered among impulse control disorders, the new DSM-5 considers Gambling Disorder as a behavioural addiction, sharing neurobiological and clinical similarities with substance-use disorders. However, although Gambling Disorder is a medical illness and as such can be treated, it is crucial to gain a wider perspective on the theme, taking into account all the cultural attitudes, motivations behind its diffusion and relative consequences on the quality of life. But why gamble? Among the wide variety of the material and symbolic functions of gambling, there are the desires for relaxation, excitement, socialization, challenge, and an aesthetic quest. Gambling can also be perceived as an escape from difficult situations. Generally, however, the hope for significant gains to improve the economic situation constitutes the leading motivation. In some cases trying to gamble may represent a tentative to establish a relation with something that is transcendent. In this book the proposed perspectives differ from that of schoolchildren and adolescents to females and indigenous populations. There is an emphasis on important issues as the psychopathological assessment, the availability of treatments and rehabilitation options, the presence of specific temperament and character traits, and other possible consequences of gambling directly depending on the poor quality of life, such as the suicide risk.
Inmates assume different roles during the course of incarceration to survive the pains of imprisonment. It is believed that women feel the pains of imprisonment more harshly than males because of the difficulty in being separated from their family and children. Adaptations to the prison environment differ according to sex, yet, both sexes can succumb to prisonization. In examining the differences in prisonization and survival strategies between the sexes, research finds that male inmates often enlist as gang members for protection, while women recreate family for emotional support. This book discusses the psychological implications of being incarcerated and the patterns and prospects of imprisonment.

**Integrated Psychological Services in Primary Care**

*William Scott Craig (Carolinas Healthcare System, Cabarrus Family Medicine, Harrisburg, N.C., USA)*

In series: *Health Psychology Research Focus*


In the current fast-paced healthcare environment, there is a need for more timely access to high quality behavioral health services. Integrated Psychological Services in Primary Care was developed by practicing psychologists, physicians, college professors, and licensed professional counselors who have embraced the integrated care model, and these distinguished authors share their invaluable insights and practical experiences. This book reviews different strategies for the implementation of behavioral health services in primary care, and there is also a practical discussion of common clinical presentations which can be effectively treated with collaborative care. This book reinforces the relevance of integrated psychological services to primary care settings. There is an emphasis on providing an advanced and cost-sensitive collaborative care model which most efficiently addresses the needs of our patients.

**Integrating Behavioural and Cognitive Psychology: A Modern Categorization Theoretical Approach**

*Darren J. Edwards (Department of Psychology, Swansea University, Singleton Park, UK)*

In series: *Psychology Research Progress*


This book has been written for a wide audience, from an undergraduate and layperson audience looking to explore the history and development of cognitive and behavioral psychology, to experts in the area interested in the integration of modern behavioral and cognitive psychology.

**Liberation Psychology in Brazil**

*Silvana Tuleski (State University of Maringa, Maringa, Brazil)*

In series: *Capitalism, Counter-Capitalism, and Psychology*

Edited by: *Carl Ratner (Institute for Cultural Research & Education)*


Hardcover: 978-1-63482-549-7. $190.00.

This book unites studies of Brazilian researchers who are focused on education and psychology. The main objective is to construct a new psychological ideology that is capable of criticizing and confronting the current capitalist society. The chapters are organized into two major sections: (1) The theoretical and methodological path towards a more critical Psychology, and (2) the social implications of the investigation into psychology and education. Section One is composed of six chapters that propose the following themes: criticism of possible contributions to Marxism leading to revolutionary education; discussion and analysis of public politics effects on Brazilian education, and its limits in the capitalist society; the basic conditions for development of a critical psychology that is effectively radical; the limits and possibilities for a critical Educational Psychology in Brazil; the historical critical pedagogy and the emancipatory education; and finally, the systematization of activity category in Alexis Leontiev’s work. Section Two is composed of seven chapters that present the results of many group research studies and study groups conducted at upper level institutions. It seeks to add related works on historical cultural psychology’s contribution to a child’s education up until under graduate and graduate studies. It contains four studies focused on critical education of young children which use children’s literature and various art forms.

**Loneliness: Psychosocial Risk Factors, Prevalence and Impacts on Physical and Emotional Health**

*Danielle L. Rhodes*

In series: *Psychology of Emotions, Motivations and Actions*


Loneliness is a current phenomenon that is not only influenced by personal characteristics but also by contextual conditions, resulting in cross-cultural variations in the ways in which we experience and cope with loneliness. This book presents data on loneliness in romantic relationships among emerging adults; children’s and adolescents’ experience of loneliness and social dissatisfaction in the context of social, economic and cultural changes, and a review on the existing literature on the antecedents of psychological loneliness with special emphasis on emotional factors. It is widely acknowledged that individuals with autism spectrum disorders spend a lot of time in isolation, since they have difficulties interacting with peers or significant others. The most prevalence and promising interventions for overcoming loneliness in these individuals is critically evaluated in this book and suggestions for improvements and further research are made. The authors of other chapters also discuss the role of loneliness in the dynamic that leads some victimized adolescents to attack their peers; the need for effective treatments targeting loneliness; the relationship between dying and loneliness; the psychological effects of loneliness in immigrants parents and their relationship to anger; and finally, the factors that may predict the level of loneliness among immigrants (including self-esteem, contact with national peers, gender and duration of residence).

**Neurobiology of Men’s Mental Health**

*Leo Sher, M.D. and Timothy R. Rice, M.D. (Icahn School of Medicine at Mount Sinai, James J. Peters Veterans Administration Medical Center, Fort Lee, NJ)*

In series: *Psychiatry - Theory, Applications and Treatments*


This book offers a developmental neuroendocrinologically-oriented perspective in the area of specialized psychiatric care for men termed “Men’s Mental Health.” This book collates the contributions of over 40 authors in the field of men’s mental health throughout 24 chapters in an attempt to overview the emerging developments in this field. Developmental neurobiology serves as the central organizational factor for this four-sectioned book. In the first section, the developmental
neurobiological perspective is introduced and considerations specific to men's mental health in infants, toddlers, children, and adolescents are discussed. In the second section, the relevance of men's mental health to informed suicide and homicide prevention among men are presented. The third section reviews major mental illness in men, while the last section provides an overview of the intersection of men's mental health with general medical conditions and the future directions for the field. This collection gathers the latest writings from authors around the world in this field and will be of value for clinicians and researchers interested in an increasingly-popular approach to providing neurobiologically-tailored care for men.

New Developments in Clinical Psychology Research
*Drozdstoj St. Stoyanov and Rolf-Dieter Stieglitz*  
(Medical University, Plovdiv, Bulgaria)  
In series: *Psychology Research Progress*  

The main aspects of developmental psychology can be found in Section I; it includes the concept of attachment, which is a central construct of developmental psychology that has gained more and more importance in clinical psychology and psychotherapy over the years. Neuropsychological disorders, which play a central role in many other psychological disorders (e.g.: executive functions, learning difficulties, dyslexia), are addressed in a separate chapter. Section II (Diagnostic and Clinical Psychology) focuses on different facets of diagnostics, with diagnostic key aspects in clinical psychology. The connection between the construct of attention and mindfulness therapy exemplifies the transfer into concrete therapeutic approaches. Furthermore, important considerations in connection with differential diagnostics will be addressed by means of disorders, which have only come into focus during recent years. These disorders include autistic spectrum disorders and adult ADHD (attention deficit/hyperactivity disorder) as well as burn out syndrome. The complexity of clinical psychology shall be illustrated by means of some examples in Section III (Clinical Psychology and Other Disciplines). In the last chapter, a more practical approach is applied. For the clinical psychologist, the vast amount of empirical studies and clinical relevant results bear the problem of accomplishing them and putting them into practice. Here, a continuous education is essential.

New Developments in Social Identity Research
*Blair R. Nelson*  
In series: *Psychology of Emotions, Motivations and Actions*  
2015. 103 pp.  
Softcover: 978-1-63463-741-1. $82.00.  
e-book: 978-1-63463-775-6. $82.00.

Social identity theory proposes that much of our identity, attitudes, beliefs, and even our behaviors are grounded in groups that we affiliate with, or groups that are important to us. The groups (e.g. class, sports team, religion, family) which we belong to are an important source of pride, self-esteem, and identity. Additionally, the groups that we are a part of gives us a sense of social identity - a sense of belonging to the social world. This book provides and discusses new developments in social identity research.

Personality Traits and Types: Perceptions, Gender Differences and Impact on Behavior
*Judy Hawkins*  
In series: *Psychology of Emotions, Motivations and Actions*  
Hardcover: 978-1-63483-225-0. $110.00.


Self-awareness is an important aspect of successful management careers. The first chapter of this book investigates the link between self-awareness and personality. The authors also examine personality traits including self-confidence, self-efficacy, and motivation; explore the connection between emotional intelligence and individual differences in psychological type among church leaders; discuss personality prototypes in older adulthood; the personality and quality of life in patients with epilepsy and schizophrenia; and finally, provides information on empowerment through intrinsic motivation and self-efficacy.

Placebo Effects: Clinical Aspects, Methodological Approaches and Ethical Implications
*Kendra Vaughn*  
In series: *Psychology Research Progress*  
Softcover: 978-1-63482-960-1. $82.00.  
e-book: 978-1-63483-017-1. $82.00.

Placebo effect is a medical term indicating an effect attributed to sham pharmaceutical preparations, which are able to induce a positive or a recovery response in an individual interacting both with placebo and the general practitioner, physician or caregiver. The placebo response is a well-recognized phenomenon, particularly in the context of clinical trails. The chapters in this book examine the recent debate about the role of placebo in pharmacology, particularly in neuro-pharmacology, psychology and palliative care in cancer and has shed a light on the placebo component of CAM (complementary and alternative medicine) and the use of placebo in evidence based medicine (EBM). The authors’ of the second chapter look at the putative mechanisms of placebo and nocebo responses in epilepsy, which are hypothesized and discussed along with possible consequences in clinical practice. The third chapter provides a brief discussion of the ethical and clinical implications of the nocebo response.

Psychiatry Board Review
*Panagiota Korenis, M.D. (Assistant Professor, Bronx Lebanon Hospital, Albert Einstein College of Medicine, NY, USA)*  
In series: *Psychiatry - Theory, Applications and Treatments*  
2015. 188 pp.  
Softcover: 978-1-63483-590-9. $82.00.  
e-book: 978-1-63483-610-4. $82.00.

Look no further. Psychiatry Board Review is the only review book you will need when preparing for your exams! This psychiatry board review book is written especially for those looking for a quick and easy reference guide. It is conveniently formatted to update you on the DSM with five updates and ensure that you are prepared for your psychiatry shelf, PRITE™, psychiatry boards and recertification exams. This review book will not only help young and mature physicians prepare for their exams, but it will also help medical students and young physicians learn about the psychiatric patient and the treatment of clinical illness. Psychiatry Board Review includes thousands of facts related to both psychiatric and neurologic illness, evidence based treatment and management; it will quickly become your go-to reference and favorite review book. Psychopharmacology and psychotherapeutic modalities are integrated both into the illness section as well as a chapter highlighting important drug interactions with the metabolism. It will ensure reinforcement of fundamental psychiatric pearls and provide a foundation for applying both into everyday clinical practice. With so many uncluttered and easy to read tables, which are organized by illness category to help illustrate key points, this review book is the only reference you need to prepare for your exams.
Psychiatry on the Edge
Ronald William Pies, M.D. (SUNY Upstate Medical University, Syracuse, NY, USA and Tufts University School of Medicine, Boston, MA, USA)
In series: Psychiatry - Theory, Applications and Treatments
Softcover: 978-1-63482-980-9. $82.00.
e-book: 978-1-63117-987-7. $82.00.
In many ways, it is “the best of times and the worst of times” for the field of psychiatry. New discoveries in neuroscience are leading us to a better understanding of several major disorders, such as schizophrenia and bipolar disorder. New and effective treatments are gradually emerging for these conditions, sometimes combining medication with brief, targeted forms of psychotherapy. And, psychiatrists are increasingly aware of the role of culture and spiritual values in working empathically with patients. At the same time, psychiatry is being challenged from several quarters, with both its diagnostic system and treatment methods, the subject of great controversy. Mental illness itself continues to be misunderstood or stigmatized, and those who treat psychiatric disorders have been subject to harsh criticism and hostility. Economic pressures have encroached on psychiatry’s availability to provide psychotherapy for many patients, and the “biopsychosocial model” of treatment has been undermined. For all these reasons, psychiatry finds itself “on the edge” – the edge of both great promise and equally great peril. In this collection of essays drawn from his many years writing for Psychiatric Times, Ronald W. Pies, MD, defends psychiatry against its detractors, while also acknowledging the profession’s shortcomings and challenges. He provides a robust defense of both the science and the art of psychiatric treatment, while moving beyond the symptom-based, DSM approach to diagnosis. Dr. Pies takes on the positivist critics who insist that only bodily disease is “real”, and emphasizes that both psychiatry and general medicine identify disease states by the presence of substantial suffering and incapacity. He also espouses a broad-based, humanistic approach to the care of the patient, drawing on several philosophical and spiritual traditions. Finally, Pies argues that psychiatry cannot be viewed apart from the system of ethical values that underlie medical practice in general, and offers some caveats regarding the misuse of psychiatric expertise for non-medical purposes.

Psychological Health and Needs Research Developments
Raul Wolfe
In series: Health Psychology Research Focus
Hardcover: 978-1-63483-332-5. $190.00.
The first chapter of this book is a discussion of the three basic psychological needs according to the Self-Determination Theory: autonomy, competence and relatedness, which have been laid out as fundamental nutrients of human experience. The second chapter reviews the research published in the last 10 years on coping skills in adolescence and their association with well-being. The next chapter of the book offers a comprehensive overview of the effectiveness of expressive art based interventions on adolescent mental health. The remaining chapters in this book on psychological health and needs explore the psychological benefits in physical activity and sport; the importance of testing measurement invariance for psychological health research; an examination of the relationships between college student’s spiritual well-being, parental rearing attitude and coping strategies with their anxiety and depression; the importance of Health Related Quality of Life (HRQOL) during aging; and lastly, a theoretical framework is proposed by the authors to investigate the mechanisms by which faith-based addition treatment delivers the desirable treatment outcomes.

Psychological Trauma and Feelings of Dirtiness
Ryotaro Ishikawa (Department of Cognitive and Behavioral Science, Graduate School of Arts and Sciences, University of Tokyo, Japan)
In series: Safety and Risk in Society
Softcover: 978-1-63463-319-2. $62.00.
Sexual assault constitutes both physical and mental violence, and it is not easily recovered from. Victims/survivors of sexual assault may experience severe feelings of anxiety, stress, or fear. This book demonstrates some mental health problems that sexual assault victims may experience. It focuses on some topics about (a) post-traumatic stress disorder; (b) obsessive-compulsive disorder; and (c) mental contamination. Clinical experience and empirical studies show that many victims of sexual assault suffer from a distressing feeling of being contaminated for years or decades after experiencing sexual violence. This phenomenon is called mental contamination and was first identified by Rachman (1994). Mental contamination is defined as the experience of contamination-related feelings of dirtiness in the absence of direct physical contact with a contaminant. This psychological sense of contamination involves internal and emotional feelings of dirtiness that may be evoked by unwanted thoughts and images, as well as by memories of negative events such as from sexual assaults. Mental contamination has also been found to be prominent in victims of sexual assault and in patients with post-traumatic stress disorder (PTSD). As behavioral consequences of the feeling of mental contamination, victims of sexual assault suffer feelings of mental contamination and might show excessive washing behavior, and may develop Obsessive-Compulsive Disorder (OCD). The book presents cognitive theory of the mental contamination in order to demonstrate how this problem can be treated. In addition, the book presents clinical guidelines based cognitive behavioural therapy for the mental contamination that can develop.

Psychology of Risk Taking: New Research
Caitlin E. Nathanson
In series: Psychology of Emotions, Motivations and Actions
2015. 159 pp.
Hardcover: 978-1-63463-919-4. $110.00.
e-book: 978-1-63463-946-0. $110.00.
Risk-taking is viewed as an aspect of proneness to problem behavior and a maladaptive trait and the tendency to engage in behaviors whose outcome is uncertain and entails negative consequences. Though risk-taking behavior is likely to be harmful or dangerous, it can also be functional and goal-directed and play an important part in developmental tasks. According to cognitive psychologists, many factors such as decision-making, perceptions’ gains and losses, expectations about the future and biases in risk perception affect a persons’ risk-taking behavior in developmental tasks. This book provides new research in the psychology of risk taking.

Psychology Research Summaries. Volume 1 (with Biographical Sketches)
Nancy E. Wodarth and Alexis P. Ferguson
In series: Psychology Research Summaries
This book is a compilation of biographical sketches and research summaries from a number of different focuses in the field of psychology research.
Today, it is common to find temporary and permanent employees working alongside each other in technical jobs. However, what is it that drives these workers and how do their motivations fall in with the success of such new work arrangements? By following the principles of the Self Determination Theory (SDT), the authors’ will show that human motivations, in all kinds of workers, are the result of a complex interplay between individuals’ autonomy and its internal and external regulation, proving that elevated forms of motivation (i.e., intrinsic motivation and identified regulation), provided by autonomous environments, lead to more adaptive, cognitive and affective outcomes. Additionally, this book will show how it may be possible to transform suboptimal forms of motivation into more self-determined ones. We will show that minor, repeated events can lead to gradual and internalized behaviors, which allow people to experience more adaptive outcomes and attain higher motivation towards their job. In other words, positive work experiences will be shown as being capable of captivating and engaging individuals, leading them to consider their choices as more voluntary and autonomous. How contingent workers’ motivation can change over time may actually be crucial to better comprehend and improve their employment relationship.

**Sex, Love and Laughter**
Ami Rokach and Itzhak Zahy Ben Zion (The Center for Academic Studies, Israel, York University, Canada, Walden University, USA)

In series: *The World of Psychology: Therapeutic, Relational, Teaching*
Edited by: Ami Rokach (Department of Psychology, The Center for Academic Studies, Or Yehuda, Israel)

Hardcover: 978-1-63483-258-8, $160.00.

Sex, Love and Laughter was written by two experts in the field, and as its name implies, the book discusses sexuality, relationships and love in a lighthearted fashion. The book is composed of descriptions of our emotional, psychological and physical functioning which affect sexuality. Theoretical descriptions, questions that we are frequently asked along with the answers we provide, as well as tips about sexuality, sexual practices and intimate relationships are described in everyday language peppered by humorous stories and accounts from our clinical practices, relevant jokes, and ‘pearls’ uttered by public figures. This comprehensive, easy to understand, yet humorously written book addresses healthy and dysfunctional relationships, fulfilling sex, and unsatisfying sexual escapades. It can be read for learning, enriching good relationships, learning new things about sex, its humor, and getting a behind-the-door look at what actually happens in a sexual therapist’s office. It’s a riveting look at what people like, dislike and request as far as sex and love are concerned. Some of the topics include such sections on: the beauty and pain of love; love, sex and what’s between them; sterile sex; men and women; many ways to enjoy sex - frontal, back door, orally and manually; GPS to the G Spot; sex in later years; and the pathway to love and laughter.

**Social Relationships and Friendships: Perceptions, Influences on Human Development and Psychological Effects**
Melissa Bryant

In series: *Psychology Research Progress*
2015. 185 pp.
Hardcover: 978-1-63482-798-0, $160.00.

Friendship has a positive impact on social and metacognitive skills, and many pedagogues and authors hypothesize that having friends can affect positively children’s school performance. In this book, an exploratory study conducted with young pupils to investigate the impact of friendship on cognitive engagement during several search
information tasks. The second chapter reviews recent research regarding the advantages of early years which focuses on enhancement and development of cognitive skills for pre-schoolers. Studies of early education identifying a positive relationship between children's participation in early education settings and social outcomes are reviewed as well. The authors of the other chapters review the impact of outdoor learning on social relationships (as well as for whom the learning experience did not positively impact their social relationships); the importance of social relationships and the challenges widows face, in particular older women widows; risk-taking activity, in particular, graffiti-writing to establish a status among one's peers; individual differences in the domains of reasoning and how early experiences can influence cognitive processes.

Subjective Well-Being: Psychological Predictors, Social Influences and Economical Aspects

Victoria Adkins

In series: Psychology Research Progress


Hardcover: 978-1-63482-645-7. $190.00.

Philosophy has long wondered about relations between a happy and an honest, moral life. This book includes chapters on the relationship between the satisfaction with life (the cognitive component of subjective well-being) and happiness. Furthermore, the economics of happiness and subjective well-being (SWB) has been the focus of considerable attention among social scientists recently. All individuals want to be happy, but not everybody is happy. The authors examine the micro and macroeconomic influences on enhancing happiness and SWB. Other chapters aim to help the reader understand 1. Whether job satisfaction is a key predictor of overall life satisfaction 2. The relationship between human capital and subjective well-being in several countries 3. The advantages of proactive coping for expectant mothers' mental health during pregnancy and postpartum 4. Components of well-being in older adults, including socioeconomic status (SES) and multiple psychological and social factors (including the impact of religion on subjective well-being); 5. The correlation between gratitude and subjective well-being; 6. The effect of quality of governance on subjective well-being 7. The levels of psychic well-being (PWB) and the differences between individuals' PWB according to their gender, working position and years of service and finally, the study included in the last chapter of the book explores the associations between subjective well-being (happiness, health and self-esteem) religiosity and depression in adolescents.

Suicidal Ideation: Predictors, Prevalence and Prevention

Bradley Weaver

In series: Psychology of Emotions, Motivations and Actions

2015. 121 pp.

Hardcover: 978-1-63483-092-8. $110.00.

Suicidal ideation may be defined as any self-reported thoughts of engaging in suicide related behavior. The first chapter provides a comprehensive definition of the concept of suicidal ideation together with related epidemiological data and then reviews the major risk factors. The possible controversial role of early experiences of childhood abuse and neglect in the development of suicidal ideation are explored. The impact of universal, selective and indicated suicide prevention strategies in lowering suicide rates are analyzed as well. The authors of the remaining chapters of the book review the suicidal symptoms among veterans with Chronic PTSD; recent advances in antidepressant drugs research; hypotheses for the pathogens of the rarely occurring antimicrobial-induced mania and suicide; and suicide prevention methods using the internet.

Systematic Approach Elucidating Effects of Music onto Human Health: Trinity of Medicine, Musicology, and Engineering

Yuki Tanaka and Hiroki Nogawa (Founder, MedicoMusik.Ink., Medical School, College of Bioresource Sciences, Nursing College Nihon University, Dept. of Medical Informatics, Tokyo Medical and Dental University Graduate School, Japan)

In series: Health Psychology Research Focus

2015.

Hardcover: 978-1-63483-020-1. $110.00.
e-book: 978-1-63483-554-1. $110.00.

Many people feel music affects human, which means we feel activated or inspired when we hear music tailored to our feelings. This effect has been the basis of music therapy. However, no scientifically systematic approach for investigating the effects of music on human health has been proposed, although a set of analytic methods or apparatuses for evaluating human responses to music has been described. Herein is a new book entitled Systematic Approach Elucidating Effects of Music on Human Health: Trinity of Medicine, Musicology, and Engineering, which states and proposes a new systemic approach to elucidate effects of music on human health. This book proposes a concept that supposes humans as a black box and tries to elucidate its behaviors by analyzing the input and output from the black box: the input is music, while output is human reactions. This book then describes two aspects of input analysis that are musicology and engineering, and two aspects of output analysis that are medicine and engineering. After stating the analysis method in detail, this book shows integration processes of these analysis aspects, presenting three research examples. These research examples are Effects of Ethnic Music on Elderly Dementia Patients, The Effect of Music upon Awakening from a Nap, and the Effect of Music on Biological Responses during Sports Activities. Though these research examples may look to focus on different research subjects, a single and robust systemic approach underlies the research. This book is useful for researchers who have interests in studying the effect of music on human health with some knowledge of musicology, engineering, psychology, and neuroscience. This book proposes a firm systemic methodology for them and helps them to perform further studies of their own. Music therapists, music composers, and music artists also may feel interested in this book.

Tales of Attachment: Encounters with John Bowlby

Arturo Ezquerrro (Institute of Group Analysis, London)

In series: Psychology Research Progress


Tales of Attachment: Encounters with John Bowlby is an absorbing book on the warm encounter between one of the sharpest British thinkers of the 20th Century, and a thriving young doctor from Spain who comes to study with him. Their relationship developed from 1984 to 1990 at the London Tavistock Clinic, the largest provider of psychoanalytic psychotherapy in Europe. The story is personal and shows the affection between the two men, a delicate yet invigorating shift from a “story told” to a “story lived”. The book pays a heartfelt homage to John Bowlby (1907-1990), “father” of Attachment Theory; to the strangely precise and transparent naturalness of his thinking; to his gentleness, compassion and encouragement; to his overwhelming humanity; and finally, to his genius. Bowlby’s own development and attachment history are vividly portrayed. His message was deceptively simple: “we need our mothers… and fathers… and groups. We need one another”. The author, Arturo Ezquerrro (a consultant psychiatrist, psychoanalytic psychotherapist, group analyst, and former Head of a London Medical Psychotherapy Department) aims to be unashamedly
inclusive, sensitive to diversity and undogmatic. Mental health professionals and trainees may appreciate a reasoned integration of theory, research, training and clinical practice. Yet, the text is also accessible to anyone who is interested in relationships and personal development, or who has ever been a patient. Moreover, the reader might learn from and identify with touching real life experiences that show our struggle to become attached, to survive, and to grow.

Theory of Mind: Development in Children, Brain Mechanisms and Social Implications
Elizabeth Sherwood
In series: Perspectives on Cognitive Psychology
Hardcover: 978-1-63463-856-2. $190.00.
e-book: 978-1-63463-889-0. $190.00.
We live at the dawn of a revolution in human interrelatedness. Technological advancements in communication demand interrelatedness not only with family, friends and colleagues but also with Facebook, Twitter and LinkedIn connections. Perhaps this demand has contributed to the resurgence of efforts toward unity across social divisions toward social justice. But even as forces for solidarity are at work in the world, forces against solidarity threaten our existence and some forces work both for and against solidarity. One such force is the very nature of our humanity and in particular the role of theory of mind (ToM) in our moral lives. Theory of mind is a term defining the ability of any animal to attribute mental states to itself and others, and to understand that conspecifics have beliefs, desires and intentions; and also that these may be different from one’s own. It is developed at the cross-section of epistemology, cognitive science and psychology and is also closely connected to other constructs such as meta-cognition, self-awareness; reflection, empathy etc. This book discusses the development in children, brain mechanisms and social implications of the theory of mind.

Victim Victorious: From Fire to Phoenix
Marie Claire Patron and Stephen S. Holden (Bond University, Robina, Australia)
In series: The World of Psychology: Therapeutic, Relational, Teaching
Edited by: Ami Rokach (Department of Psychology, The Center for Academic Studies, Or Yehuda, Israel)
e-book: 978-1-63482-238-1. $190.00.
The world is peopled by victims; everyone has a story. However, victimhood is just the beginning of the story. This book is about the endings of at least some of those stories, the stories of victims who strive to overcome and even triumph in the end. This book is a collection of research perspectives and personal stories exploring the various pathways for overcoming victimhood. It is hoped that they might offer an inspiration for others and encourage others to stay on the path to find a positive ending. Victim Victorious is an examination of the ways in which victims come to rise above the challenges that they face. Victims may be innocent bystanders, and in no way responsible for their victimhood. Nonetheless, they can – and indeed we argue need to – take responsibility for finding a personal solution. To assist in this task, this book chronicles the pathway of prejudice and how the pain and the damage experienced by individual victims may be overcome by effort, by and on their own behalf. The first half of the book features outsider views of victimhood. A range of professionals, philosophers, psychologists, criminologists and critical theorists offer their thoughts on how people might overcome victimhood. The second half of the book features insider views of victimhood; in this section, the victims speak for themselves about their experience and how they have endeavored to break through their victimhood. This book is less about identifying and proscribing the behaviors of perpetrators and more about the efforts that victims can undertake to heal themselves as they journey towards resilience and victory.

Vygotsky and Leontiev: The Construction of a Marxist Psychology
Silvana Calvo Tuleski (State University of Maringa, Maringa, Brazil)
In series: Capitalism, Counter-Capitalism, and Psychology
Edited by: Carl Ratner (Institute for Cultural Research & Education)
2015. 188 pp.
Hardcover: 978-1-63482-901-4. $190.00.
This book unites theoretical research which focuses on the studies of the two Soviet authors that created Historical-Cultural Psychology: L. S. Vygotsky and A. N. Leontiev. Currently, several publications appear to distort facts and concepts of the authors and make statements that tarnish the works of Vygotsky and Leontiev. The book is organized into two sections. Section one begins with an analysis of contemporary studies that claim they are based on Vygotsky, seeking to prove that many studies end up distorting the author’s ideas. The following two chapters conduct a historical study of the author (his work and its context) and seek to introduce the reader to concepts of materiality and undeniable affiliation to Communism as well as historical dialectical materialism. Section two consists of two chapters that propose problems in the alleged rift between Vygotsky and Leontiev based on history and documented sources. Lastly, this book seeks to demonstrate through the use of an in-depth study of Leontiev’s work that he did not become mechanistic, but continued to elaborate on a theory of Vygotsky’s which depicts the social formation of psyche through activity.

PUBLIC HEALTH

Accidental Falls: Risk Factors, Prevention Strategies and Long-Term Outcomes
Brenda Evans
In series: Public Health in the 21st Century
2015. 147 pp.
Hardcover: 978-1-63483-228-1. $110.00.
Falls are considered as one of the accidents that take more loss of functionality, mainly in older adults. This book begins with a discussion on the prevalence of falls among different populations, the most used definitions and classifications for falls and their physical, social and psychological consequences. Furthermore, this book provides easy and practical recommendations for falls and fall-related injury prevention.

Activities of Daily Living (ADL): Cultural Differences, Impacts of Disease and Long-Term Health Effects
Scott T. Lively
In series: Public Health in the 21st Century
Hardcover: 978-1-63463-913-2. $110.00.
Alzheimer’s disease (AD) is a debilitating neurodegenerative disease which commonly occurs later in life. In the early stages of AD, everyday tasks such as making a cup of coffee, managing finances and other tasks which require complex interaction with the environment,
become difficult for an individual to perform. These tasks facilitate independent living and quality of life, and are referred to as Instrumental Activities of Daily Living (IADL). However, as this disease progresses, even basic activities of daily living (BADL), such as bathing, toileting and eating meals, which are fundamental to self-care, become difficult to carry out unaided. This book examines the cognitive and neural correlation AD has on ADL. Furthermore, the book discusses the quality of life of patients with knee osteoarthritis; real-time fall detection systems that aim for fall prevention; disability and ethnicities; hand functionality during activities of daily living; and rehabilitation strategies used to promote independence in daily living tasks for people with cognitive impairments.

Adolescent Health Literacy and Learning
Deborah L. Begoray and Elizabeth M. Banister
(Department of Curriculum and Instruction and School of Nursing, University of Victoria, Canada)
In series: Public Health in the 21st Century
Hardcover: 978-1-63482-897-0. $190.00.
e-book: 978-1-63482-946-5. $190.00.
Adolescent Health Literacy and Learning offers insights to all those who care about promoting and assisting adolescent health development: health education teachers, health practitioners, and youth care workers. Adolescent health is of worldwide concern, especially as we learn that health habits and attitudes established in adolescence continue into adulthood. For example, chronic diseases such as diabetes that began in mid to late adulthood are becoming more prevalent in younger ages. Academics, clinicians and teachers are searching for ways to raise the health literacy and health outcomes of adolescents to better prepare them for the future. There is a need to raise the profile of adolescent health literacy and learning in order to address issues in adolescent and adult health. This edited volume features expert Canadian health literacy scholars writing on topics such as digital technology, software applications to health promotion, advertising, gender, suicide, nutrition, fitness, and mental health specifically for adolescents. It contains theoretical and practical ideas as well as resources for practitioners and educators to assist adolescents with interacting more critically with health information. The hope is that this book will help young people grow into adults who are more health literate. All contributing authors are experts in adolescent health literacy. Many take a uniquely Canadian perspective as well. They all acknowledge the impact of a variety of individuals and groups on adolescents, but also encourage the development of an adolescent's sense of individual identity, critical thinking, social responsibility and even activism as part of their health literacy.

Arbovirus: Public Health Experience from Zambia
Seter Siziya, Ph.D., Mazyanga L. Mazaba, Joav Merrick, M.D. (The Copperbelt University, School of Medicine, Department of Clinical Sciences, Public Health Unit, Ndola, Zambia)
In series: Public Health: Practices, Methods and Policies
Edited by: Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
Arboviruses have become significant causes of public health problems with potential for epidemics and unprecedented spread. Large epidemics have occurred and will continue to occur unless we remain extremely vigilant, respond promptly, and have more to offer than isolation and quarantine. Arboviral diseases include the West Nile virus, Yellow fever and dengue, among others. These viruses have caused widespread morbidity in sub-Saharan Africa as well as worldwide. The changing epidemiology of arboviruses, the changing virulence of arboviruses, increased vector population responsible for transmission of diseases, the growing population sizes and rapid urbanization cause changes in equilibrium of vectors and hosts, thus, increasing chances of outbreaks and epidemics. Therefore, a constant watch on the pattern of arboviral diseases through surveillance is inevitable. In this book, we present public health experiences from Zambia.

Creating Wellness: An Integrative Approach
John L. Stump, Donna Retzloff-Roberts and David P. Sniezek (University of South Alabama, Mobile, AL, USA)
In series: Public Health in the 21st Century
Hardcover: 978-1-63463-837-1. $160.00.
Physicians are well trained in conventional medicine and most are well acquainted with integrative medicine, which incorporates conventional and alternative medical practices in a complementary manner. However, many patients are less understanding of what integrative medicine is and when it should be used. This book is intended for the untrained person who wants to become more knowledgeable about Integrative Medicine, where the objective is to treat the whole person (mind, body and spirit) and make better informed decisions regarding his or her own medical care. It is an introduction to complementary, alternative, integrative and even anti-aging and functional medicines tailored to aid the patient’s personal needs and goals for health and wellness. This symbiotic relationship between different disciplines is accomplished simply by putting wellness first in our thinking instead of sickness and disease. Most people only think about health when it’s lost; many times, this is too late! This book helps the reader take wellness and preventive steps to improve his or her health status.

Descriptors, Structural and Spectroscopic Properties of Heterocyclic Derivatives of Importance for Health and the Environment
Silvia A. Brandán (Catedra de Química General, Instituto de Química Inorgánica, Facultad de Bioquímica, Química y Farmacia, Universidad Nacional de Tucumán, Ayacucho, San Miguel de Tucumán, Tucumán, R. Argentina)
In series: Public Health in the 21st Century
The compounds that contain heterocyclic rings in their structures present diverse properties according to the number and nature of the different substitute to which they are united. Thus, these derivatives are broadly studied from different points of view. This book presents important studies related to the structures, vibrational spectra and descriptors of two series of heterocyclic derivatives; on one hand, some derivatives are of importance for the health and, on the other hand, others are of environmental importance. Chapters 1 to 6 are oriented towards the first series of derivatives broadly used in the pharmacological industry for human health. From Chapters 7 to 9, the studies are oriented toward the properties of the hexaclorobenzene, 2,4 dichlorophenoxy acetic acid and sulfonylureas derivatives where the sulfonylureas are herbicides of low dosage, low mammalian toxicity, high selectivity, and benign environmental activity while on the contrary, hexachlorobenzene and 2,4 dichlorophenoxy acetic acid present high toxicities.
Electronic Health Records: Assessments of Program Participation and Key Challenges
Carole Medina
In series: Public Health in the 21st Century
Hardcover: 978-1-63482-276-3. $120.00.
e-book: 978-1-63482-277-0. $120.00.
The Health Information Technology for Economic and Clinical Health (HITECH) Act established Electronic Health Record (EHR) programs. These programs provide incentive payments for—and later are expected to apply penalties to—certain providers, such as hospitals and professionals, to encourage them to demonstrate meaningful use of certified EHR technology and meet other program requirements. Based on the number of providers awarded incentive payments, participation in the Department of Health and Human Services’ (HHS) Medicare and Medicaid Electronic Health Record programs increased substantially from their first year in 2011 to 2012. This book assesses the extent of current and expected participation in the EHR programs; examines information reported by providers and others to measure meaningful use in the EHR programs; evaluates HHS efforts to ensure that EHR data can be reliably used to measure quality of care; and evaluates HHS efforts to assess the effect of the EHR programs on program goals related to adoption and meaningful use of EHRs and improved outcomes.

Exposed: Special Issues Regarding Agent Orange, Coal Mine Dust, and Radiation Exposures
Wayne L. Miller
In series: Public Health in the 21st Century
2015. 84 pp.
Softcover: 978-1-63483-039-3. $62.00.
The U.S. Armed Forces used a variety of chemical defoliants to clear dense jungle land in Vietnam during the war. Agent Orange (named for the orange-colored identifying stripes on the barrels) was by far the most widely used herbicide during the Vietnam War. Many Vietnam-era veterans believe that their exposure to Agent Orange caused them to contract several diseases and caused certain disabilities, including birth defects in their children, and now their grandchildren. This book provides an overview of how Congress and the judiciary have addressed the concerns of Vietnam-era veterans and briefly describes some of the current issues raised by Vietnam-era veterans. Furthermore, underground coal miners face the threat of being overexposed to coal mine dust, which can cause CWP and other lung diseases, collectively referred to as black lung disease. The book examines the extent to which the Mine Safety and Health Administration (MSHA) used recent CWP trend data as a basis for its proposed exposure limit; and expert views on ways to lower the level of dust in coal mines, including their associated advantages, disadvantages, and cost. Finally, this book discusses the Radiation Exposure Compensation Act (RECA). The RECA was enacted in 1990 and provides one-time cash benefits to certain persons who participated in atomic weapons testing or lived near the Nevada Test Site during periods of atmospheric (above-ground) atomic weapons testing. Benefits under RECA are also available to certain uranium miners, mill workers, and ore transporters who worked in the uranium industry between 1942 and 1971, when the federal government stopped its procurement of radiation for the atomic weapons program.

Federal Action on Rape, Sexual Assault, and Domestic Violence
Serena Palmer
In series: Safety and Risk in Society
Softcover: 978-1-63463-845-6. $62.00.
This book analyzes the most recent, reliable data about rape and sexual assault in our country. It identifies those most at risk of being victims of these crimes, examines the cost of this violence (both to survivors and our communities), and describes the response, too often inadequate, of the criminal justice system. The book catalogues steps the Administration has taken to combat rape and sexual assault, and identifies areas for further action.

Federal Programs Supporting People with Serious Mental Illness: An Assessment
Benjamin Wright
In series: Public Health in the 21st Century
2015. 100 pp.
Softcover: 978-1-63483-043-0. $62.00.
In 2013, about 10 million adults in the United States had a serious mental illness. The U.S. mental health care system includes a range of federal programs—across multiple agencies—for those with mental illness. Past efforts to develop a list of federal programs supporting individuals with serious mental illness have highlighted the difficulty of identifying such programs. This book identifies the federal programs that support individuals with serious mental illness; the extent to which federal agencies coordinate these programs; and the extent to which federal agencies evaluate such programs. Determining how many people have a mental illness can be difficult, and prevalence estimates vary. While numerous surveys include questions related to mental illness, few provide prevalence estimates of diagnosable mental illness (e.g., major depressive disorder as opposed to feeling depressed, or generalized anxiety disorder as opposed to feeling anxious), and fewer still provide national prevalence estimates of diagnosable mental illness. This book briefly describes the methodology and results of three large surveys that provide national prevalence estimates of diagnosable mental illness.

Handbook on Burnout and Sleep Deprivation: Risk Factors, Management Strategies and Impact on Performance and Behavior
Travis N. Winston
In series: Public Health in the 21st Century
2015. 331 pp.
Job burnout has been well described and refers to a transformation that occurs in persons exposed to considerable occupational stress, particularly in fields that involve human interaction. It is a pathological syndrome in which overwhelming work demands lead to emotional depletion, maladaptive detachment, and feelings of personal inefficacy. This book discusses risk factors that lead to burnout as well as its impact on performance. This book also discusses the affect sleep deprivation has on academic performance and management.

Health Impact Assessment: Procedures, Technologies and Outcomes
Carl E. Robinson
In series: Public Health in the 21st Century
Softcover: 978-1-63482-790-4. $82.00.
e-book: 978-1-63482-805-5. $82.00.
In this book, the health impacts of promoting walking to school as part of a comprehensive health impact assessment (HIA) were examined. The chapter focused on a single area of analysis - physical activity and associated changes in body mass index (BMI). The second chapter of this book reviews the potential health outcomes related to redeveloping a dangerous highway; the third chapter examined noise health impact assessment, with a focus on noise levels, peak levels and reverberation times of playrooms. The authors discuss the practical measures that can
be taken for effective noise prevention that could help improve actual noise conditions and minimize the risk of health effects. The last chapter reviews the persistence of microbial adhesion and its challenges to the establishment and maintenance of hygienic conditions in various environments.

Health Issues in Diverse Cultures
Cecilia Obeng, Samuel Gyasi Obeng and Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
In series: Public Health: Practices, Methods and Policies
Edited by: Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
Hardcover: 978-1-63463-613-1, $95.00.
In this book, we present research on health issues in diverse cultures and especially research around immigrants who came to the United States from diverse backgrounds. Hispanic and Asian Americans make up the fastest growing sector of the United States population and immigrants are often unable to access, seek, or receive health care due to several barriers. Research and also clinical experience have found that recent immigrants who migrate to the United States frequently experience a lack of access, high costs, and difficulty obtaining medical insurance along with barriers such as access to information, cultural or linguistic obstacles, and an inability to understand the healthcare system. Therefore in this book, we have tried to gain a better understanding for the readers of the experiences that immigrants undergo in the healthcare system through several research projects presented herein.

National Strategy and Action Plan for Combating Antibiotic Resistant Bacteria
Anthony Phillips
In series: Public Health in the 21st Century
Hardcover: 978-1-63483-072-0, $120.00.
The discovery of antibiotics in the early 20th century fundamentally transformed human and veterinary medicine. Antibiotics now save millions of lives each year in the United States and around the world. The rise of antibiotic-resistant bacterial strains, however, represents a serious threat to public health and the economy. If the effectiveness of antibiotics (drugs that kill or inhibit the growth of bacteria) is lost, we will no longer be able to reliably and rapidly treat bacterial infections, including bacterial pneumonias, foodborne illnesses, and healthcare-associated infections. As more strains of bacteria become resistant to an ever-larger number of antibiotics, our drug choices have become increasingly limited and more expensive and, in some cases, nonexistent. In a world with few effective antibiotics, modern medical advances such as surgery, transplants, and chemotherapy may no longer be viable due to the threat of infection. This book examines the national strategy and plan for combating antibiotic-resistant bacteria.

National Vaccine Injury Compensation Program: Provisions and Issues
Preston Torres
In series: Public Health in the 21st Century
2015. 100 pp.
Softcover: 978-1-63482-528-3, $62.00.
Vaccines save lives by preventing disease in the people who receive them. In some instances, however, a vaccine can have severe side effects, including death or an injury requiring lifetime medical care. VICP provides compensation to people for injuries and deaths associated with certain vaccines for medical and other costs. This book examines how long it has taken to adjudicate claims and how claims have been adjudicated; the changes to the vaccine injury table; and how the balance of and spending from the Vaccine Injury Compensation Trust Fund have changed, among other objectives.

Pesticide Residues in Food: Data and Federal Oversight
Kathleen Morrison
In series: Public Health in the 21st Century
Hardcover: 978-1-63482-292-3, $145.00.
e-book: 978-1-63482-293-0, $145.00.
From 1970 to 2007, hundreds of millions of pounds of pesticides were applied annually to U.S. food crops to protect them from pests. To protect consumers, EPA sets standards—known as tolerances—for pesticide residues on foods. FSIS monitors meat, poultry, and processed egg products to ensure they do not violate EPA’s tolerances, and FDA monitors other foods, including fruits and vegetables. AMS gathers annual residue data for highly consumed foods, although not for enforcement purposes. This book examines what FDA data show with respect to pesticide residue violations in the foods that it regulates; what FSIS data show with respect to pesticide residue violations in the foods that it regulates; and what AMS data show with respect to pesticide residue levels in fruits and vegetables.

PM2.5: Role of Oxidative Stress in Health Effects and Prevention Strategy
Ying-Ji Li, Masakazu Umezawa, Hajime Takizawa, Ken Takeda and Tomoyuki Kawada (Department of Hygiene and Public Health, Nippon Medical School, Nezu, Bunkyo-ku, Tokyo, Japan)
In series: Public Health in the 21st Century
Hardcover: 978-1-63482-453-8, $190.00.
Air pollution has been associated with significant adverse health effects, including increased morbidity and mortality. The global increase in the prevalence of diseases that are associated with exposure to air pollution is of great concern. In particular, severe PM2.5 pollution occurs in Asian countries due to increasing emissions of air pollutants caused by the countries’ rapid economic growth. A number of studies have been performed to clarify the association between PM2.5 and disorders such as asthma, ischemic cardiovascular diseases, arteriosclerosis, cancer, and neurological disorders. It is important to protect populations that are susceptible to such pollution. While the characterization and monitoring of pollutant components currently dictates pollution control policies, it will be necessary to identify susceptible populations in order to adequately target prevention strategies for the health effects of air pollution. This book offers a comprehensive review of the recent advances in our understanding of the health effects of PM2.5, the role of oxidative stress in these effects, the contribution of ultrafine fractions of PM2.5 to the health effects, and discusses prevention strategies for these health effects. It also suggests further risk assessment, risk management, and novel policies for PM2.5 pollution, required to protect public health.

Preventing Sexual Violence at Institutions of Higher Education: Lessons and Tools
Russel Oakley
In series: Safety and Risk in Society
Sexual violence is a serious public health problem affecting the health and well-being of millions of individuals each year in the United States and throughout the world, with notably high rates among college students. The Division of Violence Prevention in the Centers for Disease Control and Prevention (CDC) addresses sexual violence with a focus on primary prevention, or preventing violence before it occurs, and emphasizes reducing rates of sexual violence at the population level rather than focusing solely on the health or safety of the individual. This book describes the best practices in developing, selecting, and implementing prevention strategies with the highest chance of successfully changing sexual violence in communities.

Public Health, Social Work and Health Inequalities
Bruce D. Friedman, Ph.D. and Joav Merrick, M.D.
(Director, Department of Social Work, California State University Bakersfield, Bakersfield, CA, United States)
In series: Public Health: Practices, Methods and Policies
Edited by: Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
Societal research has shown that there is a direct correlation between income disparities and health disparities. In other words: the poorer the population, the less healthy the population becomes. Over the last thirty years, there has been an increasing gap between the wealthy and poor in many industrialized societies. As a result, there has also been an increasing decline in the quality of health for these social orders. The Social Work and Health Inequalities Network (SWHIN) was created to combat the causes and consequences of socially unjust health disparities on an international basis. This is accomplished through a sustaining global network of professionals: researchers, educators, practitioners, policy makers and others work together to promote research and action around the world. The SWHIN aims to exchange information and resources (e.g. research evidence, policy statements, and emerging theories and practice models) to collaborate on the development and exchange of solutions for these health issues. The hope is to teach about these problems at all curricular levels and influence policy making wherever possible. This book brings together a combination of fifteen studies and policy reviews to fully understand the role that social work plays in assisting others, especially in fields where human health is concerned.

Quality of Life and Public Health: Assessment and Intervention
Erika da Silva Maciel and Jaqueline Girnos Sonati
(Centro Universitário Luterano de Palmas, Curso de Educação Física. CEULP - Centro Universitário Luterano de Palmas Plano Diretor Sul - Palmas, TO - Brasil)
In series: Public Health in the 21st Century
2015. 177 pp.
Hardcover: 978-1-63483-271-7, $110.00.
This book is designed to address the phenomenon of quality of life (QOL) as a central focus of public health. The complexity that involves the subject has aroused interest in various areas of knowledge, even though there is a consensus that the concept of QOL is subjective and transdisciplinary. This work has been organized following a demand that stimulates a discussion between areas, which tries to understand health and education as key factors to establish a freer and autonomous society. Additionally, it seeks to promote QOL in the perspective of better life quality in the context of public health. Therefore, this book presents and discusses theories around the theme QOL and its different facets. Its complexity is approached by different perspectives that will enable the reader to have contact with a transdisciplinary work about one of the most relevant topics to human health. In addition, we will present models of interventions carried out in Brazil to promote health focused on improving the perception of QOL in different population groups. We believe that these experiences can greatly contribute to the formation of healthcare academicians and also to the development of similar and much-needed strategies throughout the world.

Sexual Violence on Campus: Overview, Issues and Actions
Michael P. Watts
In series: Safety and Risk in Society
2015. 177 pp.
Hardcover: 978-1-63463-780-0, $145.00.
In recent years, a number of high-profile incidents of sexual violence at institutions of higher education (IHEs) have heightened congressional and administration scrutiny of the policies and procedures that IHEs currently have in place to address campus sexual violence and how these policies and procedures can be improved. Campus sexual violence is widely acknowledged to be a problem. However, reported data on the extent of sexual violence at IHEs varies considerably across studies for a variety of methodological and other reasons. Victims of sexual violence may suffer from a range of physical and mental health conditions including injuries, pregnancy, sexually transmitted diseases, post-traumatic stress disorder, depression, suicidality, and substance abuse. College students who are the victims of sexual violence may experience a decline in academic performance, and they may drop out, leave school, or transfer. This book provides an overview of issues and actions of sexual violence on campuses.

Tomorrow's Leaders: Service Leadership and Holistic Development in Chinese University Students
Daniel T.L. Shek, Andrew M.H. Siu and Joav Merrick (Medical Director, Health Services, Division for Intellectual and Developmental Disabilities, Ministry of Social Affairs and Social Services, Jerusalem, Israel)
In series: Public Health: Practices, Methods and Policies
Edited by: Joav Merrick (Medical Director, Ministry of Social Affairs, Jerusalem, Israel)
Hardcover: 978-1-63321-880-2, $170.00.
Research findings has shown that there are developmental issues and concerns regarding the development of university students in Hong Kong. First, there were behavioral and lifestyle problems of university students, including alcohol consumption, internet addiction, cyber-pornography, irregular sleep patterns, and interpersonal violence. Second, phenomena of mental health problems of university students, such as suicidal ideation, depression, and anxiety problems were observed. Third, some university students showed problems in setting personal goals, low self-confidence and preoccupation with materialistic values. Finally, egocentrism and lack of civic engagement was not uncommon among university students. How should we nurture university students? Against this background, a subject entitled “Tomorrow’s Leaders” was developed at The Hong Kong Polytechnic University in Hong Kong, China. The term “tomorrow’s leaders” was used because we believe that every student is (and can be) a leader and
development of positive youth development attributes is an important step. In this book you will find chapters describing this pilot project to nurture positive development and leadership among Chinese university students in Hong Kong.

**Women’s Health in the Majority World: Issues and Initiatives (Second Edition)**  
Laurie Elit and Jean Chamberlain Froese (McMaster University, Professor in the Department of Obstetrics and Gynecology, Ontario, Canada)  
In series: Public Health in the 21st Century  
This novel text outlines issues faced by the majority of women living in low and middle income countries. The unique aspect of this book is the numerous examples of innovative solutions that have been implemented in various global settings. The chapter authors are transparent concerning the barriers encountered and successes experienced. This book covers well known medical issues related to pregnancy (like maternal morbidity, and abortion, female genital cutting), HIV, and gynecologic cancers with a focus on cervical cancer prevention and treatment. This book goes beyond the medical diagnoses to explore the social determinants of health such as environment priorities like the water-health nexus, social ills like human trafficking, political influencers like the impact of advocacy and low and high resource countries’ government agendas and the book closes with a discussion on the bioethical dilemmas. This goal of this book is to enable the reader to understand that by improving the status of women how this benefits the whole family and community. We ultimately hope that the reader becomes engaged in the process of improving the status of these women’s.

**RELIGION**

**Christianity and Mental Health: Suffering, Joy, Inner Conflicts, Transcendence and Salvation**  
Kan-shing Yip (Department of Applied Social Sciences, The Hong Kong Polytechnic University, Hung Hom, Hong Kong, China)  
In series: Religion and Spirituality  
e-book: 978-1-63483-647-0. $190.00.  
Spirituality, Christianity and mental health have long been a concern in our society. This concern is increasingly pressing in recent decades as mental problems soar because of tension, anxiety, failure and frustration in our societies. In terms of Christian belief, spirituality is interpreted as the encounter with The Almighty God and the total recognition and surrender to the salvation of Jesus Christ. Thus, mental health, in terms of Christianity, should consist of two major different types. The first type is secular mental health. The second type should be a sacred and spiritual model of mental health. This book focuses on a combination of secular discussions as well as a biblical interpretation of Christianity and mental health, hardship and resilience, rejoice and sadness, freedom and inner conflict, sins and spiritual transcendence. Chapter one starts with a comprehensive review on the concept of secular mental health. The writer describes an initial conceptualization of sacred mental health within Christian belief and biblical articulation. Chapter one starts with a comprehensive review on the concept of secular mental health. The writer describes an initial conceptualization of sacred mental health within Christian belief and biblical articulation. Chapter Two is a full articulation of secular and Christian concepts of suffering described in the Book of Job. Chapter Three is a refined comparison among secular concepts about positive psychology and happiness, existential articulation on the meaning of life, as well as the full articulation of rejoice from imitation of Christ humility in Book of Philippians written by Paul in Holy Bible. Chapter Four is a comprehensive discussion on secular and sacred conflicts in Christians as well as freedom from a connection with the Holy Spirit and immersion with Jesus’ crucifixion and resurrection.

**Religion and Health: The Perspective of Happy Science Medicine**  
Yoichi Chida (Faculty of Human Happiness, Happy Science University, Department of Medical Science, Happy Smile Clinic, Chiba, Japan)  
In series: Health Psychology Research Focus  
e-cover: 978-1-63483-401-8. $82.00.  
e-book: 978-1-63483-460-5. $82.00.  
Historically, religion and medicine have been strongly connected. In more recent decades, various academics can be viewed as part of a larger movement to investigate the effects of religion on health in the field of complementary and alternative medicine. Such research is ongoing; but to date, the mechanisms underlying the association between religion and health remain unclear. A major reason for the lack of finding any mechanisms may be that religion and health literature provides no unified theoretical or theological basis from which to identify. Thus, to address this gap, Chapter 1 of this book briefly introduces the doctrine of “Happy Science”, a religious movement founded by Master Ryuho Okawa in 1986 that has since grown into one of the most influential religious organizations in Japan, with a membership from more than 100 countries worldwide. As you will see in Chapter 1, Happy Science theory has embraced the basic teachings of the major religions (e.g., Christianity, Buddhism, Islam, and Judaism). Moreover, this theory provides concrete tenets on the spiritual views of life, the purpose of living in this world, the structure of our mind and soul, and the relationships between mind and body. In Chapter 2, the Happy Science theory on diseases suggests that 70% or 80% of diseases are caused almost exclusively by an individual’s state of mind. Master Okawa has detailed how almost all modern diseases are caused by three factors—what we eat, lack of exercise, and stress—which indicates that psychological factors have a much stronger impact on the etiology and prognosis of illnesses than any physical, environmental or genetic factors per se. Chapter 3 explains the treatment theories and methods based on the basic tenets of Happy Science. In particular, since the Happy Science doctrine regards medical care as love, these treatment theories and methods are systematically introduced according to the stages of love: fundamental love (having spiritual views on life, smiling, and showing gratitude), spiritually nurturing love (having a healthy lifestyle, developing problem-solving skills, and making strategic withdrawals or adhering to Optimism), forgiving love (detaching from greed, forgiving, and developing altruism), and love incarnate (using positive willpower, faith and prayer, meditation, and collapse of karma). In addition, throughout this book, the author has provided case reports that make it easier to imagine how those with severe disorders can be miraculously cured through Happy Science Medicine.

**Returning to Spirituality**  
David Mushkelishvili (Georgian Academy of Sciences, Tbilisi, Georgia)  
In series: Religion and Spirituality  
Hardcover: 978-1-63482-147-6. $190.00.  
This book consists of articles that were presented at the International Conference dedicated to the 80th birth-anniversary and 35th anniversary since the enthronement of the Catholico-Patriarch of All Georgia Ilia II. The conference was held by the International Centre for Christian Studies at the Orthodox Church of Georgia in Tbilisi, Georgia, on 14-15 December, 2012. The conference had three working sections: religion and science; religion and culture; and “God,
Motherland and Man.” Participants of the conference were scholars from the USA, France, Italy, Rumania, Poland, Czechia, and Lithuania; participants included the most revered hierarchs, clergymen and representatives of the Georgian government. The work of the conference was summed up by the Round Table which outlined the tasks and methods of further cooperation. The participants of the Second International Conference expressed hope that modern society would fully estimate the dangers caused by the present lack of spirituality and will do all that is possible to restore spirituality in all spheres of public life. All these elements are examined and written about in this book.

**Scientific Meditations: Creationism Rightly Understood**

*John C. Caiazza, Ph.D. (Senior Lecturer in Philosophy, Rivier University, NH, USA)*

In series: *Religion and Spirituality*


Hardcover: 978-1-63483-494-0. $110.00.

Why would an atheist engineer become a religious believer — a priest in fact — and after his conversion, how would he understand the physical universe? This book is an attempt to answer that question in detail so as to avoid the difficult questions involved. The priest’s thoughts are expressed not in a straight forward monograph, but in a series of separate but tightly connected meditations and thoughts. The language is clear and deals directly with scientific issues but explains them in a religious sense. There are five areas by which the thoughts are organized including the hot button issue of evolution, which accepts the time-line of evolutionary development of 4½ billion years, but distinguishes between the evolutionary theory and the materialistic philosophy which is often but incorrectly attached to it. General issues regarding the supposed conflict between science and religion are dealt with next, including how a scientist might read the Bible. Five models of the relationship between science and religion are presented. Creationism is a highly contentious issue with some fundamentalists going so far as to claim the Bible states that the universe is less than 10,000 years old. This assertion is refuted in light of overwhelming scientific evidence to the contrary. A compromise solution is presented which accepts the Biblical account that God created the universe but also accepts the scientific time-line of cosmic and biological evolution. But how is a Christian to live in a time and social setting so dedicated to scientific understanding? Meditations on the question are offered in the fourth section, which includes thoughts on working in large corporations where job loss is a constant danger, but not an unusual event in one’s working life. In the fifth and final section, answers to objections, scientific and fundamentalist, are answered in dialog format to try to make the case for “creationism rightly understood.”

**Spirituality: Global Practices, Societal Attitudes and Effects on Health**

*Edith C. Roberts*

In series: *Religion and Spirituality*


Spirituality has only recently been conceptualized as a distinct construct from religion or religiosity. For centuries, the term religiosity referred to both personal and public attempts to relate to the divine essence of the universe. More recently, and first among the layperson, the term spirituality has been recognized as a private phenomenon and the term religion as a public phenomenon. This book discusses global practices of spirituality. It also examines societal attitudes toward spirituality and the effects it has on human health.

**Women in Islamic Societies: A Literature Review of Social Science Scholarship**

*Ruth Ulrich*

In series: *Religion and Society*


Hardcover: 978-1-63482-014-1. $120.00.
e-book: 978-1-63482-050-9. $120.00.

Half a billion Muslim women inhabit some 45 Muslim-majority countries, and another 30 or more countries have significant Muslim minorities, including, increasingly, countries in the developed West. This book provides a literature review of recent empirical social science scholarship that addresses the actualities of women’s lives in Muslim societies across multiple geographic regions. This book also discusses the differences in the Sunnis and Shiites in Islam.

**RUSSIA**

**Encyclopedia of Russia (3 Volume Set)**

*Samantha E. Caulfield*

In series: *Russian Political, Economic, and Security Issues*


Hardcover: 978-1-63463-955-2. $450.00.
e-book: 978-1-63482-001-1. $450.00.

This book presents important research on Russia. Topics discussed herein include the New START Treaty; Russia’s accession to the WTO; permanent normal trade relations; human rights practices; food and agricultural import regulations and standards; nuclear arms control; WTO enforcement actions; military equipment and technology sales; politics and economics under Putin; and Russia’s homegrown insurgency.

**SOCIAL TOPICS**

**Consumer Product Safety: Federal Oversight and Efficiency and Effectiveness Issues**

*Leila S. James*

In series: *Safety and Risk in Society*


Hardcover: 978-1-63482-055-4. $120.00.
e-book: 978-1-63482-056-1. $120.00.

The oversight of consumer product safety is a complex system involving many federal agencies. The United States Government Accountability Office identified eight agencies that have direct oversight responsibilities for consumer product safety: the Consumer Product Safety Commission (CPSC), Department of Housing and Urban Development, Environmental Protection Agency, Food and Drug Administration, National Highway Traffic Safety Administration (NHTSA), Nuclear Regulatory Commission, Pipeline and Hazardous Materials Safety Administration, and the U.S. Coast Guard (within the Department of Homeland Security). All eight agencies conduct regulatory activities to promote consumer product safety, such as rulemaking, standard setting, risk assessment, enforcement, and product recalls. This book examines which federal agencies oversee consumer product safety and their roles and responsibilities; the extent and effects of any fragmentation or overlap in the oversight of consumer products; and collaboration among agencies to address any negative effects of fragmentation or overlap. This book also discusses the Consumer Product Safety Improvement Act of 2008.
Abuse in dating relationships is common among adolescents. Dating abuse has a plethora of negative associated conditions or consequences. Despite the high prevalence rates and deleterious effects, however, teen dating abuse has been slow to gain recognition as a critical public-health and policy concern. Adult intimate-partner violence and marital abuse more generally have gained such recognition, as seen, especially in the past three decades, in policy, program, and legal responses, and in an extensive research literature base devoted to the problem. Adolescents, by comparison, were long overlooked as a population that suffers from relationship abuse. This book assesses and reviews research in teen dating violence.

Salvatore Hoffman
In series: Family Issues in the 21st Century
Hardcover: 978-1-63482-612-9. $120.00.
e-book: 978-1-63482-613-6. $120.00.
One of the central features of the Temporary Assistance for Needy Families (TANF) block grant is promoting work and job preparation for parents (mostly single mothers) in families that receive cash assistance. The TANF block grant requires states to engage a certain percentage of work-eligible cash assistance recipients in specified work-related activities, such as job search assistance and training. Yet, data suggest that more TANF recipients could receive assistance that would help them gain employment and reduce their dependence. This book reviews some approaches that have been identified as holding promise for engaging TANF recipients in employment and increasing their earnings and examines ways in which selected states and localities have used them; and identifies factors that influence their use.

U.S. International Food Aid Programs: Background, Issues and Select Assessments
Douglas Bennett
In series: Hunger and Poverty: Causes, Impacts and Eradication
Hardcover: 978-1-63483-269-4. $145.00.
e-book: 978-1-63483-270-0. $145.00.
For almost six decades, the United States has played a leading role in global efforts to alleviate hunger and malnutrition and to enhance world food security through international food aid assistance—primarily through either the donation or sale on concessional terms of U.S. agricultural commodities. Objectives of U.S. foreign food aid include providing emergency and humanitarian assistance in response to natural or manmade disasters and promoting agricultural development and food security. This book includes a description of U.S. international food aid programs under current law; several important policy issues related to U.S. international food aid; and describes Administration and congressional proposals intended to change the nature of U.S. food international aid. This book also reviews the U.S. Agency for International Development's (USAID) processes for awarding and modifying cash-based food assistance projects and assesses the extent to which USAID and its implementing partners have implemented financial controls to help ensure appropriate oversight of such projects.

Adoption Assistance for Professionals: Aspects, Considerations, and Resources
Rhonda Morton
In series: Family Issues in the 21st Century
Hardcover: 978-1-63482-714-0. $120.00.
e-book: 978-1-63482-715-7. $120.00.
Children leaving out-of-home care for adoption or other family permanency require preparation and support to help them understand the past events in their lives and to process feelings connected to their experiences of abuse and neglect, separation, loss, rejection, and abandonment. Child welfare, foster care, and adoption agencies often assume that permanent families will provide the healing environment for these children and youth, and these agencies spend considerable resources to recruit, train, and support foster and adoptive parents to provide legal permanency and well-being for these children. While a high percentage of these adoptions are successful—in that they are not legally dissolved—both children and families often struggle or suffer from stress that might have been mitigated by better preparation practices for all parties. This book discusses services for children and youth to address their readiness and preparation for permanent relationships. It also explores research, intervention strategies, and resources to assist professionals in preserving connections among siblings; provides a factsheet for child welfare professionals who work with families interested in adoption and/or who are about to receive a referral or foster or adoptive placement; discusses ways to help professionals guide birth and adoptive families who are contemplating open adoption or who are already having postadoption contact; and is intended to support adoption professionals in addressing the needs for postadoption services and meeting common challenges in their delivery.

 Advances in Sociology Research. Volume 16
Jared A. Jaworski
In series: Advances in Sociology Research
Hardcover: 978-1-63482-743-0. $160.00.
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 adolescent health risk behaviors in a migrant population; parent’s religious involvement, family socialization and adolescent behavioral problems in Hong Kong; social production of resilience and adjustment in social service users; foster caregiver perceptions of schooling problems; patriotism and Shanghai’s cooperation with Hong Kong; the dynamics of disability sport identity development; HIV testing’s influence on attitudes towards people living with HIV/AIDS in Zambia; sociological developments in the history of health and illness; and suicide in India.

 Advances in Sociology Research. Volume 17
Jared A. Jaworski
In series: Advances in Sociology Research
The authors of this book discuss the latest advances in sociology research. Chapters include research on empowering youth who were diagnosed with learning disabilities and attended mainstream schools; the study of territorial processes, such as land use and land use change, which can give rise to serious health problems, such as tuberculosis (TB) and diseases which relate to nutritional status, even in countries with high levels of development; child maltreatment from a
transactional, multmethod and translational perspective and a proposed research agenda that can advance innovations in how societies assess and respond to child maltreatment; the analysis of the root causes of the social movements in Spain, the different and similarities with historical and modern social movements, its achievements and failures and its impact on the democratic political system, social movements and left parties, providing a framework for setting future scenarios and challenges; a discussion based on the authors' research on whether university students cap benefit from engaging in romantic relationships; recent studies on the different factors affecting housework division; and the impact on racial heterogeneity, residential instability and socioeconomic status on incidents of criminal behavior and specific crime types, as well as policy implications.

‘Criminal Tribe’ to ‘Primitive Tribal Group’ and the Role of Welfare state: The Case of Lodhas in West Bengal, India
Santanu Panda and Abhijit Guha (Department of Anthropology, Vidyasagar University, West Bengal, India)
In series: Anthropology Research and Developments
Hardcover: 978-1-63463-685-8. $125.00.
The book deals with the marginalization of a minority tribal group (the Lodhas) in the West Bengal state of India and the role of a democratic welfare state in improving the living conditions of the tribe. The Lodha tribal community of West Bengal has a long history of drawing from attention of administrators, anthropologists, social activists and the media. In the colonial times, this community was designated as a ‘criminal tribe’ and carried the social stigma during the post-colonial period, although the Government created category after category (e.g. ‘Denotified’ and ‘Primitive Tribal Group’) to designate this marginalized community. The grass root level reality, which emerged from media reports, anthropologists’ accounts and activists’ literature, revealed that the marginalization of the Lodhas continued long after the Independence of the country. What seemed to lacking in the long narrative of the Lodhas is an empirical, comprehensive and specific location based field study on the assessment of the various attempts by the Government and the administration towards the process of development of this marginalized tribal community of West Bengal. Under this broader context, this book is a modest attempt to make a location based empirical assessment of the ground realities of the development of the Lodhas, which revealed from the beginning until today, the governmental attempts towards the improvement of the living conditions of the community which were misplaced, and as a result, the funds remained wasted and did not work at all, although variations in terms of utilization were also observed. It is therefore recommended that a more careful and down to earth approach which is sensitive towards the needs of the community should be undertaken to demarginalize the Lodhas of West Bengal. The book would be helpful for the graduate students and instructors in Social Anthropology, Sociology, Political Science, Economics, History, Public Administration, Development Studies, Social Work and Rural Development. It will be also useful for doctoral level students in the various branches of social science. The book would be of use to the government officials, policy makers, NGO workers and other development practitioners working in the field.

Dance of the Avatar: Embodying Gender and Culture through Dance
Imre Lázár, M.D., Ph.D. (Head of Medical Humanities Research Group, Inst. of Behavioral Sciences, Semmelweis University, Budapest, Hungary)
In series: Focus on Civilizations and Cultures
2015. 311 pp.
"Dance of the Avatar" is a comprehensive work and includes cultural studies and anthropology of revival movements from a historical perspective; it is focused on the Dance House phenomenon, which includes gender and ethnic aspects from a cultural and medical anthropological context. This book deals with the theory of tradition and cultural transfer of heritage through pedagogy and counterculture movements, with an emphasis on the the Wundtian contribution and its Hungarian counterparts. The Dance House phenomenon is presented through an auto-anthropological perspective, including the author's field work results. This book is recommended to those interested in the cultural studies of dance, subcultures and heritage, sociology of culture, ethnochoreology, cultural anthropology, medical anthropology, gender studies, religious studies and human ecology.

Federal Homeless Assistance Programs: Elements and Considerations
Sheryl Carter
In series: Housing Issues, Laws and Programs
2015. 177 pp.
e-book: 978-1-63482-256-5. $145.00.
The causes of homelessness and determining how best to assist those who find themselves homeless became particularly prominent, visible issues in the 1980s. The concept of homelessness may seem like a straightforward one, with individuals and families who have no place to live falling within the definition. However, the extent of homelessness in this country and how best to address it depend upon how one defines the condition of being homeless. This book discusses the elements and considerations taken within the federal homeless assistance programs.

Firstlight: From the Renaissance to Romanticism in Europe and the Pacific
Luke Strongman (Senior Lecturer, Communication, School of Social Sciences, Open Polytechnic, Lower Hutt, New Zealand)
In series: Focus on Civilizations and Cultures
Hardcover: 978-1-63482-015-8. $170.00.
The chapters of this book discuss in differing ways the transition in the second millennium of the Common Era from the Renaissance, through Enlightenment and subsequently, Romanticism, with a focus in Europe and the Pacific from the fifteenth to the nineteenth centuries. The book highlights salient features of each movement, using examples from the lives and works of critical exponents of each – artists, poets, playwrights, philosophers, engineers, navigators, and explorers. The aim has been to impart knowledge of each period, describe characteristics of the way in which the three movements transitioned from one to another through a particular thematic or topical focus, and outline central terms and concepts pertaining to them. In doing so, it is clear that the period of European and Pacific history that spanned the fifteenth to nineteenth centuries brought tremendous change on the human psyche and saw unprecedented development of industry, culture, arts, science and a flowering of the human imagination as well as a strengthening of the human capacity for reason. The Renaissance, and the transition between Enlightenment and Romanticism was indeed, a ‘firstlight’ after the long dark ages in Europe, America and the Pacific West; it provided the impetus for the forces of change that impel progress in the present day. To make ‘observations’ of key
figures and texts at various stages and events of the half-millennia in focus is also to reveal the perplexing change, society and human understanding of it was undergoing and to explore critical ideas and inventions of art and science that shaped the modern world.

**Gambling, Society and the Evolution of Risk-Taking**
*Peter Harvey, David Smith, and Sue Bertossa (Flinders Human Behaviour and Health Research Unit, Flinders University, South Australia)*


Hardcover: 978-1-63463-807-4. $170.00.

Gambling is emerging as a major industry around the world at a time when many of the more traditional economic pursuits are becoming less productive, but while the burgeoning gambling industry is certainly profitable and provides good investment opportunities and economic benefits for business and communities alike, it is timely that we look more closely at the overall benefits and costs of this phenomenon in modern society. In this book about the modern gambling business, a motif of the Colorado River and the Boulder/Hoover Dam is explored in the opening section, likening the benefits and risks of gambling to those of the damming of the Colorado to irrigate California. There can be no doubt that the project wrested many Americans from poverty and unemployment in the depression, built a world-leading engineering structure that served to help the desert bloom, so to speak, including, of course, the re-making of Las Vegas. With the wisdom of hindsight and our increasing environmental awareness, the choking of the Colorado has had its downsides as does the gambling industry as we already know.

**Initiation and Preservation: Modes of Cultural Philosophy**
*Arūnas Sveridiolas (Vilnius University, Lithuania)*

In series: *Focus on Civilizations and Cultures* 2015. 227 pp.

Hardcover: 978-1-63483-031-7. $190.00.

This book explores how a civilization, specifically, Western civilization accommodates multiple cultures, their interactions and transformations, historical controversies, temporary suppressions and rebirths. It offers a framework for understanding the history of the West and perspectives for invigorating the contemporary global debate on multiculturalism, whereby it challenges the popular view that history is no more than a multiplicity of discontinuous histories demonstrating that there are, even in view of the rejection of a particular culture, ways of sustaining continuity. Two fundamental concepts of the philosophy of culture — initiation and preservation — are shown to underscore the cultural and social essentials of human society. This two-tier analysis is first concerned with cultural texts (mythical, epic, tragic, poetical, religious, and philosophical) constitutive of a certain cultural profile; it then reveals the dynamics of being, looking into the ways entities emerge, endure and disappear. The exploration of the Pauline notion of sin, for example, shows that Paul’s sense of spatiotemporality is embedded in his polycentric culture, with the societies of Jews, Greeks, and Christians accommodated within this complex. The key focus is on acts and their transformation into behavioral modes, re-centering Plato’s thought on how an entity “takes part” in its idea, and how its temporal being can be described in terms of biological and cultural existence. The same duality of biology and culture defines the opposition between need and the interrelated concepts of goodness and desire. The equivalent of self-sustained existence in the worldly domain of time and change is actively sustained endurance. Ideal (cultural) human virtues are ranked higher than (biological) life. Homeric heroes, for example, establish a society founded on the value of glory, thereby embedding the cultural mindset of the generations to come, following their example in idealism. Endurance is secured in mythical, historical, religious, philosophical and legal discourses. As paradigms for human action, they incarnate essential human situations, implicitly involving the hearer, reader, or beholder into making choices and acting. Narrating a past dilemma, the text entangles the living ones into the world of its truths and values and thus sustains cultural continuity.

**International Perspectives on Race (and Racism): Historical and Contemporary Considerations in Education and Society**
*Diane Brook Napier (Retired Professor of Comparative and International Education, University of Georgia, Athens, Georgia, USA)*


Hardcover: 978-1-63483-126-0. $310.00.

This volume brings together cutting edge research, critical commentary and candid, personal accounts in a rich array of fresh perspectives on the dimensions of race and racism that have been prevalent in many societies (for instance, in education, other sectors of human resource development and mainstream versus minority life experiences). Contributions from countries and settings worldwide illustrate the diversity of experiences and situations regarding race that have existed in a given time period, and the complexity of injustice issues wherein race is one of many interrelated and entwined factors contributing to a situation in a given society. Sub-themes emerge in aspects such as language, religion, gender, age, culture, national origin and immigrant status, migration history, workforce demands and literature. Accounts of pre-colonial, colonial and post-colonial historical contexts — and the accompanying shifts in attitudes and policies toward racial groups, ethnic minority groups, indigenous peoples and other subaltern groups offer readers a view on significant changes in the world regarding diversity and identity issues. These matters are rooted in policy and practices of daily life in the context of globalization and in comparative perspective across countries. Insider perspectives, personal accounts and author testimonies from inside countries add a valuable personal dimension. Furthermore, this collection brings together cases in a wide range of settings, both in developed countries of the north and in developing countries and post-colonial states of the south, and a spread of perspectives from established scholars as well as new emerging scholars. Collectively, the contributions also focus on efforts to transcend the legacies of racism and injustice, exploitation and exclusion. The different cases reveal universal issues and common threads, and also contextually shaped distinctive features within different countries. The result is a panorama of insights on race and related issues as well as prospects for building post-racial societies, ranging from the global level and the local level within countries to personal dimensions. This collection is distinctive in that all regions of the world are represented, and it includes stories from the corners of the world that are seldom highlighted. This volume is a valuable resource illustrating historical and contemporary research along with thoughts on race and racism issues. While the interdisciplinary fields of Comparative and International Education and Post-Colonial Studies are the primary scholarly areas of focus, because of the interdisciplinary nature of the content, it will interest scholars and readers in a wide spectrum of fields including education, history, political science and policy studies, comparative literature, sociology, culture studies, literature, art, social work, development studies, global studies, third world studies and diversity and multiculturalism studies.

**Native Americans: Cultural Diversity, Health Issues and Challenges**
*Jerome Mendoza*

In series: *Focus on Civilizations and Cultures*
The first chapter of this book traces the rise of the idea of Manifest Destiny, showing how it contributed to the historical traumatization experienced by Native American tribes during an initial period in U.S. history (1790-1890). Illustrations of renewal and revitalization among present-day Native Americans, and an interpretation of their wider significance for our contemporary world are examined. In the second chapter, the relatedness of First America Inhabitants is explored with Pacific Islanders by using autosomal genetic markers: the HLA alleles. HLA is the most polymorphic human genetic system and is most useful for comparing populations' relatedness. The ethnic groups of Pacific Islanders, First America inhabitants and other World Populations were used. The authors of the third chapter use longitudinal data to examine mediational mechanisms that account for the relationship between ethnic identity and self-esteem among American Indian youth. The authors of the last chapter of this book explore the effect of food assistance on American Indian women's food choices and the role of food assistance programs in improving food choices and diet quality in vulnerable populations.

Native Americans: Developments, Policies and Research. Volume 5
Albert O. Hughes and Eric A. Sanders
In series: Native Americans: Developments, Policies and Research
This book presents current research on new developments and policies in the Native American population in the United States. Topics discussed in this compilation include the impact of the Affordable Care Act (ACA) on Indian health care; health care access for Native American veterans; and employment and training services on tribal lands.

Parenthood and Parenting in Croatia: A Developmental and Socio-cultural Perspective
Katica Lacković-Grgin (Department of Psychology, University of Zadar, Zadar, Croatia) and Zvjezdan Penezić (Department of Psychology, University of Zadar, Zadar, Croatia)
In series: Family Issues in the 21st Century
Parental behavior and the experience of parenthood have been areas of study worldwide for the last hundred years (and in Croatia for about forty years). Researchers started with the exploration of parental behavior and parenting styles, but a few decades later the research was broadened to include the experience of parenthood. Previously, when developmental psychology generally meant child psychology, the parenting phenomenon was hardly observed. After developmental psychology became a lifetime phenomenon, parenting was studied in all developmental stages. However, the first phase of parenting is still dominant in research. This fact is reflected in the contents of this monograph, which is a representative of Croatia’s most important theoretical and empirical research. The results of some of the research included have had a significant impact on social institutions that deal with issues of family, education and health. Special characteristics in the above mentioned research are: a) Earlier research, which was conducted mainly among mothers, was recently replaced by studies that include joint maternal and paternal influences and their distinct impact on the development of children as well as the effects of parental conflicts on the psychosocial functioning of children. b) Research of parenting and parenthood using a recent theoretical approach to parenting as well as the theory based research designs. c) Critical observations about the shortcomings in published research are presented while future directions of research are proposed.

Parenting: Behaviors, Cultural Influences and Impact on Childhood Health and Well-Being
Nicolette V. Roman, Ph.D. (Child and Family Studies Programme, Department of Social Work, University of the Western Cape, Cape Town, South Africa)
In series: Family Issues in the 21st Century
We know that parents affect the behavior, health and well-being of their children, but the findings of parent-child effects vary in different countries. Parenting has evolved into a science with prolific studies focusing on how and why parents behave in a particular way and the effects these behaviours have on the child. As a result of parenting effects, the cognitive, emotional, social, physical and general development of the child can be positive or negative. In this book, each chapter adds to our understanding of the parent-child relationship; the possible effects the behaviour of parents may have on the health and well-being of children are discussed. These influences are presented from the perspective of Diana Baumrind’s, a specialist of parenting typologies. The studies presented in this book provide a cultural perspective of parenting, highlighting the similarities and differences to other studies focusing on: • interventions for parents • adoption and foster care • the reciprocal nature between religiosity and politics and the family. Parenting: Behaviors, Cultural Influences and Impact on Childhood Health includes reviews and primary research studies conducted in South Africa, New Zealand, Canada and Hong Kong.

Parenting: Cultural Influences and Impact on Childhood Health and Well-Being
Fernando Garcia (Professor of Psychological Methods and Design of Research Studies, University of Valencia, Spain Department of Methodology of the Behavioral Sciences, Faculty of Psychology, Valencia, Spain)
In series: Focus on Civilizations and Cultures
Hardcover: 978-1-63482-493-4. $190.00.
This book presents abundant emergent research works of American, European and Latin American countries, and examine the results of the research, which include serious questioning of the most popular ideas about the theory of parenting styles proposed by Diana Baumrind. Following traditional parenting research approaches that examine how parents treat their children and how these children fit into society, the fourteen chapters of this book explore the various countries of North and South America (United States, Brazil and Peru) and Europe (Sweden, United Kingdom, Spain, Portugal, Slovenia, and the Czech Republic), and sampled people from various backgrounds (for example, adolescents at psychosocial risks, and elderly people), for determining who has the best parenting style. The authors consider different measures of parental behavior for different parenting styles (authoritative, indulgent, authoritarian, or neglectful) and a varied set of criteria to determine how their children adjust. Childhood health and well-being outcomes were as varied as academic achievement, self-esteem, drug use, internalization of values, forgiveness, adolescents’ scholar adjustment, child-to-parent violence and teen dating violence. The contributors of this book conclude that indulgent parenting styles are equal or even better than authoritative parenting styles, and highlight the importance of considering cultural influences when the
relationships between parenting and its impact on the well-being of children are analyzed.

**Peer-to-Peer Bullying and Harassment: Background and Federal Response Efforts**

*Audrey Robbins*

In series: *Bullying and Victimization*

2015. 201 pp.

Hardcover: 978-1-63483-669-2. $145.00.


Many Members of Congress have become increasingly concerned about what can be done to address student bullying. This concern has arisen in response to high-profile bullying incidents that have occurred in recent years, and due to a growing body of research on the negative consequences of school bullying. This book focuses on the government's efforts to enforce federal civil rights laws with respect to peer-to-peer violence based on race, national origin, sex, disability, religion, and sexual orientation or gender identity.

**Social Change: Perspectives, Challenges and Implications for the Future**

*Joel Wallace*

In series: *Social Issues, Justice and Status*

2015.

Hardcover: 978-1-63483-639-5. $190.00.


Different types of social change agents and catalysts in society operate in a wide range of sectors and industries. In the first chapter, some major theoretical perspectives in the study of social change and individual socioemotional functioning are reviewed. The authors of the second chapter explore the aforementioned agents and catalysts that can create a more meaningful and lasting impact in society if efforts, strategies and resources are aligned. In the third chapter, the effect of radical social change on the diffusion of professional norms across contexts is examined. The fourth chapter helps evaluators and program managers understand the importance of considering culture in program design and evaluations, with particular emphasis on culturally specific vulnerable populations. The fifth chapter studies two social change conceptions, very popular in sociological literature: modernity and modernization. Chapter 6 explores the effect of social changes and demographic variables on the importance of work outcomes. In Chapter 7, the authors describe the impact of social welfare and government trust in society on its citizens. The authors of Chapter 8 discuss the recent developments of school music education in China, focusing on Beijing and its long and rich history dating back more than 3,000 years. Chapter 9 aims to investigate the role of entrepreneurial ecosystem in the various steps of the development of a start-up and to verify the role of the social mission as an enabler factor in the enhancement of relationship with the actors in the ecosystem. In Chapter 10, the author theoretically develop and empirically test for the utility of the concept of social intermediaries (SI) in explaining social change. The last chapter of the book aims to give an account of the process of development, adaptation and change in the social structure at the microlevel, as a result of changes in the policies of development and the alteration of the global order.

**Temporary Assistance for Needy Families: Provisions and Policy Options**

*Patrick Santiago*

In series: *Family Issues in the 21st Century*


Softcover: 978-1-63482-435-4. $62.00.


The Temporary Assistance for Needy Families (TANF) block grant helps states fund, among other benefits and services, cash assistance for needy families with children. While there are some federal rules that determine who may qualify for TANF-funded cash assistance (e.g., the family must have a dependent child), states determine the financial eligibility criteria and cash assistance benefit amounts. There is a large amount of variation among the states in the income thresholds that determine whether a family is eligible for cash assistance and in the benefit amounts paid. This book describes state TANF financial eligibility rules and maximum benefit amounts; and discusses spending and policy options for TANF.

**The Walk of Shame**

*Mira Moshe (Ariel University of Samaria, Israel) and Nicoleta Corbu (National University of Political Studies and Public Administration, Romania)*

In series: *Psychology of Emotions, Motivations and Actions*


The term “walk of shame” is deeply rooted in the idea that shame is a difficult emotion stemming from a feeling of inferiority or social discomfort, which causes a person to wish to disappear, become invisible, be “swallowed up by the earth”. However, sometimes exactly at such a moment of disgrace, individuals are publicly exposed to the full extent of their misery and must walk “the walk of shame” witnessed by family, friends and acquaintances. Shame, considered by some to have genetic origins, is an integral part of social circumstances and settings in accordance with a set of values, patterns of thought and the individual’s physiological makeup. Shame is the result of familial, social and media processes. Thus the walk of shame does not take place privately behind closed doors, but on city sidewalks, in the workplace, in newspaper columns and on television and computer screens. It is not surprising, then, to discover that the tremendous power of shame has expropriated it from the individual’s control in the private sphere to the public sector, creating a collective punishing mechanism whose goal is to warn against undesirable behavior. Indeed, a person’s public humiliation is a form of punishment, a negative sanction leading to disgrace, debasement and mortification. This book discusses the walk of shame from a cultural perspective, focusing on contexts, strategies, images etc. that reveals the many facets of a controversial concept.

**Time, Life, and Civilization**

*Abir U. Igamberdiev, Ph.D. (Memorial University of Newfoundland, Canada, Department of Biology, St. John’s NL, Canada)*

In series: *Focus on Civilizations and Cultures*


Hardcover: 978-1-63463-830-2. $185.00.


This book considers the fundamental scientific and philosophical problems of the origins of life, consciousness, language, and civilization. It is a continuation of “Physics and Logic of Life,” published by Nova Science Publishers in 2012. Whereas the previous book discussed fundamental aspects of biology, the current volume aims to analyze connections between the biological and the societal worlds, and to clarify basic principles of the genesis of social structures. The physical basis and logic of life are discussed briefly in the first two chapters; then the discussion turns to the fundamental structures that ultimately determine the nature of cognition-based societies. The emergence of life initiates a creative process that exceeds the limits of computability. Biological evolution occurs as an unfolding of functional constraints in which dynamic parameters, possessing criteria of perfection and having selective values, are established. The genetic system arises as a semiotic structure with a high combinatorial
capacity for expansion and generation of new meanings in the course of individual development and evolutionary modification. Human language is a second natural semiotic system by which fundamental knowledge of the world is expressed, and which provides powerful means for its description and assimilation. The evolution of societies is a further expansion of language systems based on implementation of the structures of human self-reflection. These basic structures include the possibility of perceiving a world external to the Self and acting within it. The signification of conceptual entities is the starting point in the development of civilizations, and concrete patterns of signification determine features specific to particular human cultures. The evolutionary growth of information occurs via the open process of language games, in which interacting statements about the world determine continued increase of complexity. The universal language of music and its future role in global communication are discussed. This book is intended for theoretical biologists, sociologists, psychologists, specialists in semiotics and philosophers.

Western Civilization in the 21st Century
Andrew Targowski (President Emeritus of the ISCSC, Western Michigan University, Michigan, USA)
In series: Focus on Civilizations and Cultures
This book took the task of conceptualizing Western civilization in the 21st century. It examines Western Civilization and its encounters from a viewpoint of the impact of rising Global civilizations in the 21st century. This political and technological success of Western civilization in the last 500 years triggered a dream of spreading around the globe Democracy and liberal Capitalism. Western society was held together by Christian morality (regardless whether someone was a believer or a non-believer or agnostic). The medicine for all shortcomings faced by Western civilization in the 21st century is offered by Al Gore in his book "The Future: Six Drivers of Global Change" (2013). He thinks that inventions and technology will save Western Civilization. The author of this book argues that vice versa, the rise of certain technologies are the main reason for the decline of Western civilization. These kind of issues will be investigated in this book and the message is not optimistic, since Westerners, when are poor are wise, and when are better off are stupid. Hence, without practicing wisdom, Western civilization cannot be revived.

SPORTS
Sports Injuries: Prevention, Management and Risk Factors
Gabrielle Hopkins
In series: Sports and Athletics Preparation, Performance, and Psychology
Hardcover: 978-1-63463-305-5. $110.00.
Consistent physical activity and sport participation is essential for physiological health and mental well-being. Regular physical activity reduces the risk of hypokinetic diseases such as diabetes mellitus, coronary heart disease, osteoporosis and lower back pain. Unfortunately, however, participation in sport and physical activity lends itself to injuries, although it must be stressed that the benefits outweigh the associated maladies. There are many risk factors that predispose the sport enthusiast to injury, and these are classified as either extrinsic or intrinsic. Intrinsic risk factors are person-dependent factors (body mass, skeletal alignment, muscle strength) and rarely cause injuries, but significantly increase the risk of injury. Extrinsic factors include environmental conditions (extreme heat and/or cold, running or playing surface) and sport equipment that predispose people to injury. This book discusses the prevention, management and risk factors of injuries in sports.

SUBSTANCE ABUSE
ADHD and Fetal Alcohol Spectrum Disorders (FASD)
Kieran D. O’Malley (Consultant, So. & East Belfast Trust, Belfast, Northern Ireland)
In series: Alcohol and Drug Abuse
Hardcover: 978-1-59454-573-3. $195.00.
Softcover: 978-1-63463-491-5. $89.00.
This multi-author book will discuss the history and clinical presentation of Fetal Alcohol Spectrum Disorders (FASD) i.e Fetal Alcohol Syndrome (FAS) and Alcohol Related Neurodevelopmental Disorder (ARND). These developmental neuropsychiatric disorders result from prenatal exposure to alcohol during any gestational period of pregnancy. The book will particularly address the co-occurring presence of ADHD in patients with FASD. ADHD is the most frequent neuropsychiatric presentation of FASD throughout the lifespan and it is particularly difficult to manage because the underlying pathophysiology is related to prenatal neurotoxic brain injury. Although prenatal alcohol exposure, and the resulting FASD, is recognized as the commonest preventable cause of intellectual disability, many clinicians and educators are not aware that 75 to 80% of the patients with FASD have I.Q.s over 70. Thus, the neuropsychiatric presentation of FASD can often be unrecognized or misunderstood. FASD are the true clinical ‘masqueraders’ and ADHD is their most likely disguise! The authors are all experienced professionals from a wide range of disciplines working throughout the USA and Canada. They have been involved in the diagnosis, research and management of FASD for many years and this book will bring their collective knowledge regarding management from infancy to adulthood to an inter-professional audience.

Drug-Impaired Driving: Data and Reduction Strategies
Tobias H. Erickson
In series: Alcohol and Drug Abuse
Hardcover: 978-1-63482-871-0. $120.00.
e-book: 978-1-63482-872-7. $120.00.
The issue of alcohol-impaired driving has received broad attention over the years, but drug-impaired driving also contributes to fatalities and injuries from traffic crashes. However, knowledge about the drug-impaired driving problem is less advanced than for alcohol-impaired driving. This book discusses what is known about the extent of drug-impaired driving in the United States; challenges that exist for federal, state, and local agencies in addressing drug-impaired driving; and actions federal and state agencies have taken to address drug-impaired driving and what gaps exist in the federal response. This book also summarizes a series of studies undertaken by the National Highway Traffic Safety Administration to acquire the information needed to address the general problem of drug-impaired driving.
The Bengazi Terrorist Attacks: Separating Fact From Fiction (with accompanying CD-ROM)

Walter T. Ellis

In series: Terrorism, Hot Spots and Conflict-Related Issues

Hardcover: 978-1-63463-900-2. $120.00.
e-book: 978-1-63463-926-2. $120.00.
The House Permanent Select Committee on Intelligence ("HPSCI" or "the Committee") conducted a comprehensive and exhaustive investigation into the tragic attacks against two U.S. facilities in Bengazi, Libya on September 11-12, 2012. The nearly two-year investigation focused on the activities of the Intelligence Community ("IC") before, during, and after the attacks. During the course of thousands of hours of detailed investigation, HPSCI reviewed thousands of pages of intelligence assessments, cables, notes, and emails; held 20 Committee events and hearings; and conducted detailed interviews with senior intelligence officials and eyewitnesses to the attacks, including eight security personnel on the ground in Bengazi that night. This report details the findings and conclusions of HPSCI's investigation.

The Cost of War and Terror Operations Since 9-11

Jamie Valdez

In series: Terrorism, Hot Spots and Conflict-Related Issues

With enactment of the FY2014 Consolidated Appropriations Act on January 1, 2014, Congress has approved appropriations for the past 13 years of war that total $1.6 trillion for military operations, base support, weapons maintenance, training of Afghan and Iraq security forces, reconstruction, foreign aid, embassy costs, and veterans' health care for the war operations initiated since the 9/11 attacks. This book discusses the cost of Iraq, Afghanistan, and other global war of terror operations since 9/11 in detail, and provides information on the FY2015 funding to counter Ebola and the Islamic State (IS).

The Islamic State: Financial Aspects and U.S. Policy

Gerard Smith

In series: Terrorism, Hot Spots and Conflict-Related Issues

Hardcover: 978-1-63483-529-9. $120.00.
e-book: 978-1-63483-537-4. $120.00.
The Islamic State organization is the successor to Al Qaeda in Iraq (AQI). Countering the financial resources of the Islamic State, which has seized significant territory in Iraq and Syria and threatened to conduct attacks against the United States and its citizens, has become a significant national security priority for policymakers, including Members of Congress. By undermining the financial strength of the group, also known as ISIL or ISIS, policymakers seek to reduce its capability to conduct terrorist attacks, as well as to ultimately "degrade and ultimately destroy" the group. This book includes a comprehensive look at how the group generates revenue.

The Rise of ISIS: Background and Perspective from the UK and U.S

Christine Fuller

In series: Terrorism, Hot Spots and Conflict-Related Issues


TERRORISM

Authorization for Use of Military Force Against the Islamic State: Issues and Proposals

Tomas Mendoza

In series: Terrorism, Hot Spots and Conflict-Related Issues

Hardcover: 978-1-63483-556-5. $120.00.
e-book: 978-1-63483-557-2. $120.00.
In 2014, the armed offensive of the Islamic State (IS, also known as ISIL, ISIS, or Daesh) in northern and western Iraq and northeastern Syria raised significant concerns for the United States. After first ordering multiple deployments of U.S. troops to Iraq to provide security to diplomatic personnel and facilities, advise Iraqi security forces, and conduct intelligence gathering and reconnaissance, President Obama began ordering U.S. military airstrikes on IS forces in Iraq in August 2014. Later in September, after laying out plans for expanded use of military force against the Islamic State in a televised speech to the American people, the President ordered U.S. military airstrikes in Syria against both IS forces and forces of the “Khorasan Group,” identified by the President as part of Al Qaeda. The intensified U.S. military engagement has raised numerous questions in Congress and beyond about the President’s authority to use military force against the Islamic State. This book discusses the issues and current proposals for the use of military force against the Islamic State.

Nicotine Dependence, Smoking Cessation and Effects of Secondhand Smoke

Carlton L. Owens

In series: Substance Abuse Assessment, Interventions and Treatment

Hardcover: 978-1-63482-642-6. $110.00.
The clinical course of nicotine dependence, nicotine withdrawal and smoking cessation varies significantly between men and women smokers. Recent research has also suggested that certain personality traits and experiences predict and help maintain smoking behavior, thus leading to dependence and negative health consequences. The chapters in this book include research on the correlation between people’s early engagement in smoking behavior and later problematic levels of use, the role of hormone therapy (HT) to treat smoking/nicotine dependence; the association between active and passive water pipe tobacco smoking and health issues that might develop later on (as well as the similarities and differences between tobacco smoking and cigarette smoking). Worldwide tobacco use, production and consumption are continuing. Of approximately 1.2 billion smokers in the world, about half of them will die from diseases caused by smoking. The authors describe the extent of nicotine dependence, the neurobiology of nicotine dependence, which is important for understanding tobacco addiction and its treatment, and describe the pharmacological and non-pharmacological treatments of nicotine dependence, including electronic cigarettes. The final two chapters detail the chemical composition and health risks associated with secondhand smoke (SHS) exposure. These chapters address the impact of SHS on children in particular, as well as the deleterious effect on workers’ health that often takes place in indoor environments, and finally, recent global public policies that have been implemented on tobacco control are addressed.

The Islamic State: Financial Aspects and U.S. Policy

Gerard Smith

In series: Terrorism, Hot Spots and Conflict-Related Issues

Hardcover: 978-1-63483-529-9. $120.00.
e-book: 978-1-63483-537-4. $120.00.
The Islamic State organization is the successor to Al Qaeda in Iraq (AQI). Countering the financial resources of the Islamic State, which has seized significant territory in Iraq and Syria and threatened to conduct attacks against the United States and its citizens, has become a significant national security priority for policymakers, including Members of Congress. By undermining the financial strength of the group, also known as ISIL or ISIS, policymakers seek to reduce its capability to conduct terrorist attacks, as well as to ultimately “degrade and ultimately destroy” the group. This book discusses the cost of Iraq, Afghanistan, and other global war of terror operations since 9/11 in detail, and provides information on the FY2015 funding to counter Ebola and the Islamic State (IS).
The Islamic State (IS, aka the Islamic State of Iraq and the Levant, ISIL/ISIS) is a transnational Sunni Islamist insurgent and terrorist group that has expanded its control over areas of parts of Iraq and Syria since 2013, threatening the wider region. There is debate over the degree to which the Islamic State organization might represent a direct terrorist threat to the U.S. homeland or to U.S. facilities and personnel in the region. ISIS has its roots in the Sunni rebellion against the U.S.-led occupation after the 2003 invasion. Some believe, however, that ISIS is a useful cover for former high-ranking elements of Saddam Hussein's dismantled Sunni-dominated security forces, determined to regain their former position. ISIS has taken advantage of chaos in Syria to occupy large areas of Syrian Sunni-majority territory and set up a claimed capital there. The forces ranged against ISIS make further progress more difficult, but differing policies pursued by its opponents in the region make a coordinated response difficult. Inherent contradictions exist, particularly because of the differing strategic alignments of the respective governments of Iraq and Syria. This book provides background on ISIS and its subsequent surge then examines international reaction and military action against ISIS.

**TOURISM**

**Ecotourism: Practices, Benefits and Environmental Impacts**
*Shannon C. Brophy*
In series: *Tourism and Hospitality Development and Management*
Hardcover: 978-1-63482-027-1. $160.00.
Tourism is defined as the set of activities of persons traveling to and staying for the sake of rest, leisure, culture, health, etc. in places that are outside their usual environment for a period not exceeding one year. Ecotourism or green tourism is a form of sustainable tourism, focused on the discovery and preservation of nature and ecosystems. Ecotourism’s main objective is to discover and preserve different forms of natural resources such as fascinating landscapes, local flora and fauna, while respecting ecosystems, even helping to restore, in a voluntary approach. This book examines the practices of ecotourism as well as its benefits and impacts on the environment.

**Handbook on Tourism Development and Management**
*Kerri Hayden Collins*
In series: *Tourism and Hospitality Development and Management*
The fast growth of the tourism industry over the past decades is one of the most remarkable economic phenomena of our time. This handbook discusses several topics on the development of tourism and management. Some of the topics discussed include managing heritage and culture; the challenges climate change arises for tourism destinations; sustainability; rural development through tourism; barriers and drivers to sustainable tourism development; and the role of tourism in the formation of environmental outlook.

**On the Nature Trail: Converting the Rural into the Ecological through a State Tourism Policy**
*Rodrigo Tioniol and Carlos Alberto Steil*
*(Anthropologist, Federal University of Rio Grande do Sul)*
In series: *Tourism and Hospitality Development and Management*
Hardcover: 978-1-63482-300-5. $160.00.
This book presents an ethnography of nature walks in a rural area of Paraná state, southern Brazil. The event is organized by government agencies responsible for implementing public policies for farming, tourism, the environment and culture, as well as by the local community of small farmers. However, a deeper inquiry into the layers of experiences and practices accumulated over the history of human walking reveals a multiplicity of lines interwoven into this event. Over the course of this book, the authors have presented different aspects and epistemological consequences of the phrase “walking is knowing.”

**Strategic Marketing in Hospitality and Tourism: Building a ‘SMART’ Online Agenda**
*Deepak Chhabra (Arizona State University, Phoenix, AZ, USA)*
In series: *Hospitality, Tourism and Marketing Studies*
Hardcover: 978-1-63482-072-1. $170.00.
This book is a grand probe into the dynamic and evolving nature of strategic marketing in the hospitality and tourism industry. Strategic dimensions of marketing are presented and Internet is treated as an important part of the strategic marketing iceberg to promote a hybrid marketing stance by incorporating traditional marketing techniques. Multiple components of marketing are identified to formulate a strategic online marketing model that is resilient and holds potential to adapt as contemporary environments change. This book is unique in that it proposes a broader treatment of online marketing initiatives by integrating its various dimensions and treating social media both as a cash cow and as a crucial investment tool within an integrated tourism system environment. Special insights are offered on sustainability perspectives/initiatives, contemporary social media marketing strategies, and growth of mobile systems. The distinct characteristics of this piece of scholarly work lie in its: 1) update of the most recent progress made in the field of strategic marketing with special emphasis on online marketing strategies, 2) presentation of a strategic online marketing model that embraces a holistic tourism systems approach, 3) offering global insights into the manner strategic online marketing perspectives are pursued by different tourism sectors, and 4) developing a smart marketing paradigm that integrates different tourism sectors to promote value chain offerings in a sustainable manner. Particularly, this book makes a unique contribution to existing literature by furthering the strategic online marketing model to embrace a smart systems perspective.

**When East Meets West: Cross-Cultural Variation in Service Encounter Interactions**
*Thuy-Huong Truong (College of Business, Victoria University, Melbourne, Australia)*
In series: *Hospitality, Tourism and Marketing Studies*
Hardcover: 978-1-63483-320-2. $110.00.
Vietnam attracts visitors from various source markets and such diversity has become commonplace in major tourism receiving areas. The practice of international tourism generally implies cross-cultural
experiences on the part of both tourists and service providers. Given the marked differences between the cultures of Asian and Western travelers, and since Asian cultures are heterogeneous, an understanding of the impact of rules of behaviour between international travelers from different cultural backgrounds will be critical for the effective operation of tourism in Vietnam. This book investigates the major cultural differences between Vietnamese hosts and Chinese, French and American travelers that impinge upon host-guest social and cultural interactions. Within the tourism literature, markets have been divided on the basis of psychographics, geographic and behavioural characteristics. Amongst these methods, the common ones are nationality, benefits sought, tourist role and social class, with nationality and rules of social interaction (or rules of behaviour) being the most important segmentation variables to be included. This book has both practical and academic significance. Drawing upon the marketing, tourism, and cultural studies literature and examining cultural values in tourism settings, the research presented in this book provides some strategic directions for tourism managers and marketers. From a theoretical perspective, this book provides an enriched understanding of Rokeach’s and Argyle’s models. These instruments have previously been applied in the fields of sociology, psychology, and marketing. In the present case, these models are used with some modifications to measure the cross-cultural service interactions and the associated insights that are useful for tourism researchers, developers, marketers, and managers. This book is evidence based and can serve as a guide to meet the needs of Asian and Western tourists with particular reference to the important influence of cultural backgrounds and rules of behaviour on tourist-host service interactions in cross-cultural settings. It applies the empirically based models to development-related challenges confronting the tourism sector.

TRANSPORTATION

Adaptive Roadway Lighting: Implementation Guidelines and Design Criteria
Joanne Hodges
In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit
Hardcover: 978-1-63483-436-0. $120.00.
e-book: 978-1-63483-437-7. $120.00.
This book provides guidelines for the implementation of an adaptive lighting system for roadway lighting. Based on the analysis of crashes and lighting performance, a series of criteria and the associated design levels have been developed to provide an approach for light level selection and the adjustability of the light level based on the needs of the driving environment. The application, the technology needs, the benefit cost, the legal implications of adaptive lighting, as well as the data, the analysis, and the developed methodology are all considered in this book.

Air Traffic Control: Stakeholders’ Perspectives and Options for Reform
Cristina Garner
In series: Transportation Issues, Policies and R&D
Hardcover: 978-1-63463-315-4. $145.00.
The Federal Aviation Administration’s (FAA) Air Traffic Organization (ATO) provides air traffic control (ATC) services within U.S. and certain international airspace. U.S. airspace is the most expansive in the world, covering roughly 30.2 million square miles that make up more than 17 percent of the world’s airspace. Within that airspace, FAA air traffic controllers handle roughly 50,000 operations daily. As the demands on the air traffic system have changed over time, Congress and several presidential administrations have sought reforms to improve safety and efficiency and to accelerate modernization projects. Over the past two decades, U.S. aviation stakeholders have debated whether the FAA should be the entity in the United States that operates and modernizes the ATC system. During this period, the Government Accountability Office (GAO) reported on challenges FAA has faced in operating and modernizing the ATC system. FAA reorganized several times in attempts to improve its performance and implement an initiative to modernize the ATC system, known as NextGen. Recent budgetary pressures have rekindled industry debate about FAA’s efficiency in operating and modernizing the ATC system. This book provides perspectives from a wide range of stakeholders on the performance of the ATC system and the NextGen modernization initiative and any challenges FAA may face in managing these activities and potential changes that could improve the performance of the ATC system, including the NextGen modernization initiative.

Airport Improvements: Financing Sources and Considerations
Ross P. Alvarez
In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit
Hardcover: 978-1-63482-716-4. $120.00.
e-book: 978-1-63482-717-1. $120.00.
The Airport Improvement Program (AIP) has been providing federal grants for airport development and planning since the passage of the Airport and Airway Improvement Act of 1982. AIP funding is usually spent on projects that support aircraft operations such as runways, taxiways, aprons, noise abatement, land purchase, and safety or emergency equipment. The funds obligated for the AIP are drawn from the airport and airway trust fund, which is supported by a variety of user fees and fuel taxes. This book provides an overview of airport improvement financing, with emphasis on AIP and the related passenger facility charges. It also discusses some ongoing airport issues that are likely to be included in a future FAA reauthorization debate; the potential effects of Passenger Facility Charges (PFCs) cap increases; how well the current PFC collection process works; and alternative PFC collection methods.

Aviation Security Considerations: Expedited Passenger Screening and Modification of Prohibited Items List
Irene Simmons
In series: Transportation Issues, Policies and R&D
2015. 89 pp.
The Transportation Security Administration (TSA), within the Department of Homeland Security, screens or oversees the screening of more than 650 million air passengers annually at more than 450 airports nationwide, and attempts to balance its aviation security mission with the freedom of movement for people and commerce. In 2011, TSA began developing new security procedures intended to strengthen security and improve the passenger experience by shortening lines and wait times. These new procedures apply risk-based, intelligence-driven screening concepts and enhance the use of technology to determine passenger risk prior to travel. As part of its responsibilities for securing civil aviation, TSA ensures that all passengers and their accessible property are screened and prohibits individuals from carrying onto aircraft items that it determines to be a threat. TSA maintains a public list of such items, known as the Prohibited Items List (PIL), and updates it as necessary. This book examines, among other things, how TSA has developed, implemented, and used expedited screening; how TSA assesses passenger risk; and the extent to which TSA has determined the Managed Inclusion...
system’s effectiveness. Furthermore, the book examines on what basis TSA modifies the PIL and the extent to which TSA assessed risk when considering recent modifications to the PIL; and the extent to which TSA involved stakeholders when considering these modifications.

Bridge Research and Development for 30 Years
Zhang Zhe (Dalian University of Technology, Dalian, China)
In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit
Hardcover: 978-1-63482-956-4. $190.00.
This book introduces 53 bridges that the author designed during his period teaching at Dalian University of Technology (1984-2014). The bridges have unique features; some bridges are the first of their kind in China, while the others are the biggest in size. For example, Jinma Bridge is the longest single concrete, single-plane, cable-stayed bridge in the world and Xinghai Bridge is the first double-deck, steel truss suspension bridge being constructed in the Sea of China. Innovation and reasonable structure designs must meet the requirements of applicability, economy, safety, artistic appearance and endurance. Innovation and rational stress are the main concern when considering bridge functionality. Only innovation can make new bridges surpass previously designed bridges. Only rational stress can save materials and reach the requirements of economy, safety and endurance. Teachers, students and engineers engaged in bridge engineering will be inspired from the designing concepts and methods within this book. The author compiles thirty years of work and dedication in the field and shares his discoveries with the readers who are interested in bridge design and functionality.

Federal and State Environmental Reviews of Highway Projects: Comparison of Requirements
Marlene Wilkinson
In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit
2015. 146 pp.
Hardcover: 978-1-63482-390-6. $120.00.
e-book: 978-1-63482-391-3. $120.00.
Three factors—project funding sources and project characteristics, and whether a state allows the adoption of federal review documents generally determine whether a highway project needs a federal environmental review under the National Environmental Policy Act (NEPA) or a state environmental review under state law, or both. This book focuses on environmental reviews of highway projects in states with SEPAs and addresses factors determining whether federal or state environmental reviews are required; how state and federal review requirements compare; and the extent of any duplication in federal and state reviews, including frequency and cost. This book also discusses the role of the environmental review process in federally funded highway projects.

Hybrid Vehicles and Hybrid Electric Vehicles: New Developments, Energy Management and Emerging Technologies
Hilda Bridges
In series: Electrical Engineering Developments
Hardcover: 978-1-63482-157-5. $110.00.
e-book: 978-1-63482-201-5. $110.00.
With the ever-increasing worldwide demand for energy, and the looming crisis in petroleum supplies, energy storage is emerging as an important area of research. Due to ever increasing concerns on energy conservation and environmental protection, the hybrid vehicle (HV) is a widely accepted interim solution for evolving from the conventional internal combustion engine (ICE) vehicle to the clean electric vehicle. This book discusses new developments, energy management and emerging technologies of hybrid vehicles and hybrid electric vehicles.

Innovative Methods for Improvement of Technical, Economic and Ecological Efficiency of Motor Cars
Ivane Gorgidze and Tamar Lominadze (Georgian Technical University, Georgia)
In series: Transportation Issues, Policies and R&D
Hardcover: 978-1-63463-671-1. $125.00.
e-book: 978-1-63463-722-0. $125.00.
Automobile transport causes damage to both humans and nature due to road accidents and air pollution by exhaust gases, as well as by expanding consumption of non-recoverable natural resources in the form of liquid and gas fuels. For solving such problems there are represented strict requirements for the reliability and durability, fuel efficiency, maintenance efficiency, traffic safety and ecological compatibility of vehicles. All of these requirements can be united under the following name: requirements for motor car efficiency. This book includes scientific articles covering the results of elaboration and research of innovative methods for technical, economic and ecological efficiency of vehicles. Among these methods one can particularly note the method of production of motor oils on the basis of amorphous nano-dispersed carbon, based on the new phenomenon discovered by the authors - the tribosynthetic of graphite-diamond secondary surface structures having highly effective multifunctional tribological mechanism of action (known as the “loseibidze-Kutelia effect”). This book will play an important role in solving the problems concerning the improvement of motor car efficiency.

Motor Carrier Safety: Oversight of High Risk and "Chameleon" Carriers
Pamela Sanders
In series: Transportation Issues, Policies and R&D
Hardcover: 978-1-63483-314-1. $185.00.
The Federal Motor Carrier Safety Administration (FMCSA) has taken steps toward better oversight of motor carriers by establishing the Compliance, Safety, Accountability (CSA) and chameleon carrier vetting programs; however, FMCSA could improve its oversight to better target high risk carriers. The CSA program oversees carriers’ safety performance through roadside inspections and crash investigations, and issues violations when instances of noncompliance with safety regulations are found. CSA provides FMCSA, state safety authorities, and the industry with valuable information regarding carriers’ performance on the road. This book examines the effectiveness of the CSA program in assessing safety risk for motor carriers. For years, some motor carriers have registered and been operating illegally in interstate commerce by using a new identity in an effort to disguise their former identity and evade enforcement actions issued against them by the FMCSA. Such carriers are referred to as chameleon carriers and may include interstate passenger carriers, household goods carriers, or freight truck carriers. This book examines the prevalence of chameleon carriers; how well FMCSA’s investigative programs are designed to identify suspected chameleon carriers; and what constraints, if any, FMCSA faces in pursuing enforcement actions against suspected chameleon carriers.

Natural Gas-powered Cars and Trucks: Options and Issues
Hayley Ackerman
In series: Transportation Issues, Policies and R&D
The increase in domestic supplies of natural gas has raised new interest in expanding its use in the transportation sector. This book considers issues related to wider use of natural gas as a fuel in passenger cars and commercial vehicles. This book is designed to help fleets understand the cost factors associated with fueling infrastructure for compressed natural gas (CNG) vehicles. It provides estimated cost ranges for various sizes and types of CNG fueling stations and an overview of factors that contribute to the total cost of an installed station; and describes how the National Renewable Energy Laboratory (NREL) used the VICE model to establish guidance for fleets making decisions about using CNG.

Oil and Gas Transportation: Pipeline and Rail Infrastructure Issues

Elton Simmons
In series: Transportation Issues, Policies and R&D
Hardcover: 978-1-63463-841-8. $120.00.
e-book: 978-1-63463-885-2. $120.00.
Increased oil and gas production presents challenges for transportation infrastructure because some of this increase is in areas with limited transportation linkages. Technology advancements such as horizontal drilling and hydraulic fracturing (pumping water, sand, and chemicals into wells to fracture underground rock formations and allow oil or gas to flow) have allowed companies to extract oil and gas from shale and other tight geological formations. This book examines overall challenges that increased oil and gas production may pose for transportation infrastructure; specific pipeline safety risks and how the U.S. Department of Transportation (DOT) is addressing them; and specific rail safety risks and how DOT is addressing them.

Performance-Based Transportation Programs: Assessments of Approaches and Challenges

Travis Schmidt
In series: Transportation Issues, Policies and R&D
Hardcover: 978-1-63482-722-5. $145.00.
In fiscal year 2013, the Department of Transportation (DOT) provided about $50 billion to states and other grantees (such as metropolitan planning organizations and transit agencies) to support highway and transit infrastructure and safety. However, it is not clear if this funding has improved system performance because, in part, these programs have lacked links to performance and national goals. This book examines the progress that DOT has made in developing a national performance-based approach to surface transportation; and the challenges states and other grantees report facing in implementing this approach. This book also reports on the extent to which federal transit programs use performance information in making decisions about funding distribution and in evaluating the programs’ effectiveness; mechanisms for making these programs more performance based; and strategies for supporting their successful implementation; and how selected U.S. and foreign transit agencies have used performance measurement in their planning and decisions, and their views on the federal role in transit.

Red Light Camera Systems: Traffic Safety Evaluation and Operational Guidelines

Cynthia Munoz
In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit
Hardcover: 978-1-63483-448-3. $145.00.
e-book: 978-1-63483-449-0. $145.00.
Red light running is one of the major causes of crashes, deaths, and injuries at signalized intersections. The Federal Highway Administration (FHWA) and National Highway Traffic Safety Administration (NHTSA) support a comprehensive approach to intersection safety that incorporates engineering, education, and enforcement countermeasures to prevent red light running and improve intersection safety. Red light cameras can be a very effective countermeasure to prevent red light running. There are a number of studies that indicate reduction in crashes at signalized intersections due to red light cameras. The fundamental objective of the research in this book is to determine the effectiveness of RLC systems in reducing crashes. A description of all project efforts is described in this book.

The Highway Trust Fund: Financial Condition and Use of Funds

Jonathan Caulfield
In series: Transportation Issues, Policies and R&D
2015. 87 pp.
Softcover: 978-1-63482-012-7. $62.00.
In recent years, dedicated revenues to the Highway Trust Fund have been eroding, resulting in fewer resources to fund surface transportation projects and requiring, between 2008 and 2014, transfers of over $50 billion in general revenues. This book reviews how Highway Trust Fund monies are being used to help ensure that sound choices and investment decisions about future funding are made. The book examines what is known about the types of projects, activities, and federal administrative functions and expenses supported by the Department of Transportation (DOT) using Highway Trust Fund monies in fiscal year 2013.

Transit System Resilience: Development Efforts and Challenges

Kayla Hodges
In series: Transportation Infrastructure - Roads, Highways, Bridges, Airports and Mass Transit
Softcover: 978-1-63482-567-2. $62.00.
Public transit systems, which receive funding from the federal government, are vulnerable to catastrophic events, as demonstrated by the impact Hurricane Sandy and other events have had on transit systems. These events highlight our reliance on transit systems for access to jobs, medical care, and other services, as well as the cost of recovering from these events. Building resilience—the ability to prepare for, respond to, recover from, and mitigate the risk of catastrophic events—is one strategy to help limit the nation’s fiscal exposure to catastrophic events. This book examines how DHS and DOT help transit agencies make their systems resilient; actions selected transit agencies take to make their systems resilient; and challenges transit agencies face with making their systems resilient. It also addresses the progress the Department of Transportation has made allocating, obligating, and disbursing the Disaster Relief Appropriations Act surface transportation funds; how the Federal Transit Administration’s (FTA) new Public Transportation Emergency Relief program compares to the Federal Emergency Management Agency’s (FEMA) and Federal Highway Administration’s (FHWA) emergency relief programs; and the extent to which FTA and FEMA have implemented their memorandum of agreement to coordinate their roles and responsibilities when providing assistance to transit agencies.
Transportation Services for Older Adults and Nonemergency Medical Transportation: Selected Analyses
Patricia Harris-Bowen
In series: Transportation Issues, Policies and R&D
2015. 120 pp.
Hardcover: 978-1-63482-569-6. $120.00.
e-book: 978-1-63482-570-2. $120.00.
As the U.S. population ages, access to safe and reliable transportation alternatives is critical to helping older adults remain in their homes as long as possible. HHS, DOT, VA, and other federal agencies may provide funds to state and local entities to help older adults access transportation. This book examines the federal programs that provide funding for transportation services for older adults and the extent to which the programs that fund these services are coordinated; and how state and local transportation agencies and aging network organizations in selected states coordinate transportation for older adults and the challenges they face in coordinating or providing these services. The book also addresses the federal programs that provide funding for NEMT services; how federal agencies are coordinating NEMT services; and how NEMT services are coordinated at the state and local levels and the challenges to coordination.

U.S. Transit, Transportation and Infrastructure: Considerations and Developments. Volume 6
Jordan G. Clark and Ian R. Rodriguez
In series: U.S. Transit, Transportation and Infrastructure: Considerations and Developments
Hardcover: 978-1-63482-402-6. $120.00.
e-book: 978-1-63482-403-3. $120.00.
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 state-level driver data and the effect of look-back periods on recidivism prevalence; restraint use and minimum drinking age laws; electronic stability control; mobile device use while driving; the impact of fuel price increases on the aviation industry; aviation safety; and the assessment of potential mariner-training needs.

Rural America: Aspects, Outlooks and Development. Volume 6
Cliford L. Lewis and Eric M. Jackson
In series: Rural America: Aspects, Outlooks and Development
Hardcover: 978-1-63483-671-5. $185.00.
Our rural communities are home to some of the most hard working and fiercely self-reliant Americans in the United States. Strong and secure rural communities are essential to creating an economy built to last that rewards hard work and responsibility—not outsourcing, loopholes, and risky financial deals. While the security of the middle class has been threatened by the irresponsible financial collapse and the worst economic downturn since the Great Depression, rural Americans continue to come together to work hard and make ends meet. The values that have helped hard-working, responsible families weather the storm continue to move our economy forward. This book discusses factors affecting former residents’ returning to rural communities; rural employment trends in recession and recovery; the 2014 Farm Bill rural development provisions; the secure rural schools and community self-determination act of 2000 and the rural education achievement program.

Women

Victorian Gender Ideology and Literature
Aşkın Haluk Yıldırım (Director of School of Foreign Languages, İzmir Katip Çelebi University, İzmir, Turkey)
In series: Women’s Issues
Hardcover: 978-1-63482-618-1. $190.00.
The origins of discrimination against women date back to ancient times. Throughout history, women have been exploited sexually, physically, economically, and socially under the shadow of patriarchal doctrines. Religion, tradition and the codes of morality have been misused to ensure the slavery of women. Although today the social and economic status of women is better than it was in the past, they are still the primary victims of abuse, humiliation, violence, and oppression. The Victorian era is one of the most debated periods in history of womanly struggle against discrimination. While it was considered an age of progress and prosperity, it was a time of misery and poverty as well. Victorian England was one of the hottest spots of the Woman Question. At the time, women were forced to lead a passive existence dictated by the norms of Victorian gender ideology. Transformations in science and technology during this period were contradictory to social beliefs and values. Despite the astonishing progress experienced during this period, the rigidly defined roles of men and women in Victorian society remained almost the same until the beginning of twentieth century. Victorian literature on gender flourished in such a tense atmosphere. Female rebellion against the injustices of this developing world often found its voices among the ones who were able to feel the deep sorrow experienced either by themselves or by the members of their gender. This book explores Victorian gender issues and the role of Victorian literature on the womanly journey towards emancipation through their evolutionary path. The key concepts and movements that shaped the historical, social, and political background of women’s cry for their rights are examined along with the accompanying gender literature mainly through a feminist reading of female writers as regards to the Woman Question.

Working Women in the U.S.: Statistical Data and a View of Female Self-Employment
Myles Godfrey
In series: Women’s Issues
Women’s participation in labor force activities has greatly expanded since the end of World War II. Immediately following the war, less than one-third of women were in the labor force. However, women soon began to participate in greater numbers, and their labor force participation rose rapidly from the 1960s through the 1980s before slowing in the 1990s. By 1999, women reached the peak of their labor force participation, 60 percent. Since then, however, labor force participation among women has declined. Nonetheless, women’s labor force participation remains relatively high by historical standards, particularly among women with children, and a large share of women work full time and year round. This book presents historical and recent
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“NOVA SCIENCE PUBLISHERS, INC. has been reliable, sure and quick. In the future, I plan to publish other books with this important Publisher. Thank you very much to all the people involved in the editorial process.” - Silvia A. Brandán (Catedra de Quimica General, Instituto de Quimica Inorganica, Facultad de Bioquimica, Quimica y Farmacia, Universidad Nacional de Tucuman, Ayacucho, San Miguel de Tucuman, Tucuman, Argentina)

“It has been a true pleasure to work with Nova Science Publishers; from the initial contacts, the publication agreement and through all the stages from manuscript to printed book, I have been met with respect, efficiency and kindness. In this excellent collaboration environment, we have created a fine product, which I hope we all can be proud of. It is both natural and easy to recommend Nova Science Publishers to fellow scientists, and I look forward to our next collaboration.” - Nils-Axel Mörner (Paleogeophysics & Geodynamics, Stockholm, Sweden)

“Working with Nova was a very positive and productive experience. A real chance to introduce my research into other languages and countries.” - María J. Binetti (National Council for Scientific and Technological Research of Argentina)

“Nova Science Publishers is a professional, up-to-date academic publishing house, which in my experience, provides wonderful opportunities for academic discourse while maintaining a kind, supportive and thoughtful atmosphere. I am grateful to Nova for their open doors and open ears, for their unconditional trust supported by true professionalism, efficiency and commitment to high standard of academic quality.” - Mira Moshe (Ariel University of Samaria, Israel) and Nicoleta Corbu (National University of Political Studies and Public Administration, Romania)

“It was a pleasure and honor to collaborate with Nova.” - Marco Manfredi (“Pietro Barilla” Children's Hospital, University of Parma, Parma, Italy)

“It was an excellent experience working with Nova Publishers, and I look forward to working with them again in the future, if I can.” - Stephen Rutherford (School of Biosciences, Cardiff University, Wales)

“I can only reiterate here the opinion expressed by my colleague Joav Merrick from Ben Gurion University and the Ministry of Social Affairs, Jerusalem, Israel at the time of the passing of the company founder and friend, the late Frank Columbus: authors are located in every country of the world with many joining Nova each year as members of Editorial Boards or as reviewers, authors, editors and contributors. In fact, I now published more than a dozen volumes with Nova and each time, I enjoy cooperating with the company. The startling cultural diversity and the political pluralism of the publication program are a major asset, and the editorial and marketing efficiency of the company are always a welcome resource for an author.” - Arno Tausch, Almas Heshmati and Hichem Karoui (Corvinus University, Budapest)

“Nova Science Publishers is a distinguished publishing company with an excellent reputation for publishing first class books on all subjects. Nova reflects cutting edge research and scholarly writing.” - Barbara Bennett Peterson (University of Hawaii, Tigard, Oregon, USA)
“It is a great pleasure to work and to cooperate with the always friendly, permanently benevolent, and highly professional team at Nova Science Publishers.” - Anatoly Buchachenko (Russian Academy of Sciences)

“I have published many book chapters with your excellent company. I look forward to continuing our cooperation in the future. I would like to express my deep thanks to all members of the Editorial Board at Nova Science Publishers, Inc. for consideration of my work.” - Zakaria M. Sawan (Cotton Research Institute, Agricultural Research Center, Ministry of Agriculture and Land Reclamation, Giza, Egypt)

“It is a great pleasure for us to publish our edited book with Nova Science Publishers, Inc. Publishing with Nova was a very knowledgeable, motivating and encouraging experience. I am quite impressed with all associated members of Nova for their continuous support during the publication processes starting from the submission of the proposal to the final production of the book. They were present all the time for support and were responding very quickly to editor queries. All associates are kind, competent, concerned, and friendly during the publication processes. I would like to publish future proposals again with Nova. I will also suggest our friends to publish with them.” - Dr Kaushal Kishore Choudhary (Dr. Jagannath Mishra College, Affiliated to Babasaheb Bhimrao Ambedkar Bihar University, Muzaffarpur, Bihar, India)

“It was a great pleasure and honor to work with NOVA for my two edited volumes on Neurorestoratology. Everything was smooth from the time of proposal to evaluation and book publishing. The desk editors, handling editors and the publishers are extremely co-operative and worked hard to ensure that everything is right and supported me to a great extent. Their style of functioning and of the handling the book project was extremely professional and of high standard. I would love to continue to publish my novel ventures in neuroscience with NOVA in the future.” - Hari S. Sharma (Laboratory of Cerebrovascular Research, Department of Surgical Sciences, Anaesthesiology & Intensive Care Medicine, University Hospital, Uppsala University, Sweden)

“I have very much enjoyed working with the Nova team as their support has been first class.” - Myra F. Taylor (School of Psychology and Social Science, Edith Cowan University, Australia)