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Agricultural Prairies
Natural Resources and Crop Productivity
K. R. Krishna, Independent Researcher and Author
This book is a comprehensive volume that brings together vast knowledge about agricultural prairies in one place, providing concise information and providing concise descriptions of natural resources and their influence on crop productivity. It provides detailed descriptions about natural settings as well as lucid discussions on soil fertility and crop production trends for various agricultural prairies distributed all across the earth.

Agricultural Resource Use and Management
Edited by Kimberly Etingoff, Tufts University, Boston, Massachusetts, USA
Agriculture is one of the prime users of water, particularly in arid places with already-limited water resources, and its effects are diverse and far reaching. Providing a nuanced study of agricultural resource management, this informative book takes a four-pronged approach, covering research on the impact of agriculture on water, the impact of agriculture on soil quality and its ecological health, energy and greenhouse gases, and the impact of a growing population on agricultural resources.

Agricultural Water Productivity Optimization for Irrigated Teff (Eragrostic Tef) in a Water Scarce Semi-Arid Region of Ethiopia
Yenesew Mengiste Yihun, UNESCO-IHE Institute for Water Education, Delft, The Netherlands
The prospects for the future are clear. Agriculture will have to respond to changing patterns of demand for food and combat food insecurity and poverty amongst marginalized communities. In so doing, agriculture will have to compete for scarce water with other users and reduce pressure on the water environment. Moreover, water managers have to unlock the potential of agricultural water management practices to raise productivity of water, spread equitable access to water, and conserve the natural productivity of the water resource base. This PhD thesis presents field tests combined with modeling work on the cultivation of irrigated Teff (Eragrostic Tef) in the Awash Rift Valley of Ethiopia.

Biotechnology, Agriculture, Environment and Energy
Edited by Fangzi Zheng, International Research Association of Information and Computer Science, Beijing, China
The 2014 International Conference on Biotechnology, Agriculture, Environment and Energy (ICBAEE 2014) was held May 22-23, 2014 in Beijing, China. The objective of ICBAEE 2014 was to provide a platform for researchers, engineers, academicians as well as industry professionals from all over the world to present their research results and development activities in Biotechnology, Agriculture, Environment and Energy. The program consisted of invited sessions and technical workshops and discussions with eminent speakers, and contributions to this proceedings volume cover a wide range of topics in Biotechnology, Agriculture, Environment and Energy.

Combine Harvesters
Theory, Modeling, and Design
Petre Miu
The design, development, and optimization of modern combine harvesters require a thorough understanding and a suitable representation (model) of each machine system as well as of the whole machine. Based on the author’s 20 years of teaching, research, and engineering design, this book provides a unique and unitary approach of the engineering concepts, construction, calculations, simulation, and design of these complex and expensive machines. It presents systematic, unified, and in-depth engineering/scientific knowledge integration from fundamentals, through new mathematical models, to process optimization and design applications.

Crisis Management of Chronic Pollution
Contaminated Soil and Human Health
Edited by Magalie Lesueur Jannoyer, CIRAD, HortSys Research Unit, Le Lamentin, Martinique, France, Philippe Cattan, CIRAD, SBPA Research Unit, Capeterre Belle Eau, Guadeloupe, France and Thierry Wignomer, IRD/CNRS/Aix Marseille University - IMBE Research Laboratory
Series: Urbanization, Industrialization, and the Environment
This book deals with a long term pollution situation, generated by the former use of organochlorine pesticides. Through a study case of the chlordecone pollution in the French West Indies, the authors illustrate a global and systemic mobilization of research institutions and public services. The hope is that this “management model”, together with its major results, the approach and lessons to be learned, could be useful to other situations. It gathers all the works that have carried out over the last ten years or more and links them to decision makers’ actions and stakeholders’ expectations. This reference fills a gap in the literature on chronic pollution.

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Economics of Water Management in Agriculture
Edited by Thomas Bournaris, Julio Berbel, University of Cordoba, Spain, Basil Manos, Aristotle University of Thessaloniki, Greece and Davide Viaggi, University of Bologna Viale Fanini, Italy
This book includes a set of papers from distinguished scholars who critically examine economic issues relating to the relationship between water and agriculture, with a special focus on irrigation. Employing state of the art methodologies, they address the most relevant issues in water policy. The volume offers a wide spectrum of innovative approaches and original and relevant cases with a focus on irrigated European agriculture. The topics analyzed include qualitative and quantitative issues, water markets, demand analysis, economic analysis, implementation of economic issues.

GIS Applications in Agriculture, Volume Four
Conservation Planning
Edited by Tom Mueller, John Deere & Company, Urbandale, Iowa, USA and Gretchen F. Sassennath, Southeast Agricultural Research Center, Parsons, Kansas, USA
Series: GIS Applications in Agriculture
Recent advances in geospatial technologies now provide land managers with tools and resources to conserve soil and water resources more efficiently than has ever been possible before. This volume presents approaches developed by leading researchers working at the intersection of conservation and spatial technologies. The strategies are designed to provide the greatest benefit to preserving natural resources while reducing economic expenses. Each chapter includes a detailed background on the specific topic, with case studies describing the design and implementation of the solution. Readers are guided through step-by-step exercises to gain experience in executing the conservation practice.

Environmentally Sustainable Viticulture
Practices and Practicality
Edited by Chris Gerling, Vinification and Brewing Laboratory at the New York State Agricultural Experiment Station, Geneva, New York
As climate change becomes a growing reality, more industries must grapple with how to implement sustainable business practices at every step of the production process. This is especially true for viticulture, where every step of production can take years to come to fruition, and any decision must address future concerns. This volume serves as an introduction to some of the concerns that viticulturists must tackle to keep the industry moving in the right direction, including the best sustainable practices in the wine industry, how to assess sustainability programs, how to consider viticulture in the broader context of sustainable agriculture and industry, and the role of the consumer.

Genetics, Genomics and Breeding of Sorghum
Edited by Yi-Hong Wang, University of Louisiana at Lafayette, USA, Hari D. Upadhyaya and Chittaranjan Kole, Allahabad Agricultural Institute, U.P., and Bidhan Chandra Agricultural University, Nadia, India
Series: Genetics, Genomics and Breeding of Crop Plants
Sorghum is one of the hardest crop plants in modern agriculture and also one of the most versatile. Its seeds provide calorie for food and feed, stalks for building and industrial materials and its juice for syrup. This book provides an in-depth review of the cutting-edge knowledge in sorghum genetics and its applications in sorghum breeding. Each chapter is authored by specialists in their fields to report the latest trends and findings. The book showcases the definitive value of sorghum as a model system to study the genetic basis of crop productivity and stress tolerance and will provide a foundation for future studies in sorghum genetics, genomics, and breeding.

High Performance Liquid Chromatography in Pesticide Residue Analysis
Edited by Tomasz Tuzimski, Medical University of Lublin, Poland and Joseph Sherma, Lafayette College, Easton, Pennsylvania, USA
Series: Chromatographic Science Series
HPLC is the principal separation technique for identification of the pesticides in environmental samples and for quantitative analysis of analytes. At each stage of the HPLC procedure the chromatographer should possess basic skills that substantially help in accomplishing HPLC experiments correctly, to obtain reliable, repeatable, and reproducible results. This book serves as a comprehensive source of information and training on the state-of-the-art pesticide residues methods performed with aid of HPLC and aids the readers in avoiding the many pitfalls that are possible during work with the HPLC mode.
Hydraulic and Operational Performance of Irrigation Schemes in View of Water Saving and Sustainability

Zeleke Agide Dejen, UNESCO-IHE Institute for Water Education, Delft, The Netherlands


This thesis evaluates the performance of two large-scale (Wonji-Shoa and Metahaha) and two community-managed (Golgota and Wedecha) irrigation schemes located in the Awash River Basin of Ethiopia. The study focused on hydraulic/water delivery performance in the large-scale schemes, and on comparative and internal irrigation service (utility) evaluation in the community-managed schemes. Water delivery performance was evaluated using routine data and hydrodynamic modelling. Farmers’ utility was evaluated using qualitative responses of water users. Major performance challenges in each category of schemes were addressed and operational/water management options for improvement were identified.

CRC Press
Market: Water Science, Technology and Engineering
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Hb: 978-1-138-02767-1: £69.99
* For full contents and more information, visit: www.crcpress.com/9781138027671

Impact of Climate Change on Water Resources in Agriculture

Edited by Cornelio Alberto Zolin, Embrapa Agrosilvopastoral, Setor Comercial Sinop, Brazil and Renato de A. R. Rodrigues, Embrapa Agrosilvopastoral, Setor Comercial Sinop, Brazil

Climate change and its impact on water resources in agriculture pose one of the biggest challenges for food, energy, fiber, and water security worldwide and, as a consequence, for society. This book presents a multidisciplinary approach towards climate change and water resources in agriculture and provides a comprehensive perspective about the core points central to this subject. Other topics that are covered in this book include important insights concerning hydrological cycle, forests, land use change and water, low carbon agriculture, green economy concepts, as well as the state of the art on United Nations Framework Convention on Climate Change and Global Research Alliance are provided.

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Management, Performance, and Applications of Micro Irrigation Systems

Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor)

Series: Research Advances in Sustainable Micro Irrigation

This volume emphasizes sustainable and meaningful methods of irrigation to counter rampant water scarcity. In many parts of the world, this scarcity significantly affects crop yield, crop quality, and, consequently, human quality of life. It presents the best management practices in sustainable micro irrigation, with the goal of increasing crop yield and quality and conserving water. The practices described are practical and attainable and are based on research and studies from many areas of the world, including India, South Africa, and other areas. The applications described can be adapted and applied to many regions with a critical need to address the water crisis in crop production.

Apple Academic Press
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Microbes as Bio-fertilizers and their Production Technology

S. G. Borkar, Mahatma Phule Agricultural University, Rahuri, India

Series: Woodhead Publishing in Agriculture

Microbes as Bio-Fertilizers and their Production Technology is a step forward in the direction of research, testing, and development of new effective strains of beneficial microbes and their production technologies. This book highlights the methods of isolation of several beneficial microbes of different utility, specialization culture media, distinguishing characteristics of these microbes, testing their efficiencies, and large scale production technologies. It is a unique book in which beneficial microbial bio-fertilizers are included.

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Push Button Agriculture

Robotics, Drones, Satellite-Guided Soil and Crop Management

K. R. Krishna, Independent Researcher and Author

This book covers three main types of agricultural systems: the use of robotics, drones (unmanned aerial vehicles), and satellite-guided precision farming methods. Some of these are well refined and are currently in use, while others are in need of refinement and are yet to become popular. The book provides a valuable source of information on this developing field for those involved with agriculture and farming and agricultural engineering. The book is also applicable as a textbook for students and a reference for faculty.

Apple Academic Press
Market: Agriculture
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Seed Inoculation, Coating and Precision Pelleting Science, Technology and Practical Applications

Gerald M. Bennett and John Lloyd, Axis Associates, Nelson, New Zealand

Seed inoculation is the practice of effectively introducing a high number of nitrogen-fixing bacteria (Rhizobium or Bradyrhizobium) on the surface of legume seeds prior to planting. The bacteria penetrate the root, resulting in the formation of root nodules that fix nitrogen from the air, and make it readily available to the plant. This book describes the need, the development and the use of rhizobia, and how this process may be reproduced successfully around the world, especially in underdeveloped agricultural countries.

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Edited by Jochen Bundschuh, University of Southern Queensland (USQ), Toowoomba, QLD, Australia & Royal Institute of Technology (KTH), Stockholm, Sweden and Guangnan Chen, University of Southern Queensland, Toowoomba, Queensland, Australia
Series: Sustainable Energy Developments

This book provides a technological and scientific endeavor to assist the society and farming communities to improve their productivity and sustainability. Through providing the latest technology and by deepening the understanding of possible cost-efficient techniques and application opportunities for different scales and situations, it will show why the implementation of these technologies faces numerous technological, economic and policy barriers while giving suggestions and examples as to how these hurdles can be overcome. Also, applications of new and improved technologies are discussed and promoted and what further research and development needs to be performed.

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This new collection covers a wide variety of research on the ecological aspects of crops growing under stress conditions due to atmospheric changes and pollution and the impact on both plant and human health. The book provides research that will help to find ways to overcome adverse abiotic environmental factors and unfavorable anthropogenic pressures on crop plants, which also eventually impact human health. Divided into six parts, leading authors from many institutes provide and share new knowledge gained from studies on ecological and genetic controls of plant resistance to various adverse environmental factors.

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**Sustainable Micro Irrigation Management for Trees and Vines**
Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor)
Series: Research Advances in Sustainable Micro Irrigation

This valuable book, the third volume in the Research Advances in Sustainable Micro Irrigation series, focuses on sustainable micro irrigation management for trees and vines. It covers the principles as well as recent advances and applications of micro irrigation techniques.

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**Toward a Sustainable Wine Industry**
Green Enology Research
Edited by Luann Preston-Wilsey, Cornell University’s New York State Agricultural Experiment Station, Geneva, New York, USA

Toward a Sustainable Wine Industry: Green Enology in Practice takes a broad look at the emerging trend of using sustainable wine production methods and business practices. It covers a multitude of aspects of the sustainable wine industry, including production methods, recycling efforts, customer behavior, sustainable business practices, and more. The wine sector, which plays a big role in the agricultural industry around the world, has been facing increasing pressure to fulfill legal environmental requirements while maintaining a competitive position in a global market.

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**Sustainable Use of Land and Water Under Rainfed and Deficit Irrigation Conditions in Ogun- Osun River Basin, Nigeria**
Omotayo Babawande Adeboye, UNESCO-HIE Institute for Water Education, Delft, The Netherlands
Series: UNESCO-HIE PhD Thesis Series

Agronomic practices need to be designed to improve the water productivity. This book describes water conservation practices such as tied ridge, mulch, soil bauld, tied ridge plus soil bauld, tied ridge plus mulch, mulch plus soil bauld and direct sowing which were used in cultivating soybeans during rainy seasons. Deficit irrigation during reproductive stages was applied with drip lines.

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**Transgenic Herbicide Resistance in Plants**
V. S. Rao, University of California, Davis, USA

This book provides a comprehensive and in-depth discussion on the development of herbicide resistance during the past 50 years, emphasizing the biochemical pathways of herbicide resistance in weeds. It discusses the principles of plant genetics, different methods of genetic engineering, making of transgenic plants, various transgenic crops conferred with herbicide resistance, evolution of weed, problems subsequent to growing of transgenic crops, benefits and risks of growing transgenic crops, and management of transgenic crops. Packed with up-to-date information, the book includes relevant references, data, figures, and illustrations.

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Edited by Noureddine Benkeblia, Department of Life Sciences, University of West Indies, Kingston, Jamaica

Series: Advances in Agroecology

This book presents the development of agroecology concepts as well as the modern vision on ecology and agricultural systems. It describes how to make the translation of modern agroecology to help our environment. The book examines how available and limited natural resources are and how this environment would allow the population to reach the goal of global sustainable ecological, agricultural, and food production systems. It also considers the principles that regulate the agroecological systems, including crop production, soil management, and environment preservation.

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Stephen R. Gliessman, Professor Emeritus, University of California, Santa Cruz, USA

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Biopesticides Handbook

Edited by Leo M.L. Nollet, University College Ghent, Belgium (Retired) and Hamir Singh Rathore, Retired Professor and Chairman, Applied Chemistry Department, Aligarh Muslim University, India

Offering a full spectrum and review of the range of organisms and organic products that may be used in the biological control of insects, this book discusses the uses and abuses of biopesticdes that have been in circulation for more than 50 years, as well as more recent advances in this area. It describes the metabolism of these biopesticides and offers the best mode of action to prove environmental safety, detailing the present status of biopesticide residues in foodstuffs, soil, and water.

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Field and Laboratory Investigations in Agroecology, Third Edition

Stephen R. Gliessman, Professor Emeritus, University of California, Santa Cruz, USA

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Arsonic Toxicity: Prevention and Treatment

Edited by Narayan Chakrabarty, Visting Professor, Dept. of Zoology, Maulana Azad College, Calcutta, India

Arsenic toxicity is a major challenge to health professionals and scientists around the world and is responsible for numerous diseases. Arsenic in drinking water, for example, can cause abnormal skin pigmentation such as keratoses and arsenicosis as well as multiple forms of cancer. This book reviews our understanding of arsenic poisoning and the health consequences resulting from exposure. Chapters discuss sources of arsenic poisoning, arsenic chemistry and geochemistry, remediation; the use of nutraceuticals and functional foods in combating arsenic poisoning, and various removal/treatment techniques.

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Integrated Land Use Planning for Sustainable Agriculture and Rural Development

Edited by M. V. Rao, National Institute of Rural Development, Hyderabad, India, V. Suresh Babu, National Institute of Rural Development, Hyderabad, India, Suman Chandra, National Institute of Rural Development, Hyderabad, India and G. Ravindra Chary, Central Research Institute for Dryland Agriculture, CRIDA, Hyderabad, India

Land represents an important resource for the economic life of a majority of people in the world. The way people handle and use land resources impacts their social and economic well-being as well as the sustained quality of land resources. Land use planning is also integral to water resources development and management for agriculture, industry, drinking water, and power generation. This valuable work brings to the forefront the state of practice of land use planning in India, highlighting governmental programs and research with wide-ranging chapters on important topics.

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Modeling Methods and Practices in Soil and Water Engineering

Edited by Balram Panigrahi, Orissa University of Agriculture and Technology, Bhubaneswar, India and Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor)

This book discusses the development of useful models and their applications in soil and water engineering. It covers various modeling methods, including groundwater recharge estimation, rainfall-runoff modeling using artificial neural networks, development and application of a water balance model and a HYDRUS-2D model for cropped fields, a multi-model approach for stream flow simulation, multi-criteria analysis for construction of groundwater structures in hard rock terrains, hydrologic modeling of watersheds using remote sensing, and GIS and AGNPS.

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Stephen R. Gliessman, Professor Emeritus, University of California, Santa Cruz, USA

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Air and Environmental Quality in Livestock and Agricultural Buildings
Edited by Thomas Banhazi, University of Southern Queensland, Toowoomba, Australia, Andres Aland, Estonian University of Life Sciences, Tartu, Estonia and Joerg Hartung, University of Veterinary Medicine Hannover, Germany

Series: Sustainable Energy Developments
The appropriate management of livestock buildings is an ever improving professional endeavour and this book is set out to review the ‘current best practice management’ in relation to air quality management of livestock buildings that have to be managed correctly to generate environmental conditions that will enhance the production efficiency, health and welfare of livestock, the health of farm workers and people living near farming operations. All key areas of air quality management are reviewed in this book, including sources of pollution, measurement techniques, effects of airborne pollutants and abatement methods.
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Halophytic and Salt-Tolerant Feedstuffs
Impacts on Nutrition, Physiology and Reproduction of Livestock
Hassan M. El Shaer, Desert Research Center, Cairo, Egypt and Victor Roy Squires, University of Arizona, Tucson, USA - (Retired)
The potential of halophytes as feedstuffs for livestock has been recognized for decades and their incorporation has been advocated as a way to increase intake and mitigate the anti-nutritional compounds that reduce palatability and food value. This book details the interactions between halophytic feedstuffs and both ruminant and non-ruminant livestock. It summarizes years of experience from work in Egypt, Australia, the US, Mexico, Pakistan and the Middle East and sheds light on the problems and prospects for increasing the utilization of halophytes as animal feed and for rehabilitation of saline lands throughout the world.
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Biology of Domestic Animals
Edited by Colin G. Scanes, University of Wisconsin, Milwaukee, USA and Rodney A. Hall, Charles Sturt University, Wagga Wagga, Australia
There is increasing interest in the biology of domestic animals ranging from genomics, transcriptomics, metabolomics, nutritional physiology, and systems biology. This book will touch on all of these, with a particular focus on topics such as domestic animals as comparative models to humans, molecular regulation of growth, metabolic efficiency, reproduction, and the impact of stress on growth and development. The book will conclude with a discussion on the current and future directions for researchers.
CRC Press
Market: Agricultural Science
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Hb: 978-1-498-74785-1: £140.00
eBook: 978-1-498-74787-5
* For full contents and more information, visit: www.crcpress.com/9781498747851

Equine Embryo Transfer
Patrick M. McCue, Colorado State University, USA and Edward L. Squires, Gluck Equine Research Center, Lexington, Kentucky, USA
This book reviews the history of equine embryo transfer, covering in clinically practical terms the techniques, equipment, and management protocols currently in use. Authors Ed Squires and Pat McCue have been involved with the development of embryo collection and transfer procedures since the early 60s and have both contributed important techniques and innovations to the process through their research and clinical experience. This book captures the clinical experience, so far, and applies it directly to equine practice.
Teton NewMedia
Market: Veterinary Medicine
February 2015: 229 x 152: 184pp
Pb: 978-1-591-61047-2: £49.99
eBook: 978-1-498-73476-9
*For full contents and more information, visit: www.crcpress.com/9781591610472

Browse and order online:
www.crcpress.com
Agribusiness Supply Chain Management

N. Chandrasekaran, Take Solutions, Ltd., Chennai Tamilnadu, India and G. Raghuram, Indian Institute of Management, Ahmedabad, Gujarat, India

This book introduces the complexity and importance of supply chain management within businesses handling agricultural products. Topics include major drivers, facility, inventory, and transportation management, sourcing decisions such as processed or farm fresh, input and output challenges, processors, challenges of managing perishables, infrastructure, retailing, quality, information technology, risk strategies, financials, direct trading versus auction, and navigating relevant government policies. The book includes numerous case studies that span a wide range of issues and industries.

CRC Press
March 2014: 235 x 156: 700pp
Hb: 978-1-466-51674-8: £63.99
ebook: 978-1-466-51675-5

* For full contents and more information, visit: www.crcpress.com/9781466516748

Agroecology in China
Science, Practice, and Sustainable Management

Edited by Luo Shiming, Institute of Tropical and Subtropical Ecology, South China Agricultural University, Guangzhou, People’s Republic of China and Stephen R. Gliessman, Professor Emeritus of Agroecology, University of California, Santa Cruz, USA

Series: Advances in Agroecology

This book covers agroecology research on typical agricultural systems in China including intercropping systems, duck-rice, fish-rice, and fog-rice co-culture systems, rainfed harvest systems, and more. It also covers eco-agriculture practice in the major regions of China such as arid and semi-arid region in Northwest China, cold temperate region in Northeast China, typical temperate agricultural region in North China, hilly and mountainous regions in tropical Southwest China, and more.

CRC Press
Market: Agricultural Science
February 2016: 254 x 178: 460pp
Hb: 978-1-482-24934-7: £57.99
ebook: 978-1-482-24935-4

* For full contents and more information, visit: www.crcpress.com/9781482249347

Apparel Machinery and Equipments

R. Rathnamoorthy, PSG College of Technology, Coimbatore, India and R. Surjit, PSG College of Technology, Coimbatore, India

Series: Woodhead Publishing India in Textiles

This book aims to develop a broad range of knowledge in the area of apparel machinery. It describes the various types of machines used in the different departments of apparel industry. It provides details on how the machines work and helps readers to recognize the basics, fundamental operating procedures, and requirements of the apparel machinery. Research in the field of apparel machinery has gained impetus recently, and this book helps readers to understand the operations in detail.

WPI Publishing
Market: Industrial Textiles
June 2015: 229 x 152: 336pp
Hb: 978-9-380-30859-3: £127.00
ebook: 978-9-380-30813-9

* For full contents and more information, visit: www.crcpress.com/9789380308593

Applications of Furrow and Micro Irrigation in Arid and Semi-Arid Regions

Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor)

Series: Research Advances in Sustainable Micro Irrigation

Applications of Furrow and Micro Irrigation in Arid and Semi-Arid Regions, the fifth volume in the Research Advances in Sustainable Micro Irrigation series, addresses the ever-challenging need for irrigation systems in arid and semi-arid regions of the world, areas that are suffering from severe water shortages. These areas, such as Egypt, Tunisia, most of Africa, and parts of South America, Central America, and Australia, find it a struggle to grow crops sustainably with the water available. This important book emphasizes sustainable agriculture practices to promote increased water usage efficiency in dry areas for growing of crops.

Apple Academic Press
Market: Agriculture
June 2015: 235 x 156: 325pp
Hb: 978-1-771-88089-3: £95.00
ebook: 978-1-498-70983-5

* For full contents and more information, visit: www.crcpress.com/9781771880893

Applied Mathematics and Omics to Assess Crop Genetic Resources for Climate Change Adaptive Traits

Edited by Abdallah Bari, Senior Scientist, Biodiversity and Integrated Gene Management (BIGM), International Centre for Agricultural Research in the Dry Areas, ICARDA, Rabat, Morocco, Ardezhir B. Damanian, University of California, Davis, California, USA, Kenneth Street, Michael Mackay and Selvadurai Dayanandan

Genetic diversity of crop plants is being further explored and exploited to generate higher crop yield, better disease resistance, and more nutritional value. This book focuses on using genetic resources to mitigate the effects of climate change and increase crop production. It emphasizes recent advances in mathematics and omics technologies addressing issues related to adaptation of crops to changing climatic conditions. Exhaustive sections cover climate change implications for drylands and farming communities; genetic resources/biodiversity’s potential to adapt and mitigate climate change; applied mathematics and applied omics technologies; as well as genomics and gene identification.

CRC Press
Market: Agricultural Science
February 2016: 235 x 156: 310pp
Hb: 978-1-498-73013-6: £89.00
ebook: 978-1-498-73022-8

* For full contents and more information, visit: www.crcpress.com/9781498730136
Best Management Practices for Drip Irrigated Crops
Edited by Kamal Gurmee Singh, Punjab Agricultural, Ludhiana, India, Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor) and Ramesh P. Rudra, University of Guelph, Ontario, Canada
Series: Research Advances in Sustainable Micro Irrigation
This book focuses on best management practices for drip irrigated crops. It cover irrigation methods, scheduling of micro irrigation, and mulching and crop performance. Micro irrigation techniques with diverse crops are discussed, including sweet pepper, chilli, tomatoes, cauliflower, wheat, sweet peas, sugarcane, and potatoes. The performance of the various techniques has been tested and evaluated in the field. Written by experts on micro irrigation, this valuable book is a must-have for micro irrigation professionals as well as advanced students.

Apple Academic Press
Market: Agriculture
July 2015: 235 x 156: 440pp
Hb: 978-1-771-88095-4 £95.00
* For full contents and more information, visit: www.crcpress.com/9781771880954

Biological Systems, Biodiversity, and Stability of Plant Communities
Edited by Larissa L. Weisfeld, Russian Academy of Sciences, Moscow, Russia, Anatoly I. Opalko, Uman National University of Horticulture, Ukraine, Nina A. Borne, Tyumen State University, Russia and Sarra A. Bekuzarova, North Caucasus Institute of Mountain and Submontane Agriculture, Republic of North Ossetia-Alania, Russia
This book discusses theoretical approaches to the taxonomy of biological systems and theory and mathematical approaches to the problem of plant diversity, cultivation, and the environment. Particular attention is given to theoretical and practical problems of soil and the environmental sustainability of phytocoenosis, with the goal to enhance the productivity of agricultural crops. With chapters written by acknowledged scientists in the field of genetics, plant selection, ecology, and agro-economy, the book attempts to find consensus between the need to address ways to decrease the excess load on the environment and the need to provide adequately for the human population in agro-developed countries.

Apple Academic Press
Market: Agriculture
May 2015: 235 x 156: 566pp
Hb: 978-1-771-88064-0 £114.00
* For full contents and more information, visit: www.crcpress.com/9781771880640

Biomass and Biofuels
Advanced Biorefineries for Sustainable Production and Distribution
Edited by Shibu Jose, University of Missouri, Columbia, USA and Thallada Bhaskar
Focusing on the key challenges that still impede the realization of the billion-ton renewable fuels and energy products vision, this book provides comprehensive information on sustainable production of biomass feedstock, supply chain management of feedstocks to the biorefinery site, advanced conversion processes, and catalysts/biocatalysts for production of fuels and chemicals using conventional and integrated technologies. It also presents detailed coverage of downstream/recovery operations, for a refinery processing lignocellulosic and algal biomass resources.

CRC Press
Market: Agricultural Science
April 2015: 254 x 178: 350pp
Hb: 978-1-466-59531-6 £76.99
ebook: 978-1-466-59532-3
* For full contents and more information, visit: www.crcpress.com/9781466595316

Climate Change Effect on Crop Productivity
Edited by Rakesh S. Sengar, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut, India and Kalpana Sengar, Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut, India
This book provides analyses of the global consequences to crop yields, production, and risk of hunger of linked socioeconomic and climate scenarios. Potential impacts of climate change are estimated to evaluate consequent changes in global cereal production, cereal prices, and the number of people at risk from hunger. The crop yield results elucidate the complex regional patterns of projected climate variables, CO2 effects, and agricultural systems that contribute to aggregations of global crop production.

CRC Press
Market: Environmental Science
November 2014: 235 x 156: 538pp
Hb: 978-1-482-22920-2 £108.00
ebook: 978-1-482-22921-9
* For full contents and more information, visit: www.crcpress.com/9781482229202

Cocoa Production and Processing Technology
Emmanuel Ohene Afoakwa, Department of Nutrition and Food Science, University of Ghana
This book presents detailed explanations of technologies for sustainable production of high-quality and safe cocoa beans for the global confectionary industry. It describes up-to-date technologies and approaches to modern cocoa production practices, global production and consumption trends as well as principles of cocoa processing and chocolate manufacture. It covers the origin, history and taxonomy of cocoa, and examines the fairtrade and organic cocoa industries. The chapters provide in-depth coverage of cocoa cultivation, harvesting and post-harvest treatments, genotypic variations, fermentation techniques, drying, storage and transportation.

CRC Press
Market: Crop Science
February 2014: 235 x 156: 374pp
Hb: 978-1-466-59823-2 £111.00
ebook: 978-1-466-59824-9
* For full contents and more information, visit: www.crcpress.com/9781466598232
Cold Tolerance in Rice Cultivation
Pranab Basuachaudhuri, Indian Council of Agricultural Research (Retired), Kolkata, India
Rice is the staple food for more than half of the world’s population, yet cold temperatures during the cropping period cause a significant loss of yield. To cope with the world’s increasing population, it is necessary to develop high-yielding rice varieties that are tolerant to abiotic stress conditions, such as drought, salinity, and cold. This book provides a clear understanding of cold stress in rice and the hopes that it will provide insight to the subject for further research so that rice plants may be grown efficiently in cold regions with high productivity.

CRC Press
Market: Agricultural Science
May 2014: 235 x 156: 210pp
Hb: 978-1-482-24517-2: £79.99
ebook: 978-1-482-24518-9
* For full contents and more information, visit: www.crcpress.com/9781482245172

Compendium of Bioenergy Plants
Corn
Edited by Stephen L. Goldman, The University of Toledo, Ohio, USA and Chittaranjan Kole, Allahabad Agricultural Institute, U.P., and Bidhan Chandra Agricultural University, Nadia, India
Series: Compendium Of Bioenergy Plants
This book evaluates maize as a bioenergy fuel source from two perspectives. It explores whether the input energy needed to generate fuel significantly exceeded by the energy harvested. In examining this issue, the chapters provide assessments of the social, economic, and political impact on fuel pricing, food costs, and the environmental challenge with corn biomass the engine of change. It then examines whether corn be genetically improved so that its biomass is significantly increased, its cellulose-lignin complex made more amenable to harvesting and to processing, and grown in regions not normally associated with its cultivation of food.

CRC Press
Market: Agricultural Science
February 2014: 235 x 156: 396pp
Hb: 978-1-482-21058-0: £103.00
ebook: 978-1-482-21059-7
* For full contents and more information, visit: www.crcpress.com/9781482210583

Crop Breeding
Bioinformatics and Preparing for Climate Change
Edited by Santosh Kumar, Brandon Research Centre, Canada
With contributions from 42 eminent researchers from 12 nations around the world, this volume offers a global perspective on the climate change. The editor is a respected and published scientist in the bioinformatics field, who has chosen articles in the following topics: genetic challenges presented by climate change, genomic toolkit for crop-related research, and specific methods of improvement for specific crop by means of genomic applications. The hand-picked up-to-date research makes this volume an excellent reference not only for university-level academics, but also for policymakers and stakeholders who must tackle the challenge of the world’s food security.

Apple Academic Press
Market: Agriculture
February 2016: 235 x 156: 372pp
Hb: 978-1-771-88344-3: £95.00
ebook: 978-1-771-88345-0
* For full contents and more information, visit: www.crcpress.com/9781771883443

Companion Website
www.crcpress.com/9781466595651

Crop Diseases and Their Management
Integrated Approaches
Edited by Gireesh Chand, Bihar Agricultural University, India and Santosh Kumar, Brandon Research Centre, Canada
This important and comprehensive book is designed to provide information on crop diseases and how to manage those diseases. Covering a multitude of crops and diseases, the book presents integrated approaches on managing diseases that affect such crops as cereal and crop plants, such as maize, pigeon pea, chickpeas, and urd/mung beans; oil seed crops, such as groundnut, soybeans, and linseed; and horticultural crops, such as citrus, onions, garlic, cucurbitaceae, Colocasia, roses, Stevia rebaudiana, betelvine, jute, and sunhemp. The book thoroughly covers the symptoms, causes, disease cycles, and management approaches for many diseases that affect useful agricultural crops.

Apple Academic Press
Market: Agriculture
December 2015: 235 x 156: 295pp
Hb: 978-1-771-88270-5: £89.00
ebook: 978-1-771-88261-3
* For full contents and more information, visit: www.crcpress.com/9781771882705

Complete Guide for Growing Plants Hydroponically
J. Benton Jones, Jr., GroSystems, Inc., Anderson, South Carolina, USA
With the continued application of new equipment and new concepts and methods, such as hydroponics and soilless practices, crop growth has improved and become more efficient. Focusing on the basic principles and practical growth requirements, this book provides detailed descriptions of the most commonly used hydroponic growing techniques. Additional topics include historical background and hydroponic terminology, how plants grow, hydroponic growing techniques with and without a rooting media, the nutrient solution, and hydroponic applications. This guide offers valuable information for commercial growers, researchers, hobbyists, and students.

CRC Press
Market: Agriculture
February 2014: 235 x 156: 223pp
Hb: 978-1-466-59565-1: £95.00
ebook: 978-1-466-59566-8
* For full contents and more information, visit: www.crcpress.com/9781466595651

Crop Diseases of Edible Oilsseeds Crops
Chirantan Chattopadhyay, National Centre for Integrated Pest Management (ICAR), New Delhi, India, S. J. Kolte, Professor of Plant Pathology (Retd), G.B. Pant University of Agriculture & Technology, Patnagar, India and Farid Waliyar
This book presents an unprecedentedly thorough collection of information on the diseases of cultivated annual oilseed crops, including peanut, rapeseed-mustard, sesame, soybean, sunflower, and safflower. It covers and integrates global literature on the subject up to 2014, setting it apart from other books that are only of regional importance. The authors are internationally recognized experts who have compiled decades of information from previously scattered research into a single volume that provides much-needed updates to oilseed crop disease research.
Ecoalytic Consequences of Increasing Crop Productivity

Edited by Anatoly I. Opalko, Iman National University of Horticulture, Ukraine, Larissa I. Weisfeld, Russian Academy of Sciences, Moscow, Russia, Sarra A. Bekuzarova, North Caucasus Institute of Mountain and Submontane Agriculture, Republic of North Ossetia-Alania, Russia, Nina A. Bome, Tyumen State University, Russia and Gennady E. Zaikov, Kazan National Research Technological University, Russia

With contributions from leading scientists in agricultural biology and young researchers, this book examines the ecological consequences that sometimes arise with various methods of increasing crop productivity. It also presents agroecological approaches to crop improvement and productivity from several perspectives, examines alternative energy sources, and discusses other problems related to sustainable agriculture.

Emerging Technologies in Agricultural Engineering

Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor)

This book covers an array of issues on emerging agricultural engineering and technology, featuring new research and studies. The volume is broken into three parts: emerging technologies, energy management in agriculture, and management of natural resources, in which particular attention is paid to water management, a necessary consideration for successful crop production, especially in water-scarce regions. Topics include alleviating drainage congestion, solar energy for agriculture, anaerobic digestion by inoculation with compost, self-propelled inter-cultivators, agrobiodiversity, and watershed development and management.

Hydroponics for the Home Grower

Edited by Sunil Pareek, National Institute of Food Technology Entrepreneurship and Management, Kundli, India

Hydroponics offers many advantages to traditional soil-based horticulture. These include greater control over many of the limiting factors such as light, temperature, and pests, as well as the ability to grow plants in all seasons. With instruction from one of the top recognized authorities worldwide, this book gives you step-by-step guidance on how to grow tomatoes, peppers, cucumbers, eggplants, lettuce, arugula, bok choy, and various herbs year-round within your home or in a backyard greenhouse. The book includes an appendix with sources of seeds and other supplies, along with helpful websites and other material on home-growing and caring for your crops.
Managing Energy, Nutrients, and Pests in Organic Field Crops

Edited by Ralph C. Martin and Rod MacRae
Series: Integrative Studies in Water Management and Land Development

This volume tackles three of the most challenging aspects of organic field cropping—managing energy, nutrients, and pests. It presents information and discusses possibilities to make these systems more productive, energy efficient, and economically viable. Chapters summarize the latest data, create a comprehensive and coherent picture of issues, and integrate agronomic, economic, and policy interpretations. The book clearly demonstrates how organic systems can effectively be designed to optimize farm conditions. Sections focus on soil health, pest management, energy efficiency, integrating organic approaches, and economics and policy.

CRC Press
Market: Crop Science
February 2014: 235 x 156: 430pp
Hb: 978-1-466-58668-0: £63.99
eBook: 978-1-466-58637-2
* For full contents and more information, visit: www.crcpress.com/9781466586365

Managing Salt Tolerance in Plants
Molecular and Genomic Perspectives

Edited by Shabir Hussain Wani, AICRP NSP (Crops), Division of Plant Breeding and Genetics, India and Mohammad Anwar Hossain

Scientists around the world are striving to develop crop varieties that are tolerant to salt stress. Salinity stress currently impacts more than 800 million hectares of land worldwide and more arable land is likely to be impacted in the future due to global climate changes. This book presents detailed molecular and genomic approaches for the development of crop plants that are tolerant to salt stress. This comprehensive volume discusses salinity stress in plant adaptation and productivity, biochemical and molecular mechanisms responsible for plant salt tolerance, and genomic approaches for the development of plants tolerant to salinity stress.

CRC Press
Market: Agricultural Science
October 2015: 254 x 178: 436pp
Hb: 978-1-466-56836-5: £82.00
eBook: 978-1-482-24514-1
* For full contents and more information, visit: www.crcpress.com/9781482245134

Nitrogen Metabolism in Rice

Pranab Basuchaudhuri, Indian Council of Agricultural Research (Retired), Kolkata, India

Nitrogen is an essential primary nutrient for plant growth and development. With the demand for high growth and yield of plants and the depletion of organics in soil, nitrogen availability in soil has become insufficient. This simple and comprehensive book covers the important and current information regarding rice plant biology and nitrogen metabolism. The book is divided into ten chapters that feature the steps of nitrogen assimilation and utilization in rice plant systems. Apart from describing the steps and pathways of nitrogen metabolism in rice, the book also emphasizes the changes taking place due to genotypes and environmental factors and stressors during rice growth and development.

CRC Press
Market: Agricultural Science
February 2016: 235 x 156: 290pp
Hb: 978-1-498-72991-8: £121.00
eBook: 978-1-498-72992-5
* For full contents and more information, visit: www.crcpress.com/9781498729918

Nitrogen Management in Crop Production

Nand Kumar Fageria, National Rice & Bean Research Center of Embrapa, Santo Antônio de Goiás, Brazil

The judicious use of nitrogen in crop production is highly desirable for both economic and environmental reasons, because much of the nitrogen applied to crop plants goes unused, resulting in environmental problems and waste. This book reviews the practical and theoretical aspects of nitrogen management in crop production. Chapters address the functions of nitrogen, nitrogen loss in the soil–plant system, diagnostic techniques for nitrogen requirements, management of soil organic matter, nitrogen interaction with other nutrients, biological nitrogen fixation by legumes, and management practices to improve nitrogen use efficiency.

CRC Press
Market: Agricultural Science
June 2014: 234 x 157: 436pp
Hb: 978-1-482-22838-3: £99.00
eBook: 978-1-482-22885-2
* For full contents and more information, visit: www.crcpress.com/9781482228838

Novel Postharvest Treatments of Fresh Produce

Edited by Sunil Pareek, National Institute of Food Technology Entrepreneurship and Management, Kundli, India
Series: Innovations in Postharvest Technology Series

Preserving quality, maintaining nutritional components, reducing storage losses, and alleviating chilling injury are the major challenges for the fresh produce industry. This book examines the shelf life, quality, physico-chemical and biochemical changes during the storage. It discusses the latest developments made in novel postharvest treatments, storage and packaging. The latest technologies such as nitric oxide, ozone, methyl Jasmonate, salicylic acid, oxalic acid, calcium and heat treatments will be discussed in length with focus on physiology, biochemistry, nutritional aspects, quality and shelf life under storage.

CRC Press
Market: Food & Culinary Science
August 2016: 235 x 156: 700pp
Hb: 978-1-498-72999-4: £121.00
eBook: 978-1-498-72992-5
* For full contents and more information, visit: www.crcpress.com/9781498729918

Omics Technologies and Crop Improvement

Edited by Noureddine Benkeblia, Department of Life Sciences, University of West Indies, Kingston, Jamaica

Omics technologies are modern approaches that give insight into the plant genome and its analysis using DNA-based methods for variety identification, RNA interference, elicitor biotechnology, and marker-assisted selection and breeding applications in some major crops. This book reviews data on food sciences and omics and introduces researchers to the benefits of using these technologies. It covers a wide range of crop science categories and is organized to give a broad view on how omics can help crop science and horticulture.

CRC Press
Market: Agriculture
October 2014: 254 x 178: 392pp
Hb: 978-1-466-58666-8: £95.00
eBook: 978-1-466-58669-7
* For full contents and more information, visit: www.crcpress.com/9781466586680
Organic Agricultural Practices
Alternatives to Conventional Agricultural Systems

Edited by Kimberly Etingoff, Tufts University, Boston, Massachusetts, USA

Organic practices are quickly redefining how agriculture is done around the world, as we come to realize how detrimental conventional agriculture is to local and global environments and economies. This book serves as an overview of some of the important topics in organic agriculture. The volume is broken into several sections which explore the effects of organic practices on crop productivity, the use of biofertilizers, plant cultivars, and compare the environmental impact with conventional agriculture.

CRC Press
Market: Agricultural Science
September 2016: 235 x 156: 266pp
Hb: 978-1-498-73560-5: £108.00
eBook: 978-1-498-73561-2

* For full contents and more information, visit: www.crcpress.com/9781498735605

Papaya

Biology, Cultivation, Production and Uses

Pamleshwar Lal Saran, Ishwarp Singh Solanki and Ravish Choudhary

Papaya is an important fruit cultivated throughout tropical and subtropical regions of the world. It is a widely studied crop for researchers in botany, breeding, seed production, sex determination, and tissue culture. The book covers various aspects of papaya including uses, cultivation, propagation, nutrition, cultural practices, flowering, fruiting and harvesting, seed production, pests and diseases, physiological disorders, and medicinal uses of papaya.

CRC Press
Market: Agricultural Science
October 2015: 235 x 156: 572pp
Hb: 978-1-482-25420-4: £95.00
eBook: 978-1-482-25421-1

* For full contents and more information, visit: www.crcpress.com/9781482254204

2nd Edition

Pests of Fruit Crops

David V Alford, Formerly Regional Entomologist and Head of Entomology, Ministry of Agriculture, Fisheries and Food, Cambridge, UK

This new edition focuses on insect and mite pests affecting fruit as well as hop and nut crops in both temperate and subtropical climates. Some of the fruits covered include pome fruits, stone fruits, cane fruits, strawberries, bush fruits, grapevines, citrus fruits, nuts, figs and olives. The book covers life histories, distribution and status of pests with a focus on damages caused to these fruit crops. The work is profusely illustrated with over 1,500 colour photographs, and coverage is directly relevant to all of Europe, with relevance worldwide as well.

CRC Press
Market: Agricultural Science
July 2016: 235 x 156: 462pp
Hb: 978-1-498-70620-9: £95.00
eBook: 978-1-498-70708-4

* For full contents and more information, visit: www.crcpress.com/9781498707084

Plants and People

Origin and Development of Human—Plant Science Relationships

Christopher Cumo

An exploration of the relationship between plants and people from early agriculture to modern-day applications of biotechnology in crop production, this book covers the development of agricultural sciences from Roman times through the development of agricultural experiment stations in the United States to the rise of agri-business. It discusses plant anatomy, physiology, and reproduction; evolution of plants and people; early uses of plants; the rise of agriculture in both Old and New Worlds; creation of land grant universities and agricultural experiment stations; the Green Revolution; plant biotechnology; and the future of plant sciences in feeding the growing human population.

CRC Press
Market: Agricultural Science
October 2015: 235 x 156: 272pp
Hb: 978-1-498-70707-7: £108.00
eBook: 978-1-498-70709-1

* For full contents and more information, visit: www.crcpress.com/9781498707077

Polyplody and Hybridization for Crop Improvement

Edited by Annaliese S. Mason, Justus-Liebig University, Giessen, Germany

Polyplody and hybridisation are critical processes in plant evolution and speciation. Many current agricultural crops are either natural or agricultural hybrids or polyploids, including potato, sugarcane, wheat, strawberries, and banana. There is a great deal of potential to utilise these natural evolutionary processes for targeted crop improvement; for example, through introgression of desired traits from wild species into crops, production of seedless fruits, or even creation of entirely new crop types. This book provides a comprehensive summary of how the processes of polyploidy and hybridisation have shaped the foods we eat and how these processes can be used for crop improvement.

CRC Press
Market: Agricultural Science
July 2016: 235 x 156: 224pp
Hb: 978-1-498-74066-1: £108.00
eBook: 978-1-498-74065-4

* For full contents and more information, visit: www.crcpress.com/9781498740654

Postharvest Biology and Technology of Horticultural Crops
Principles and Practices for Quality Maintenance

Edited by Mohammed Wasim Siddiqui, Bihar Agricultural University, India

Series: Postharvest Biology and Technology

The ultimate goal of crop production is to provide quality produce to consumers at reasonable rates. Most fresh produce is highly perishable, and postharvest losses are significant under the present methods of management in many countries. However, significant achievements have been made during the last few years to curtail postharvest losses in fresh produce and to ensure food security and safety as well. This new book describes advancements in postharvest quality improvement of fresh horticultural produce. This book will be a standard reference work for postharvest management for the fresh produce industry.

Apple Academic Press
Market: Agriculture
May 2015: 235 x 156: 572pp
Hb: 978-1-771-88086-2: £95.00
eBook: 978-1-498-70924-8

* For full contents and more information, visit: www.crcpress.com/9781771880862
**Postharvest Management of Horticultural Crops**

Practices for Quality Preservation

Edited by **Mohammed Wasim Siddiqui**, Bihar Agricultural University, India  
Series: Postharvest Biology and Technology

This book presents several pre- and postharvest strategies that have been developed to modify these physiological activities, resulting in increased shelf life. The book also discusses the best technologies that positively influence quality attributes of the produce, including senescent changes and, afterwards, the consumers’ decision to purchase the product in the marketplace. With contributions from experts with experience in both developed and developing regions, the book includes chapters covering thorough discussions on postharvest management strategies of fresh horticultural commodities.

*For full contents and more information, visit: [www.crcpress.com/9781771883344](http://www.crcpress.com/9781771883344)*

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**Postharvest Ripening Physiology of Crops**

Edited by **Sunil Pareek**, National Institute of Food Technology Entrepreneurship and Management, Kundli, India  
Series: Innovations in Postharvest Technology Series

This book provides a comprehensive interdisciplinary reference source for the various aspects of fruit ripening and postharvest behavior. It focuses on the postharvest physiology, biochemistry, and molecular biology of ripening and provides a ripening overview of fruits and vegetables. It describes various developments that have taken place in the last decade with respect to identifying and altering the function of ripening-related genes. It also provides an overview of the most important metabolic pathways and genes that control volatile biosynthesis in model fruits.

*For full contents and more information, visit: [www.crcpress.com/9781498703802](http://www.crcpress.com/9781498703802)*

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**Urban Horticulture**

Tina Marie Waliczek and Jayne M. Zajicek

Including contributions from experts in research and practice from across the United States, this book explores the history, importance, and benefits of horticulture to urban populations. It details how passive and active interaction with plants enriches the lives of individuals and communities. Though not designed as a textbook, it is adaptable to classroom learning, with each chapter featuring a set of objectives, key terms, review questions, enrichment activities, and suggestions for further reading as well as a summary.

*For full contents and more information, visit: [www.crcpress.com/9781482260991](http://www.crcpress.com/9781482260991)*

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**WASTES 2015 – Solutions, Treatments and Opportunities**

Selected papers from the 3rd Edition of the International Conference on Wastes: Solutions, Treatments and Opportunities, Viana Do Castelo, Portugal, 14-16 September 2015

Edited by **Candida Vilarinho**, University of Minho, Portugal, **Fernando Castro**, University of Minho, Portugal and **Mário Russo**, Polytechnic Institute of Viana do Castelo, Portugal

This volume presents a selection of papers from the WASTES 2015 conference, a platform for scientists and industries from the waste management and recycling sectors from around the world, who shared experiences and knowledge at the meeting. Covering discussions regarding the balance between economic, environmental and social outcomes, the development of innovative techniques, tools and strategies on how wastes can be transformed into good ideas. Improving both the overall environmental performance and the understanding of the industry impact on the environment, as well as the options analysis for its improvement were key objectives of this conference.

*For full contents and more information, visit: [www.crcpress.com/9781138028821](http://www.crcpress.com/9781138028821)*

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**Precision Agriculture Technology for Crop Farming**

Edited by **Qin Zhang**, Washington State University, Prosser, USA

This book provides a review of precision agriculture technology development, followed by a presentation of the state-of-the-art and future requirements of precision agriculture technology. It presents different styles of precision agriculture technologies suitable for large scale mechanized farming, highly automated community-based mechanized production, and fully mechanized farming practices commonly seen in emerging economic regions. The book emphasizes the introduction of core technical features of sensing, data processing and interpretation technologies, crop modeling and production control theory, intelligent machinery and field robots for precision agriculture production.

*For full contents and more information, visit: [www.crcpress.com/9781482251074](http://www.crcpress.com/9781482251074)*

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**Water and Fertigation Management in Micro Irrigation**

Edited by **Megh R. Goyal**, University of Puerto Rico, Mayaguez (Retired professor)  
Series: Research Advances in Sustainable Micro Irrigation

This important volume, the ninth in the Research Advances in Sustainable Micro Irrigation book series, provides an invaluable addition to the literature and knowledge on the ever-growing need for sustainable irrigation for agricultural crops in many water-scarce parts of the world. The book specifically covers advances in fertigation for water management in general as well as for specific crops, such as peaches, maize, and citrus crops.

*For full contents and more information, visit: [www.crcpress.com/9781771881067](http://www.crcpress.com/9781771881067)*
Compendium of Bioenergy Plants
Sugarcane
Edited by Eric Lam, Rutgers State University, New Brunswick, New Jersey, USA, Helaine Carrer, University of Sao Paulo, Piracicaba, Brazil, Jorge A. da Silva, Texas A&M AgriLife Research, Weslaco, USA and Chittaranjan Kole, Sam Higginbottom Institute of Agriculture, Technology & Sciences, Allahabad, India. Series: Compendium Of Bioenergy Plants
This volume of the Bioenergy Plants compendium contains a collection of chapters that focus on the history, economics, and practical sciences related to sugarcane. Comprehensive chapters explore all the essential aspects of sugarcane’s origin as a crop, its limitations, and current efforts for its improvement through traditional breeding, and biochemical and molecular approaches. Importantly, experts in the economic and social science areas also provide key insights as to how forces in the policy and human dimensions intimately interact with geographic factors to help shape the sugarcane crop's potential for deployment as well as its future impact on the energy sector.
CRC Press
Market: Agriculture
October 2015: 235 x 156: 129pp
Hb: 978-1-498-74339-4 £76.99
ebook: 978-1-498-74339-6
* For full contents and more information, visit: www.crcpress.com/9781498743389

Climate Dynamics in Horticultural Science, Volume One
The Principles and Applications
Edited by M. L. Choudhary, Bihar Agricultural University, Sabour, Bhagalpur, India, V. B. Patel, Bihar Agricultural University, Sabour, Bhagalpur, India, Mohammed Wasim Siddiqui, Bihar Agricultural University, India and S. Sheraz Mahdil, Bihar Agricultural University, India
Climate change is already affecting—and is likely to increase—invasive species, pests, and disease vectors, all adversely affecting agri-horticultural crop productivity. Advances in agricultural knowledge, science, and technology will be required to develop improved crop traits, such as temperature, drought, pest, and salt tolerance. This two-volume set gives readers an understanding of the issues and makes suggestions for ways to mitigate adverse climate change effects on crops. The focus of Volume 1: The Principles and Applications in Horticultural Science is to identify impacts and suggest appropriate and effective adaptation and mitigation strategies.
Apple Academic Press
Market: Agriculture
January 2015: 229 x 152: 416pp
Hb: 978-1-771-88031-2 £82.00
ebook: 978-1-482-25255-9
* For full contents and more information, visit: www.crcpress.com/9781771880312

Climate Dynamics in Horticultural Science, Volume Two
Impact, Adaptation, and Mitigation
Edited by M. L. Choudhary, Bihar Agricultural University, Sabour, Bhagalpur, India, V. B. Patel, Bihar Agricultural University, Sabour, Bhagalpur, India, Mohammed Wasim Siddiqui, Bihar Agricultural University, India and R. B. Verma, Bihar Agricultural University, India
Climate change is already affecting—and is likely to increase—invasive species, pests, and disease vectors, all adversely affecting agri-horticultural crop productivity. Advances in agricultural knowledge, science, and technology will be required to develop improved crop traits, such as temperature, drought, pest, and salt tolerance. This two-volume set gives readers an understanding of the issues and makes suggestions for ways to mitigate adverse climate change effects on crops. Volume 2: Impact, Adaptation, and Mitigation focuses on the impact of climate change on horticultural crops and offers ways to adapt practices to mitigate adverse effects.
Apple Academic Press
Market: Agriculture
January 2015: 229 x 152: 382pp
Hb: 978-1-771-88070-1 £82.00
ebook: 978-1-482-25256-6
* For full contents and more information, visit: www.crcpress.com/9781771880701

Water Productivity of Sunflower under Different Irrigation Regimes at Gezira Clay Soil, Sudan
Sunflower is a short duration crop and can be fitted well in the present cropping system of Sudan without bearing any major change in agriculture setup. The planting pattern plays a key role in increasing the yield of sunflowers. Flowering is the most critical stage to water stress caused by deficit irrigation. For this reason, limited irrigation in early and mid flowering stages needs to be avoided, while deficit irrigation at seed formation can be acceptable whenever irrigation water is limited.
CRC Press
Market: Water Science, Technology and Engineering
November 2015: 240 x 170: 166pp
Pb: 978-1-389-02914-9 £44.99
* For full contents and more information, visit: www.crcpress.com/9781389029149
Climate Change and Temperate Forests
Impact, Responses and Management Strategies
Edited by Gebhard Schüler, Steffen Schobel and Paul Nolan

On a regional level, climate change has serious impacts on the environmental, societal and economic worlds. Hand-in-hand with this will be an inevitable shift in forest site conditions in the next decades with serious implications for sustainable forest management. The book discusses regionalized climate change impacts, forest yields, forest diseases, biodiversity, water resources and how to best preserve the multitude of forest goods and services.

CRC Press
Market: Forestry
August 2016: 235 x 156: 400pp
Hb: 978-1-482-21203-7: £114.00
ebook: 978-1-482-21204-4
* For full contents and more information, visit: www.crcpress.com/9781482212037

Managing Oak Forests in the Eastern United States
Edited by Patrick D. Keyser, University of Tennessee, Center for Native Grasslands Management, Knoxville, USA, Todd Fearer, Appalachian Mountains Joint Venture, Blacksburg, Virginia, USA and Craig A. Harper, University of Tennessee, Department of Forestry, Wildlife, and Fisheries, Knoxville, USA

If you are responsible for oak management, this book is for you. It is the definitive practical guide for anyone interested in stewardship of eastern oak forests. Organized into three sections, the first section helps you establish a solid understanding of eastern oak ecosystems. The second section gives practical understanding of how management can be implemented in eastern oak forests. The third and final section helps clarify your objectives and chart a course to bring about the desired outcomes for the forests you are managing.

CRC Press
Market: Agricultural Science
January 2016: 235 x 156: 289pp
Hb: 978-1-498-74287-0: £82.00
ebook: 978-1-498-74288-7
* For full contents and more information, visit: www.crcpress.com/9781498742870

The Paradigm of Forests and the Survival of the Fittest
Edited by Sergio A. Molina-Murillo, University of Costa Rica, San Pedro de Montes de Oca and Carlos Rojas Alvarado, University of Costa Rica, San Pedro de Montes de Oca

This book demonstrates the social, historical, and environmental framework within which humans have developed a relationship with the forest and its resources. Starting from the biological basis that permits the existence of forests to the use of forest resources in a modern human context, this book summarizes the interaction between humans and forest ecosystems. Designed for readers from a broad range of disciplines and interests, the book evokes interest in the development of an integrated approach towards forest ecosystems and natural resources in the context of sustainability.

CRC Press
Market: Forestry
February 2016: 235 x 156: 310pp
Hb: 978-1-498-75105-6: £114.00
ebook: 978-1-498-75106-3
* For full contents and more information, visit: www.crcpress.com/9781498751056
Biochar
Production, Characterization, and Applications
Edited by Yong Sik Ok, Kangwon National University, Chunchon, Korea, Sophie M. Uchimiya, Scott X. Chang, University of Alberta, Edmonton, Canada and Nanthi Bolan
Series: Urbanization, Industrialization, and the Environment
Encompassing high priority research areas such as bioenergy production, global warming mitigation, and sustainable agriculture, biochar has received increased worldwide interest in the past decade. The book covers the fundamentals of biochar including its concept, production technology, and characterization. It builds on this foundation by providing examples of state-of-the-art biochar application technology in agronomy and environmental sciences, along with detailed case studies.

CRC Press
Market: Agricultural Sciences/Environmental Sciences
September 2015: 235 x 156: 416pp
Hb: 978-1-482-24229-4: £89.00
ebook: 978-1-482-24230-0
* For full contents and more information, visit: www.crcpress.com/9781482242294

Geotherapy
Innovative Methods of Soil Fertility Restoration, Carbon Sequestration, and Reversing CO2 Increase
Edited by Thomas J. Goreau, Global Coral Reef Alliance, Cambridge, Massachusetts, USA, Ronal W. Larson, Board-United States Biochar Initiative, Golden, Colorado, USA and Joanna Campe, Remineralize the Earth, Northampton, Massachusetts, USA
Conventional solutions to ecosystem loss are far too small to make a meaningful difference: The large-scale restoration of damaged ecosystems is essential if the climate is to be stabilized. This book covers innovative new technologies for restoring the most productive ecosystems on land while maintaining high biodiversity. This book presents the dramatic results of revolutionary new methods that resolve major factors limiting ecosystem growth, productivity, and the capacity to resist severe environmental stresses, while simultaneously increasing global carbon storage and reducing atmospheric CO2.

CRC Press
Market: Environmental Science
December 2014: 254 x 178: 630pp
Hb: 978-1-466-59539-2: £121.00
ebook: 978-1-466-59540-8
* For full contents and more information, visit: www.crcpress.com/9781466595392

Encyclopedia of Soil Science, Third Edition
Three Volume Set
Rattan Lal, The Ohio State University, Columbus, USA
This three-volume third edition offers a vast array of recent peer-reviewed articles. Compiled by hundreds of international experts, the Encyclopedia of Soil Science, Third Edition, covers all branches of soil science including pedology, mineralogy, physics, soil mechanics, hydrology, chemistry, biology, ecology and management, and restoration of problems/degraded soils. Entries are alphabetically arranged, and subject and author indices are available for easy access. This edition is fully updated, contains over 580 entries, and includes over 100 new definitions.

CRC Press
Market: Agricultural Science
June 2016
Hb: 978-1-498-73890-3: £589.00
Prev Ed Hb: 978-0-415-43038-8
* For full contents and more information, visit: www.crcpress.com/9781498738903

GlobalSoilMap
Basis of the global spatial soil information system
Edited by Dominique Arrouays, INRA-InfoSoil Unit, Orléans, France, Neil McKenzie, CSIRO, Campus International de Baillarguet, Montpellier, France, Jon Hempel, National Soil Survey Center, Lincoln, NE, USA, Anne Richer de Forges and Alex B. McBratney, The University of Sydney, Sydney, Australia
GlobalSoilMap: Basis of the global spatial soil information system contains contributions that were presented at the 1st GlobalSoilMap conference, held 7-9 October 2013 in Orléans, France. These contributions demonstrate the latest developments in the GlobalSoilMap project and digital soil mapping technology for which the ultimate aim is to produce a high resolution digital spatial soil information system of selected soil properties and their uncertainties for the entire world. GlobalSoilMap: Basis of the global spatial soil information system aims to stimulate capacity building and new incentives to develop full GlobalSoilMap products in all parts of the world.

CRC Press
Market: Geosciences
January 2014: 246x174: 494pp
Hb: 978-1-138-00119-0: £121.00
ebook: 978-1-315-77558-6
* For full contents and more information, visit: www.crcpress.com/9781138001190

Geotechnics of Organic Soils and Peat
Bujang B.K. Huat, University Putra Malaysia, Serdang, Malaysia, Arun Prasad, Indian Institute of Technology (BHU), Varanasi, India, Afshin Asadi, Universiti Putra Malaysia, Serdang, Malaysia and Sina Kazemian, Payame Noor University, Iran
Written by renowned experts in this field, this book provides a comprehensive, state-of-the-art overview of peat land, especially with regard to its geotechnical engineering properties. It discusses the geotechnical properties and mechanical behavior of organic soils and peat and covers device-suitable design parameters and construction techniques applicable to conditions. The book also includes techniques for evaluating parameters and details construction methods and techniques for improving their engineering behavior.

CRC Press
Market: Civil Engineering
February 2014: 246x174: 350pp
Hb: 978-0-415-65941-3: £89.00
ebook: 978-0-203-83630-9
* For full contents and more information, visit: www.crcpress.com/9780415659413

Handbook of Geotechnical Investigation and Design Tables
Second Edition
Burt G. Look, Geotechnical Practice Leader, Sinclair Knight Merz, Australia
This practical handbook of properties for soils and rock contains in a concise tabular format the key issues relevant to geotechnical investigations, assessments and designs in common practice. The book provides a useful bridge between soil and rock mechanics theory and its application to practical engineering and is intended primarily for practicing geotechnical engineers working in investigation, assessment and design, but should provide a useful supplement for postgraduate courses. This 2nd edition provides updated information and adjustment from feedback since first published in 2007.

CRC Press
Market: Engineering; Geotechnical Engineering
February 2014: 246x174: 418pp
Pb: 978-1-138-00139-8: £63.99
ebook: 978-1-315-77558-6
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Innovations in Micro Irrigation Technology

Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor), Vishal K. Chavan, AICRP for Dryland Agriculture, Maharshtra, India and Vinod K. Tripathi, Central University of Jharkhand, Ramgarh, India

Series: Research Advances in Sustainable Micro Irrigation

The tenth and final volume in the series Research Advances in Sustainable Micro Irrigation, this valuable book focuses on new and recent innovations in technology, methods, and applications for micro irrigation. The book covers a wide variety of topics, including successes in micro irrigation in India, how new methods have helped the local economies in several areas, ways to enhance crop yield through new building programs, and new technology and systems. It looks at different aspects of these new innovations in micro irrigation, including economic impact, evaluation methods, bubbler systems, success with particular crops, scheduling, and more.

Apple Academic Press
Market: Agriculture
November 2015: 235 x 156: 375pp
Hb: 978-1-771-88150-0: £95.00
ebook: 978-1-771-88291-9
* For full contents and more information, visit: www.crcpress.com/9781771881500

Performance Evaluation of Micro Irrigation Management Principles and Practices

Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor), Vishal K. Chavan, AICRP for Dryland Agriculture, Maharshtra, India and Vinod K. Tripathi, Central University of Jharkhand, Ramgarh, India

Series: Research Advances in Sustainable Micro Irrigation

This new volume in the Innovations and Challenges in Micro Irrigation series covers an array of technologies to estimate evapotranspiration and to evaluate parameters that are needed in the management of micro irrigation, with worldwide applicability to irrigation management in agriculture. Topics include recent evapotranspiration research, performance evaluation of filters and emitters, evaluation of fertigation and ground water with treated wastewater effluent, performance of pulse drip irrigated potato under organic agriculture practices in sandy soils, impact of polyethylene mulch on micro irrigated cabbage, and tree injection irrigation.

Apple Academic Press
Market: Agriculture
February 2016: 235 x 156: 340pp
Hb: 978-1-771-88320-7: £95.00
ebook: 978-1-771-88321-4
* For full contents and more information, visit: www.crcpress.com/9781771883207

Phosphate in Soils

Interaction with Micronutrients, Radionuclides and Heavy Metals

Edited by H. Magdi Selim, Louisiana State University, Baton Rouge, USA

Series: Advances in Trace Elements in the Environment

Several studies have suggested varied interactions of heavy metals with phosphates in soils and the effects of phosphate on the bioavailability and mobility of heavy metals. Edited by one of the best specialists in soil science, this book focuses on the impact of phosphate on the fate of heavy metals in soils and heavy metals in the soil-water-plant as affected by phosphate. It features coverage of sorption and mobility influenced by the presence of phosphate in the vadose zone.

CRC Press
Market: Environmental Science
February 2015: 235 x 156: 341pp
Hb: 978-1-482-23679-8: £89.00
ebook: 978-1-482-23680-4
* For full contents and more information, visit: www.crcpress.com/9781482236798

In-Situ Remediation of Arsenic-Contaminated Sites

Edited by Jochen Bundschuh, University of Southern Queensland (USQ), Toowoomba, QLD, Australia & Royal Institute of Technology (KTH), Stockholm, Sweden, Hartmut M. Hollander, University of Manitoba, Winnipeg, Canada and Lena Qiyin Ma, University of Florida, Gainesville, FL, USA

Series: Arsenic in the environment

Providing an introduction, scientific background, case studies and future perspectives of technologies for soils, soil water and groundwater at contaminated sites. Case studies present especially arsenite and arsenate, but also organic arsenic compounds. The work covers geochemical, microbial and plant ecological solutions for arsenic remediation. Part I: Introduction, Background and Remediation Technologies; Part II: Case Studies: Soils; Geogenic, Mining-Related and Anthropogenic Contaminated Sites; Technical, Ecological and Economical Sustainability of In-Situ Remediation; Modeling.

CRC Press
Market: Environmental Engineering
November 2014: 246x174: 208pp
Hb: 978-0-415-62087-7: £87.99
ebook: 978-0-203-12017-0
* For full contents and more information, visit: www.crcpress.com/9780415620857

2nd Edition
Humic Matter in Soil and the Environment
Principles and Controversies, Second Edition

Kim H. Tan, Professor Emeritus, University of Georgia, Athens, USA

Series: Books in Soils, Plants, and the Environment

The field of humic matter research has undergone drastic changes in concepts and principles, and a second edition is now warranted to communicate these advances. This revised and updated edition continues the tradition of providing comprehensive coverage of the genesis, extraction, properties, and impacts of humic matter on agriculture, industry, and the environment. Chapters examine organic matter; present concepts of humus versus humic matter; and explore the nature and distribution, chemical composition, characterization, electrochemical properties, agronomic and industrial applications, and medicinal and pharmaceutical applications of humic substances.

CRC Press
Market: Agricultural Science
June 2014: 254 x 178: 495pp
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ebook: 978-1-482-23446-6
* For full contents and more information, visit: www.crcpress.com/9781482234459

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Manual of Soil Laboratory Testing
Volume III: Effective Stress Tests, Third Edition

K.H. Head, Independent Consultant, Cobham, UK and Roger Epps, Consultant, Alton, UK

This volume provides a comprehensive working manual for the laboratory testing of soils for civil engineers. It is an essential practical handbook for all who are engaged in laboratory testing of soils as well as being of great value to professional engineers, consultants, academics and students in geotechnical engineering. Revised and updated, the contents reflect current practice in standard laboratory test procedures for determining some of the important engineering properties of soils.

Whittles Publishing
September 2014: 234x156: 416pp
Hb: 978-1-482-22796-3
* For full contents and more information, visit: www.crcpress.com/9781482227963

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Practical Design Calculations for Groundwater and Soil Remediation, Second Edition

Jeff Kuo, California State University, Fullerton, USA

This new edition presents updated information on commonly used remediation technologies and more practical examples. It illustrates the engineering calculations needed for all the major phases of site remediation, starting from site assessment and remedial investigations to selection, design, and implementation of appropriate remedial technologies. It also shows readers how to estimate rates of plume migration as well as assists them in building a better understanding of mass balance, reaction kinetics and types, configuration and sizing of reactors.

Soil hydrological impacts and climatic controls of land use and land cover changes in the Upper Blue Nile (Abay) basin

Ermias Tefere Demessie, UNESCO-IHE Institute for Water Education, Delft, The Netherlands


This thesis investigates land use and land cover change (LULCC) and its links with soil hydrology, soil degradation and climate variability through combining results from fieldwork, laboratory work and Remote Sensing. Seasonal, inter-annual and broad timescale land transitions are analyzed for a robust identification of biophysical change. This thesis also explores soil hydrological impacts of LULCC for a better soil water management. The thesis further explores the climatic controls of the observed trends in vegetated land cover for improved understanding of the link between climate and carbon fixation and water use by vegetation.

Principles and Management of Clogging in Micro Irrigation

Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor), Vishal K. Chavan, AICRP for Dryland Agriculture, Maharasthra, India and Vinod K. Tripathi, Central University of Jharkhand, Brambe, India

Series: Innovations and Challenges in Micro Irrigation

This book emphasizes the implications of micro irrigation clogging, especially under the subsurface placement of laterals. The book offers remedies to decrease clogging and methodologies to improve the performance of micro sprinklers. The book will serve as a reference manual for professionals in biological and civil engineering, horticulture, soil and crop science, and agronomy, as well as for graduate and undergraduate students in related fields.

Soil Management of Smallholder Agriculture

Edited by Rattan Lal, The Ohio State University, Columbus, USA and B.A. Stewart, West Texas A&M University, Canyon, USA

Series: Advances in Soil Science

This book discusses cultural, economic, social, and technological aspects of sustainable soil management for smallholder farmers. Chapters explore soil-related and institutional constraints, principles of sustainable agriculture, soil quality improvement, nutrient and soil fertility management, soil carbon sequestration, soil security, efficient use of resources, and agronomic production. The text encourages optimization of energy-based inputs (fertilizers, pesticides, and irrigation) to restore soil quality and sequester carbon in terrestrial ecosystems.

Soil and Water Chemistry

An Integrative Approach, Second Edition

Michael E. Essington, University of Tennessee, Knoxville, USA

The discipline of soil chemistry examines the chemical and mineralogical characteristics of the soil environment and the chemical processes that distribute matter between the soil solid, solution, and gaseous phases. This book provides a comprehensive treatment of the composition and chemical properties of soils and the processes that govern their fate in the environment. It covers a variety of topics including soil chemical environment, soil minerals, soil organic matter, cation exchange, oxidation-reduction, mineral weathering and solubility, surface chemistry and adsorption reaction, and acidity and salinity in soil materials. The book has been thoroughly revised and all chapters have been updated.

Soil Phosphorus

Edited by Rattan Lal, The Ohio State University, Columbus, USA and B. A. Stewart, West Texas A&M University, Canyon, USA

Series: Advances in Soil Science

Because inappropriate use of phosphorus can lead to non-point source pollution and eutrophication of natural waters, effective systems for managing its use are needed to minimize environmental risks. This book focuses on the availability and recycling of phosphorus, regulatory and policy issues of sustainable phosphorus use, and water quality management in agroecosystems pertaining to phosphorus. Sections are dedicated to global phosphorus reserves, cycling and pathways of phosphorus, phosphorus in agriculture, human dimensions and policy intervention, and research and development priorities.
Soil Remediation
Applications and New Technologies
Edited by Jose T. V. S. de Albergaria, Higher Institute of Engineering of Porto, Portugal and Hendrikus P. A. Nouws, Higher Institute of Engineering of Porto, Portugal

Soil contamination represents a serious environmental problem and requires an immediate action plan to be prepared for typical and emergent contaminants. This book provides an overview of some remediation technologies, both traditional and emergent, as well as case studies based on the contribution from academia and service providers. Several soil and groundwater remediation technologies such as electrokinetic remediation, biological treatments (including phytoremediation), and chemical remediation are presented. Innovative technologies such as nanoremediation and the application of life cycle assessment as a decision tool for soil remediation technologies are also considered in this book.

CRC Press
Market: Agriculture
December 2015: 235 x 156: 180pp
Hb: 978-1-771-88274-3: £76.99
ebook: 978-1-138-02816-6
* For full contents and more information, visit: www.crcpress.com/9781138028166

Subsurface Drainage of Valley Bottom Irrigated Rice Schemes in Tropical Savannah
Case Studies of Tiefora and Moussodougou in Burkina Faso
Amadou Keita, UNESCO-IHE Institute for Water Education, Delft, The Netherlands

The impact of subsurface drainage on ferrous iron concentrations in the African Tropical Savannah rice irrigated valley bottom soils was investigated. The investigations and the analyses where implemented both in two typical valleys (Tiefora and Moussodougou) and in designed experiments. The results showed that subsurface drainage increases ferrous iron concentration in the hematite dominant soils - from 935 mg/l to more than 1106 mg/l in the case of the soil of Moussodougou – but also reduces soil acidity – from pH 5.6 to 7.3 in Moussodougou. This effect will eventually reduce ferrous iron intake by rice roots, alleviating toxicity.

CRC Press
Market: Water Science, Technology and Engineering
October 2015: 240 x 170: 222pp
Pb: 978-1-138-02816-6: £49.99
* For full contents and more information, visit: www.crcpress.com/9781138028166

The Soil Underfoot
Infinite Possibilities for a Finite Resource
Edited by G. Jock Churchman, University of Adelaide, School of Agriculture, Food and Wine, Urrbrae, South Australia, Australia and Edward R. Landa, University of Maryland, College Park, USA

This book educates readers about the central role that soils must play in helping to secure the best possible future for this planet and its human occupants. It provides an expert analysis of challenges faced by humankind and their implications for the availability and sustainability of soils worldwide. The book emphasizes cultural, historical, philosophical, and ethical approaches to understanding soil resources. Chapters cover climate change, diminishing plant nutrients and soil loss, religious views of soil; cultural/historical views and uses of soil; and non-agricultural uses of soils.

CRC Press
Market: soil science
April 2014: 254 x 178: 472pp
Hb: 978-1-466-57157-0: £63.99
ebook: 978-1-466-57155-6
* For full contents and more information, visit: www.crcpress.com/9781466571563

Sustainable Micro Irrigation Design Systems for Agricultural Crops
Methods and Practices
Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor) and P. Panigrahi, ICAR, Bhubaneshwar, Odisha, India
Series: Innovations and Challenges in Micro Irrigation

This book brings together the best research for efficient micro irrigation methods for field crops, focusing on design methods and best practices. Covering a multitude of topics, the book presents research and studies on indigenous alternatives for use of saline and alkali waters, hydraulic performance, distribution of moisture, fertigation technology, buried micro irrigation laterals, drip irrigation scheduling, rainwater harvesting, and adoption and economic impact of a micro irrigation model. This book is a must for those interested in irrigation planning and management, namely, researchers, scientists, educators, and students.

Apple Academic Press
Market: Agriculture
August 2015: 235 x 156: 358pp
Hb: 978-1-771-88274-3: £95.00
ebook: 978-1-138-02815-9
* For full contents and more information, visit: www.crcpress.com/9781771882743

Soil-Specific Farming
Precision Agriculture
Edited by Rattan Lal, The Ohio State University, Columbus, USA and B.A. Stewart, West Texas A&M University, Canyon, USA
Series: Advances in Soil Science

Faced with challenges of resource scarcity and environmental degradation, it is important to adopt innovative farming systems that maximize resource efficiency while protecting the environment. This volume focuses on principles and applications of soil-specific farming, providing information on rapidly evolving agricultural technologies. The book specifically addresses assessments of soil variability and application of modern methods to enhance use efficiency of fertilizers, irrigation, tillage and pesticides through targeted management of soils and crops. Support tools are utilized to target site-specific constraints.

CRC Press
Market: Agriculture
August 2015: 254 x 178: 41pp
Hb: 978-1-482-24533-2: £89.00
ebook: 978-1-482-24534-9
* For full contents and more information, visit: www.crcpress.com/9781482245332

Sustainable Micro Irrigation
Principles and Practices
Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor)

This new book is the first in the new series on micro irrigation, which offers a vast amount of knowledge and techniques necessary to develop and manage a drip/trickle or micro irrigation system. Written by experienced scientists from various parts of the world, the chapters in this book offer basic principles, knowledge, and techniques of micro irrigation management, which are essential in designing, developing, and evaluating an agricultural irrigation management system. The methods and techniques have worldwide applicability to irrigation management in agriculture.

Apple Academic Press
Market: Agriculture
July 2014: 235 x 156: 506pp
Hb: 978-1-771-88016-9: £95.00
ebook: 978-1-482-24624-7
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Sustainable Practices in Surface and Subsurface Micro Irrigation
Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor)
Series: Research Advances in Sustainable Micro Irrigation
This new book, Sustainable Practices in Surface and Subsurface Micro Irrigation, offers a vast amount of knowledge and techniques necessary to develop and manage a drip/trickle or micro irrigation system. The information covered has worldwide applicability to irrigation management in agriculture.

Transport & Fate of Chemicals in Soils
Principles & Applications
H. Magdi Selim, Louisiana State University, Baton Rouge, USA
This book provides the fundamentals for the understanding of reactive chemicals retention and their transport in soils and aquifers. The book offers the first comprehensive treatment with supporting examples of mathematical models that describe contaminants' reactivity and transport in soils and aquifers. It is also a practical guide for designing experiments and collecting data that focus on characterizing retention as well as release kinetic reactions in soils and contaminant transport experiments in the laboratory, greenhouse (colony) and in the field.

Trace Elements in Abiotic and Biotic Environments
Alina Kabata-Pendias, Institute of Soil Science and Plant Cultivation, Pulawy, Poland and Barbara Szteke
This book helps readers understand the fundamental principles and phenomena that control the transfer of trace elements. It describes the occurrence and behavior of trace elements in rocks, soil, water, air, and plants, and also discusses the anthropogenic impact to the environment. In addition, the book covers the presence of trace elements in feeds, as either contaminants or as nutritional or zootechnical additives, and their transfer across the food chain to humans. All trace elements are covered—from aluminum to zirconium as well as rare-earth elements (actinides and lanthanides).

Wastewater Management for Irrigation
Principles and Practices
Edited by Megh R. Goyal, University of Puerto Rico, Mayaguez (Retired professor)
Series: Research Advances in Sustainable Micro Irrigation
This important book focuses on the use of wastewater as a valuable resource for agricultural micro-irrigation purposes. It covers effective wastewater management practices in a variety of climates, including semi-arid regions and others; how to perform effective evaluations to gauge the quality of the water on plants, including potatoes, maize, and eggplant; and the cost–benefit of using wastewater. It addresses the sources of wastewater for irrigation and the problems along with challenges, including water quality, clogging, soil quality, and more.

Trace Elements in Waterlogged Soils and Sediments
Edited by Jorg Rinklebe
Series: Advances in Trace Elements in the Environment
This book fills a need for studying the fate of trace elements in wetland ecosystems and the linked chemical, physical and biological processes. It addresses the fundamental processes governing the behavior and fate of the trace elements as well as issues relating to remediation and management of contaminations in such environments. Treatment of the subject is quite comprehensive, including a discussion of the factors controlling the dynamics and release kinetics of the trace elements and their underlying biogeochemical processes.

2nd Edition • NEW EDITION
Wetland Soils
Genesis, Hydrology, Landscapes, and Classification, Second Edition
Edited by Michael J. Veprkas, North Carolina State University Raleigh, USA, and Christopher B. Craft, Indiana University, Bloomington, USA
Boundaries of a wetland must be identified and located in the field by examining three parameters: wetland plants, wetland hydrology, and hydric soils. This book explains how wetland soils are formed, described, and can be identified in the field. The new edition is a major revision of the 2000 book. Written by scientists with extensive field and academic experience, it contains 11 new chapters; updates throughout; and augments the previous material on wetland functions and restorations, while maintaining the field-oriented focus of the first book.
Comparative Bone Identification

Human Subadult to Nonhuman

**Human and Nonhuman Bone Identification: A Color Atlas**

Diane L. France, Colorado State University, Fort Collins, USA

Continuing in the format of the successful Human and Nonhuman Bone Identification: A Color Atlas, this volume presents new images of human bones from many stages of maturation from neonate to adolescent and compares them to birds, reptiles, amphibians, fish, and mammals that may be confused with a subadult human. Containing almost 3000 color photographs, the book focuses on comparative osteology, provides examples of similar bones that may be confused with the bone in question, and presents images of bones from different angles.

CRC Press
Market: Forensic Science
April 2016: 279 x 216: 760pp
Hb: 978-1-439-82043-8: £159.00
ebook: 978-1-439-82044-5
* For full contents and more information, visit: www.crcpress.com/9781439820438

Comparative Bone Identification

Human Subadult to Nonhuman on DVD

**Comparative Bone Identification: Human Subadult to Nonhuman on DVD**

Diane L. France, Colorado State University, Fort Collins, USA

Continuing in the format of the successful Human and Nonhuman Bone Identification: A Color Atlas, this DVD version of Comparative Bone Identification presents 3000 all-new images of human bones from many stages of maturation. It focuses on comparative osteology from the fetal stage to adolescence, provides examples of non-human bones that may be confused with the human bone in question, shows bones from different angles, and juxtaposes human bones with those of amphibians, reptiles, birds, and young mammals. The material is provided in an easily searchable electronic format for use in the field.

CRC Press
Market: Forensic Science
January 2016: 279 x 216: 800pp
DVD: 978-1-439-82044-5: £114.00
* For full contents and more information, visit: www.crcpress.com/9781439820452

Human Diseases from Wildlife

**Human Diseases from Wildlife**

Michael R. Conover, Director, Jack H. Bemmy Institute, Utah State University, Wildlife Resources Department, Logan, USA and Rosanna M. Vail, Kansas State University, Manhattan, USA

People who handle wildlife, including field workers, wildlife professionals, researchers, and hunters, want to know about potential diseases, risks, and how to protect themselves from zoonotic disease. This book presents information on the most prevalent and serious zoonotic diseases existing in the United States and Canada. Each chapter contains an introduction and history of the disease, symptoms in humans, medical treatment, transmission of pathogens to humans, role of wildlife as reservoirs and vectors, and methods to minimize disease risk.

CRC Press
Market: Agriculture Science
September 2014: 235 x 156: 549pp
Hb: 978-1-466-56214-1: £57.99
ebook: 978-1-466-56215-8
* For full contents and more information, visit: www.crcpress.com/9781466562141

Urban Wildlife Management, Third Edition

**Urban Wildlife Management, Third Edition**

Clark E. Adams, Utah State University, Logan, USA; and Rosanna M. Vail, Kansas State University, Manhattan, USA

Continuing the tradition of the first two editions, Urban Wildlife Management, Third Edition, provides a comprehensive examination of the issues that have led to an increasing need for urban wildlife management. The book focuses not only on ecological matters but also incorporates the political, economic and societal issues necessary to the development of successful planning. Authors explore the changing landscape of wildlife management, offering a historical perspective along with a look at current trends and future directions of wildlife management.

CRC Press
Market: Animal Ecology
April 2016: 254 x 178: 401pp
Hb: 978-1-466-56201-0: £76.99
ebook: 978-1-466-56202-7
* For full contents and more information, visit: www.crcpress.com/9781466562010

Wildlife Habitat Management

**Wildlife Habitat Management**

Brenda C. McComb, Oregon State University, Corvallis, USA

Balancing species-specific management with biodiversity conservation concerns, this textbook integrates silvicultural and forest planning techniques with principles of habitat ecology and conservation biology. The updated edition includes six new chapters, five added case studies, and new appendices on measuring and interpreting habitat elements and using wildlife habitat relationship models. The chapters cover topics including habitat selection, management, and patterns; forest composition; dynamics of disturbance ecology; rangeland and wetland area management; landscape management; assessment and prioritization policies; monitoring techniques; and legal/ethical issues.

CRC Press
Market: Ecology
August 2015: 254 x 178: 401pp
ebook: 978-1-439-87858-3
* For full contents and more information, visit: www.crcpress.com/9781439878569
Advanced R

Hadley Wickham

Series: Chapman & Hall/CRC: The R Series

This practical book presents useful tools and techniques for attacking many types of R programming challenges, helping readers avoid mistakes and dead ends. With more than ten years of experience programming in R, the author shows how R is well tailored for data analysis and statistics. The book develops the necessary skills to produce quality code that can be used in a variety of circumstances. It covers the fundamentals of R, functional programming, metaprogramming, the basics of C++ and Rcpp, and more.

Chapman and Hall/CRC

Market: Statistics

September 2014: 235 x 156: 410pp
Hb: 978-1-466-56550-0: £69.99
ebook: 978-1-466-56551-7

* For full contents and more information, visit: [www.crcpress.com/9781466565500](http://www.crcpress.com/9781466565500)

Textbook

Algorithms for Next-Generation Sequencing

Wing-Kin Sung, National University of Singapore

Series: Chapman & Hall/CRC Mathematical and Computational Biology

Due to advances in sequencing technology, we can view hundreds of millions of short reads in a few days. Sequencing technology enables us to study our genome on a large scale, but it also introduces new challenges, such as how to process vast amounts of data efficiently and how to summarize so much data. This text describes the algorithms for processing next-generation sequencing data. It also presents case studies that illustrate applications of next-generation sequencing.

Chapman and Hall/CRC

September 2016: 255 x 156: 250pp
Hb: 978-1-466-56550-0: £69.99
ebook: 978-1-466-56551-7

* For full contents and more information, visit: [www.crcpress.com/9781466565500](http://www.crcpress.com/9781466565500)

Basics of Molecular Recognition

Dipankar Chatterji, Molecular Biophysics Unit, Indian Institute of Science, Malleswaram, Bangalore, 560001, India

This book describes the major governing rules for biological recognition, self-assembly and the methods that follow. The book concludes with the problem of dimensionality in biological recognition process, and shows how biological recognition can be followed on a surface explaining the effect it has on molecular crowding.

CRC Press

Market: Physics

April 2016: 229 x 152: 152pp
Hb: 978-1-482-21968-5: £63.99
ebook: 978-1-482-21969-2

* For full contents and more information, visit: [www.crcpress.com/9781482219685](http://www.crcpress.com/9781482219685)

Bioinformatics and Biomedical Engineering: New Advances

Proceedings of the 9th International Conference on Bioinformatics and Biomedical Engineering (iCBBE 2015), Shanghai, China, 18-20 September 2015

Edited by James Chou, Harvard Medical School, Boston, Massachusetts, United States of America and Zhou Huaibei

The 9th International Conference on Bioinformatics and Biomedical Engineering (iCBBE 2015) was held on September 18-20, 2015, Shanghai, China. This proceedings volume assembles papers from various professionals engaged in the fields of Biomedical Engineering, Bioinformatics and Computational Biology. The conference had special sessions on biomedical imaging, biostatistics and biometry, information technology in bioinformatics and environmental pollution & public health.

CRC Press

Market: Water Science, Technology and Engineering

October 2015: 246x174: 452pp
Hb: 978-1-138-02784-8: £146.00
ebook: 978-1-315-68301-0

* For full contents and more information, visit: [www.crcpress.com/9781138027848](http://www.crcpress.com/9781138027848)

Bioinformatics Database Systems

Jason T.L. Wang, New Jersey Institute of Technology, Newark, USA and Katherine G. Herbert, University of Montclair, New Jersey, USA

Series: Emerging Directions in Database Systems and Applications

This book explains the world of database systems to bioinformatics and cheminformatics database users. It begins with a survey of popular databases, including primary genetic and protein sequence, phylogenetic, structure and pathway, and microarray databases. The text discusses information management and modeling issues in these databases, addressing data quality issues as well as efforts in the data cleaning field to combat such problems. From drug discovery to the structure of various molecular components of the cell, the authors present new applications and case studies illustrating concepts in database systems.

CRC Press

Market: Database Systems

June 2016: 235 x 156: 300pp
Hb: 978-1-439-81247-1: £49.99
ebook: 978-1-439-81248-8

* For full contents and more information, visit: [www.crcpress.com/9781439812471](http://www.crcpress.com/9781439812471)

Bioinformatics

The Impact of Accurate Quantification on Proteomic and Genetic Analysis and Research

Edited by Yu Liu, University of Wisconsin-Madison, USA

The book introduces bioinformatic and statistical methodology and shows approaches to bias correction and error estimation. It also presents quantitative methods for genome and proteome analysis.

Apple Academic Press

Market: Biological Sciences

February 2014: 229 x 152: 412pp
Hb: 978-1-771-88019-0: £95.00
ebook: 978-1-138-02784-8

* For full contents and more information, visit: [www.crcpress.com/9781771880190](http://www.crcpress.com/9781771880190)
Coarse-Grained Modeling of Biomolecules
Edited by Garegin A. Papoian
Series: Series in Computational Biophysics
Many researchers are choosing computational modeling of biomolecules to analyze data at a level of mechanistic detail that would otherwise prove difficult to achieve. This book reflects on the tremendous impact of computational modeling, focusing on coarse-grained simulations for biomolecules, such as proteins and nucleic acids, for which systems may be too large and the processes too slow for atomistic or quantum simulations. Coverage includes fundamentals as well as applications in state-of-the-art coarse-grained force fields of proteins and nucleic acids.
CRC Press
June 2016: 254 x 178: 448pp
Hb: 978-1-4665-7606-3: £140.00
ebook: 978-1-4665-7617-9
* For full contents and more information, visit: www.crcpress.com/9781466576063

Computational and Visualization Techniques for Structural Bioinformatics Using Chimera
Forbes J. Burkowski, University of Waterloo, Ontario, Canada
Series: Chapman & Hall/CRC Mathematical and Computational Biology
This book shows how to perform computations with Python scripts in the Chimera environment. It covers topics that deal primarily with protein structure and encourages mathematical analysis by providing a firm foundation for computations. Through more than 60 exercises that involve the development of Python scripts, the book gives readers concrete guidance on using the scripting capabilities of Chimera. Python scripts and other material are available on a supplementary website.
Chapman and Hall/CRC
Market: Bioinformatics
July 2014: 235 x 156: 461pp
ebook: 978-1-439-83662-0
* For full contents and more information, visit: www.crcpress.com/9781439836613

Computational Biology and Bioinformatics
Gene Regulation
Edited by Ka-Chun Wong
This book presents the latest research in computational biology and bioinformatics, with a thematic focus on gene regulation. It is designed to be self-contained and comprehensive, targeting senior undergraduates and junior graduate students in the related disciplines such as bioinformatics, computational biology, biostatistics, genome science, computer science, applied data mining, applied machine learning, life science, biomedical science, and genetics. In addition, this book serves as a useful reference for both bioinformaticians and computational biologists.
CRC Press
Market: Biomedical Science
March 2016: 235 x 156: 325pp
Hb: 978-1-4987-2497-5: £108.00
ebook: 978-1-4987-2500-2
* For full contents and more information, visit: www.crcpress.com/9781498724975

Data Warehousing for Biomedical Informatics
Richard E. Biehl
Data Warehousing for Biomedical Informatics is a step-by-step how-to guide for designing and building an enterprise-wide data warehouse across a biomedical or healthcare institution, using a four-iteration lifecycle and standardized design pattern. It enables you to quickly implement a fully-scalable generic data architecture that supports your organization’s clinical, operational, administrative, financial, and research data. By following the guidelines in this book, you will be able to successfully progress through the Alpha, Beta, and Gamma versions, plus fully implement your first production release in about a year.
Auerbach Publications
Market: Bioinformatics
November 2015: 379 x 216: 633pp
Hb: 978-1-482-21521-2: £49.99
ebook: 978-1-482-21522-9
* For full contents and more information, visit: www.crcpress.com/9781482215212

The E-Medicine, E-Health, M-Health, Telemedicine, and Telehealth Handbook (Two Volume Set)
Edited by Halit Eren, Curtin University, Bentley, Australia and John G. Webster, University of Wisconsin, Madison, USA
This two-volume set provides extensive coverage of modern telecommunication in the medical industry, from sensors on and within the body to electronic medical records and beyond. It describes how information and communication technologies, the internet, wireless networks, databases, and telemetry permit the transmission and control of medical information within and between medical centers. Telemedicine and Electronic Medicine addresses everything from cloud computing to teleoncology. Telehealth and Mobile Health discusses topics ranging from telesurgery to bioinformatics for mobility. Both volumes incorporate clinical applications throughout for practical reference.
CRC Press
Market: Biomedical Science
December 2015: 254 x 178: 1412pp
Hb: 978-1-482-21521-2: £179.00
ebook: 978-1-482-29794-2
* For full contents and more information, visit: www.crcpress.com/9781482215212

Textbook
Fundamentals of Systems Biology
From Synthetic Circuits to Whole-cell Models
Markus W. Covert, Stanford University, California, USA
For decades biology has focused on decoding cellular processes one gene at a time, but many of the most pressing questions and diseases such as cancer and heart disease are related to the interaction of hundreds, or even thousands, of gene products. How do we begin to understand this complexity? Systems biology addresses this need, standing at the intersection of computational modeling and high-throughput molecular biology. This textbook introduces readers to the field, walking them through studies that are the foundation and frontier of systems biology.
CRC Press
Market: Electrical Engineering
December 2014: 235 x 156: 367pp
Hb: 978-1-4200-8410-8: £49.99
ebook: 978-1-482-23665-5
* For full contents and more information, visit: www.crcpress.com/9781420084108
3rd Edition · TEXTBOOK

Guide to Health Informatics, Third Edition
Enrico Coiera, Macquarie University, Sydney, Australia

This essential text provides a readable yet sophisticated overview of the basic concepts of information technologies as they apply in healthcare. Spanning areas as diverse as the electronic medical record, searching, protocols, and communications as well as the Internet, Enrico Coiera has succeeded in making this vast and complex area accessible and understandable to the non-specialist, while providing everything that students of medical informatics need to know to accompany their course.

Chapman and Hall/CRC
March 2015: 246 x 199: 710pp
ebook: 978-1-482-21481-9: £49.99
* For full contents and more information, visit: www.crcpress.com/9781482214802

Managing Your Biological Data with Python
Allegra Via, University of Rome La Sapienza, Italy
Kristian Rother, Adam Mickiewicz University, Poznan, Poland
Anna Tramontano, University of Rome La Sapienza, Italy

Series: Chapman & Hall/CRC Mathematical and Computational Biology

Requiring no prior programming experience, this text empowers biologists and other life scientists to work with biological data on their own using the Python language. The book teaches them not only how to program but also how to manage their data. It shows how to read data from files in different formats, analyze and manipulate the data, and write the results to a file or computer screen. Every piece of code in the text is aimed at solving real biological problems.

Chapman and Hall/CRC
Market: Bioinformatics
March 2014: 235 x 156: 560pp
Hb: 978-1-482-21480-2: £108.00
ebook: 978-1-482-21481-9: £44.99
* For full contents and more information, visit: www.crcpress.com/9781482214802

Handbook of Approximate Bayesian Computation
Scott A. Sisson, University of New South Wales, Sydney, Australia
Yanan Fan, University of New South Wales, Sydney, Australia and Mark Beaumont, University of Bristol, UK


Approximate Bayesian Computation (ABC) methods, also known as “likelihood-free” inference methods, can be used to solve very complex (“computationally intractable”) problems. A huge amount of research has been conducted in this area over the last decade and a varied suite of algorithms, models, techniques, and diagnostics have seen widespread application at the forefront of scientific research in a broad array of disciplines. This book presents an overview of ABC methods with a practical focus through lots of real examples and an R package for their implementation.

Chapman and Hall/CRC
Market: Statistics
June 2016: 235 x 156: 320pp
Hb: 978-1-439-88150-7: £57.99
ebook: 978-1-439-88151-4
* For full contents and more information, visit: www.crcpress.com/9781439881507

Introductory Fisheries Analyses with R
Derek H. Ogle, Northland College, Ashland, Wisconsin, USA

Series: Chapman & Hall/CRC The R Series

This book provides detailed instructions on performing basic fisheries stock assessment analyses in the R environment. Accessible to practicing fisheries scientists as well as advanced undergraduate and graduate students, the book demonstrates the flexibility and power of R, offers insight into the reproducibility of script-based analyses, and shows how the use of R leads to more efficient and productive work in fisheries science. The author’s website includes data files, R code, exercises, and other supplementary material.

Chapman and Hall/CRC
Market: Statistics
December 2015: 235 x 156: 317pp
Hb: 978-1-482-23520-3: £49.99
ebook: 978-1-482-23522-7
* For full contents and more information, visit: www.crcpress.com/9781482235203

mHealth Multidisciplinary Verticals
Edited by Sasan Adibi, School of Information Technology, Runwood, Australia

This book provides an overview of the emerging mHealth industry where various verticals are covered under a single volume. It links applications and technologies to key market and vendor players and also highlights interdependencies and synergies between various stakeholders. From the business perspective, this book provides an exposure to various business models and highlights the trends and directions where this vertical market is headed. In addition, it also considers the social perspectives.

Chapman and Hall/CRC
Market: Biomedical Science
November 2014: 254 x 178: 754pp
Hb: 978-1-482-21480-2: £108.00
ebook: 978-1-482-21481-9
* For full contents and more information, visit: www.crcpress.com/9781482214802

Mixture Model-Based Classification
Paul David McNicholas, University of Guelph, Ontario, Canada

This work addresses classification using mixture models broadly. Unlike traditional treatments of the subject that heavily focus on unsupervised approaches, this book gives attention to unsupervised, semi-supervised, and supervised classification paradigms. Case studies illustrate both non-Gaussian and Gaussian approaches to model selection.

Chapman and Hall/CRC
Market: Statistics
June 2016: 235 x 156: 210pp
Hb: 978-1-482-25566-2: £57.99
ebook: 978-1-482-25567-9
* For full contents and more information, visit: www.crcpress.com/9781482255662
Molecular Modeling at the Atomic Scale
Methods and Applications in Quantitative Biology

Edited by Ruhong Zhou, IBM T.J. Watson Research Center, Yorktown Heights, New York, USA
Series: Series in Computational Biophysics
Developments in molecular modeling from experimental and computational techniques have enabled a wide range of biological applications. This timely summary reflects the recent advances in bridging novel algorithms and high performance computing with characterization of important biological processes, such as folding dynamics of key proteins. It encompasses the perspectives of leading experts on this transformation in molecular biology, illustrating with state of the art examples how molecular modeling approaches are being applied to critical questions in modern quantitative biology.

CRC Press
Market: Computational Biology/Biophysics & Biochemistry
August 2014: 235 x 156: 388pp
Hb: 978-1-466-56295-0: £79.99
ebook: 978-1-466-56296-7
* For full contents and more information, visit: www.crcpress.com/9781466562950

Next Generation Sequencing Data Analysis
Xinkun Wang, University of Kansas, Lawrence, USA
Recent advances in genomics technology has dramatically reduced the cost of genome sequencing. Huge amounts of data is generated by next generation sequencing (NGS) technologies, posing substantial data analysis problems for many life scientists. There is a huge gap in the market for a book that gives practical guidance on these complex methods. This book provides practical NGS data analysis techniques for an applied audience with guidance on software and algorithms. It includes lots of examples using real data to illustrate all the techniques. It will be the first authored book on NGS data analysis and will generate a log if interest in this subject area.

CRC Press
Market: Statistics
March 2016: 235 x 156: 246pp
Hb: 978-1-482-21788-9: £57.99
ebook: 978-1-482-21789-6
* For full contents and more information, visit: www.crcpress.com/9781482217889

Oracle Case Management Solutions
Léon Smiers, Capp Gemini, Utrecht, The Netherlands, Manas Deb, Oracle, Joop Koster, Capp Gemini, Utrecht, The Netherlands and Prasen Palvankar, Oracle
This book is among the first books to translate case management from a business problem perspective into appropriate Oracle product usage. Covering the key Oracle technologies that support case management solution components, it explains how to conceptualize and implement quality case management solutions with these products. Detailing a proven solution architecture and reliable roadmap for case management implementation and adoption, the book includes tutorials with step-by-step instructions on building case management solutions using Oracle Siebel and Oracle BPM suites.

Auerbach Publications
Market: Information Technology
October 2015: 254 x 156: 488pp
Hb: 978-1-482-22382-8: £44.99
ebook: 978-1-482-22384-2
* For full contents and more information, visit: www.crcpress.com/9781482223828

Reproducible Research with R and R Studio, Second Edition
Christopher Gandrud, City University, London
Series: Chapman & Hall/CRC The R Series
This second edition incorporates the most important advances that have been developed since the first edition was published, including new packages, improvements to R and RStudio, and changes to GitHub and Dropbox. The book brings together the skills and tools needed for doing and presenting computational research. A practical reproducible research workflow enables you to gather and analyze data as well as dynamically present results in print and on the web. Supplementary materials are available on the author’s website.

Chapman and Hall/CRC
Market: Statistics
June 2015: 235 x 156: 322pp
Pb: 978-1-498-71537-9: £44.99
ebook: 978-1-498-71538-6
* For full contents and more information, visit: www.crcpress.com/9781498715379

RNA-seq Data Analysis
A Practical Approach
Eija Korpelainen, Jarno Tuimala, RS-koulutus, Helsinki, Finland, Panu Somervuo, University of Helsinki, Finland, Mikael Huss, SciLifeLab, Stockholm University, Sweden and Garry Wong, University of Eastern Finland, Kuopio
This self-contained guide enables researchers to examine differential expression at gene, exon, and transcript levels and to discover novel genes, transcripts, and whole transcriptomes. It takes readers through the whole data analysis workflow. Each chapter starts with theoretical background, followed by descriptions of relevant analysis tools and practical examples.

CRC Press
Market: Computer Science & Engineering
September 2014: 235 x 156: 322pp
Pb: 978-1-466-59501-9
ebook: 978-1-466-59500-2
* For full contents and more information, visit: www.crcpress.com/9781466595002

The Role of Bioinformatics in Agriculture
Edited by Santosh Kumar, Brandon Research Centre, Canada
Advances in information technology and next generation sequencing have propelled the use of bioinformatics in agriculture, especially in the area of crop improvement. An extremely large amount of genomics data is available from plants and animals due to tremendous improvements in the field. This book acquaints readers with state-of-the-art sequencing technologies, recent developments in computing algorithms, and certain biological perspectives that influence development of bioinformatics tools by giving specific examples from model plant species. The challenge is now to make sense and use of this wealth of data.

Apple Academic Press
Market: Agriculture
February 2014: 229 x 152: 490pp
Pb: 978-1-771-88003-9: £95.00
ebook: 978-1-482-23967-2
* For full contents and more information, visit: www.crcpress.com/9781771880039
SAFER Electronic Health Records
Safety Assurance Factors for EHR Resilience

Edited by Dean F. Sittig, University of Texas Health Science Center, Houston, USA and Hardeep Singh, Baylor College of Medicine, Waco, Texas, USA

This important volume provide a one-stop resource on the SAFER Guides along with the guides themselves and information on their use, development, and evaluation. The Safety Assurance Factors for EHR Resilience (SAFER) guides, developed by the editors of this book, identify recommended practices to optimize the safety and safe use of electronic health records (EHRs). These guides are designed to help organizations self-assess the safety and effectiveness of their EHR implementations, identify specific areas of vulnerability, and change their cultures and practices to mitigate risks.

Semantic Web for the Life Sciences

Andrea Splendiani and Paolo Romano, National Cancer Research Institute, Genoa, Italy

Series: Chapman & Hall/CRC Mathematical and Computational Biology

Offering a practical introduction for bioinformaticians, computational biologist, and other life scientists, this book explains the basic principles behind the semantic web and explains how to build data management, integration, and analysis solutions that can benefit from this framework. After an overview of basic concepts, the text discusses how to export information on the semantic web and how to use information that is available. It then presents relevant life sciences information resources that are available in the semantic web framework. The authors also include comprehensive, step-by-step examples throughout the book.

Telemedicine and Electronic Medicine

Edited by Halit Eren, Curtin University, Bentley, Australia and John G. Webster, University of Wisconsin, Madison, USA

Features chapters written by leading experts in their fields, this second volume of Telemedicine and Electronic Medicine describes the integration of—and interactions between—modern eMedicine, telemedicine, eHealth, and telehealth practices. It explains how medical information flows through wireless technologies and networks, emphasizing fast-deploying wireless body area networks. It presents the latest developments in sensors, devices, and implantables, from medical sensors for mobile communication devices to drug-delivery systems. It illustrates practical telemedicine applications in telecardiology, teleradiology, teledermatology, teleaudiology, teleoncology, acute care telemedicine, and more.

Semialgebraic Statistics and Latent Tree Models

Piotr Zwiernik, Università degli Studi di Genova, Genoa, Italy


This book explains how to analyze statistical models with hidden (latent) variables. It takes a systematic, geometric approach to studying the semialgebraic structure of latent tree models. The first part of the book introduces key concepts in algebraic statistics, focusing on methods that are helpful in the study of models with hidden variables. The second part illustrates important examples of tree models with hidden variables. The author develops the important concepts of -cumulants and links latent tree models and various tree spaces.

WebGL Insights

Edited by Patrick Cozzi, University of Pennsylvania, Philadelphia, USA

WebGL Insights presents real-world techniques for intermediate and advanced WebGL developers by assembling contributions from experienced WebGL engine and application developers, GPU vendors, browser developers, researchers, and educators. By focusing on current and emerging techniques, this book demonstrates the breadth and depth of WebGL. Readers will gain practical skills to solve problems related to performance, engine design, shader pipelines, rendering, mobile devices, testing, and more.
Bioadhesion and Biomimetics
From Nature to Applications
Edited by Havazelet Bianco-Peled, Technion—Israel Institute of Technology, Haifa and Maya Davidovich-Pinhas, Technion—Israel Institute of Technology, Haifa

Bioadhesion is often defined as the state in which two materials, at least one of which is biological in nature, are held together for extended periods of time by interfacial forces. This book highlights different aspects of this phenomenon. The first section of the book describes studies of natural adhesives. These include "wet" adhesives that are produced and secreted by sessile marine organisms such as mussels and algae and "dry" adhesives such as the one characterizing the gecko foot. The second section focuses on biomimetic adhesives. Finally, the last section reviews medical applications of adhesive materials, including surgical sealants and mucoadhesive drug delivery vehicles.

Pan Stanford
Market: Biomedical Engineering
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Hb: 978-9-814-46398-0: £108.00
ebook: 978-9-814-46399-7
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Computational Bioengineering
Edited by Guigen Zhang, Clemson University, South Carolina, USA

Computational bioengineering takes advantage of the latest computational capabilities to deal with scientific and engineering problems associated with the field of bioengineering, using a multidisciplinary approach. The first book of its kind, this book introduces readers to the need and power of multidisciplinary computer modeling to advance a number of critical areas within bioengineering. It contains comprehensive coverage of the interplay of multiple governing principles underlying common biomedical devices and problems. Many of the contributors will be world class experts and appropriate case studies will be included.

CRC Press
Market: Biomedical Science
April 2015: 254 x 178 508pp
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* For full contents and more information, visit: www.crcpress.com/9781466517554

Medical Devices and Human Engineering

Edited by Joseph D. Bronzino, Biomedical Engineering Alliance and Consortium (BEACON), Hartford, Connecticut, USA and Donald R. Peterson, Texas A&M University, Texarkana, USA
Series: The Biomedical Engineering Handbook, Fourth Edition

As the fourth volume of The Biomedical Engineering Handbook, Fourth Edition, this book covers broad areas such as molecular biology, transport phenomena, physiological modeling, tissue engineering, stem cells, drug delivery systems, artificial organs, and personalized medicine. More than three dozen specific topics are examined, including DNA vaccines, biomimetic systems, cardiovascular dynamics, biomaterial scaffolds, cell mechanobiology, synthetic biomaterials, stem cells, nanobiomaterials, biomedical imaging of engineered tissues, tissue engineering, and bioethics. The material is presented in a systematic manner and has been updated to reflect the latest applications and research findings.

CRC Press
Market: Biomedical Engineering
April 2015: 254 x 178 1891pp
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* For full contents and more information, visit: www.crcpress.com/9781498732840

Molecular, Cellular, and Tissue Engineering

Joseph D. Bronzino, Biomedical Engineering Alliance and Consortium (BEACON), Hartford, Connecticut, USA and Donald R. Peterson, Texas A&M University, Texarkana, USA
Series: The Biomedical Engineering Handbook, Fourth Edition

As the fourth volume of The Biomedical Engineering Handbook, Fourth Edition, this book covers broad areas such as molecular biology, transport phenomena, physiological modeling, tissue engineering, stem cells, drug delivery systems, artificial organs, and personalized medicine. More than three dozen specific topics are examined, including DNA vaccines, biomimetic systems, cardiovascular dynamics, biomaterial scaffolds, cell mechanobiology, synthetic biomaterials, stem cells, nanobiomaterials, biomedical imaging of engineered tissues, tissue engineering, and bioethics. The material is presented in a systematic manner and has been updated to reflect the latest applications and research findings.

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Stem Cell Mechanics
Edited by Tabassum Ahsan, Tulane University, New Orleans, Louisiana, USA

This book will be a comprehensive overview of the latest state-of-the-art research on stem cell mechanics. The focus of this work will deal with an in-depth look at the mechanical forces that play on the external development of stem cells within various systems. It will incorporate details in enabling engineering technologies and scientific findings in terms of stem cell self-renewal, differentiation, and mechanotransduction both in vitro and in vivo.

CRC Press
Market: Biomedical Science
October 2016: 254 x 178 408pp
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TEXTBOOK

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Yang Cai, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA

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CRC Press

**Market:** Biomedical Engineering

December 2014: 235 x 156: 404pp

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**Biomaterials**

Qizhi Chen, Monash University, Clayton, Victoria, Australia and George Thouas, Monash University, Australia

Biomaterials is a multidisciplinary subject involving materials science, engineering, cell biology, and medicine. This textbook provides an appropriate balance between depth and breadth of coverage, sufficient to enable understanding of the most important concepts and principles by students from a wide academic spectrum. The book presents the properties and principles of biomaterials from the point of view of clinical applications and includes learning objectives, laboratory practices, and problems. It was developed from extensive lecture notes created by Dr. Chen at Monash University.

CRC Press

**Market:** Materials Science

December 2014: 254 x 178: 376pp

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**Cell and Matrix Mechanics**

Edited by Roland Kaunas, Texas A&M University, College Station, USA and Assaf Zemel, The Hebrew University of Jerusalem, Israel

This book covers several key areas of cell and tissue mechanics, providing the data and modeling framework for a multiscale analysis. The first section introduces basic concepts and outlines popular approaches used to study the mechanical properties of cells and matrix. The following two sections focus on molecular-scale studies of subcellular and matrix protein mechanics. The third section focuses on cell-cell and cell-matrix interactions. The final section deals with studies at the tissue scale.

CRC Press

**Market:** Biomedical Engineering

October 2014: 254 x 178: 276pp

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**Electrochemical Biosensors**

Edited by Serge Cosnier, Université Joseph Fourier, Grenoble Cedex, France

Series: Pan Stanford Series on the High-Tech of Biotechnology

This book provides an overview of biosensors based on amperometry, conductimetry, potentiometry, square-wave voltammetry, impedance, and electrochemiluminescence and describes the use of ultramicroelectrodes for the real-time monitoring and understanding of exocytosis. Areas of particular interest are the use of silver and gold nanoparticles for signal amplification, photocurrent transduction, and aptamer design. Moreover, advanced insights in the innovative concept of self-powered biosensors derived from biofuel cells are also discussed.

CRC Press

**Market:** Biomedical Engineering

January 2015: 229 x 152: 412pp

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**Computational Biophysics of the Skin**

Edited by Bernard Querleux, L’OREAL Research & Innovation, Aulnay-Sous-Bois, France

This book has the ambition to gather, for the first time, chapters describing scientific computing and numerical modeling for a deeper understanding of mechanisms involved in skin physiology. The book is structured around some skin properties and functions, including optical and biomechanical properties, skin barrier function, and homeostasis, covered through several chapters describing either biological or physical models at different scales.

CRC Press

**Market:** Medicine

July 2014: 229 x 152: 558pp

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**Devices for Mobility and Manipulation for People with Reduced Abilities**

Teodiano Freire Bastos-Filho, Federal University of Espirito Santo, Vitoria, Brazil, Dinesh Kumar, RMIT University, Melbourne, Australia and Sridhar Poosapadi Arjunan, RMIT University, Melbourne, Australia

Series: Rehabilitation Science in Practice Series

This book provides insight into current research trends and discusses the technologies under development for mobility and manipulation for people with reduced abilities. Each chapter starts with a general introduction, followed by technical details and an assessment from the user viewpoint including the user benefits, user suitability, cost, reliability, and required infrastructure. The chapter also provides illustrations or photographs of the devices and is targeted for lay and clinical audience. The book reviews current research and possible development opportunities.

CRC Press

**Market:** Biomedical Engineering

May 2014: 235 x 156: 232pp

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CRC Press
Market: Optical Science & Engineering
October 2014: 254 x 178: 718pp
Hb: 978-1-466-57628-5: £127.00
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Induction of Bone Formation in Primates
The Transforming Growth Factor-beta 3
Edited by Ugo Ripamonti, University of the Witwatersrand, Bone Research Lab, Johannesburg, South Africa
The product of 20 years of study, this book sums up editor Ugo Ripamonti's research into the osteogenic activity of the TGF-β growth factor family, particularly in primates. It explores how the three mammalian TGF-β isoforms have the potential to shed light on the apparent redundancy of bone induction signaling. The book contributes to the fascinating history of BMP and TGF-β research at the intersection of molecular biology, tissue induction, bone regeneration, and craniofacial surgery. It provides a revelatory new awareness to many possibilities in skeletal reconstruction, tissue engineering, and molecular and cellular biology.
CRC Press
Market: Biological Science
October 2015: 235 x 156: 212pp
Hb: 978-1-482-21616-5: £134.00
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Guigen Zhang, Clemson University, South Carolina, USA
This textbook is designed for an introductory course at undergraduate and graduate levels for bioengineering students. It provides a systematic way of examining bioengineering problems in a multidisciplinary computational approach. The book introduces basic concepts of multidisciplinary-based computational modeling methods, provides detailed step-by-step techniques to build a model with consideration of underlying multiphysics, and discusses many important aspects of a modeling approach including results interpretation, validation, and assessment.
CRC Press
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Robert B. Northrop, University of Connecticut, Storrs, USA
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CRC Press
Market: Electrical Engineering
June 2014: 254 x 178: 947pp
Hb: 978-1-466-59677-1: £82.00
ebook: 978-1-466-59679-5
Prev. Ed Hb: 978-0-849-33773-4
* For full contents and more information, visit: www.crcpress.com/9781466596771

Measurement of Soft Tissue Elasticity in Vivo
Techniques and Applications
Yan-Ping Huang, Hong Kong Polytechnic University, China and Yong-Ping Zheng
The product of 20 years of research, this book covers topics in soft tissue elasticity in vivo, from measurement techniques to clinical applications. It provides, for the first time, a single source that systematically introduces the various techniques for in vivo measurement of soft tissue elasticity in an effort to ease the difficulty between learning technical details and clinical applications of techniques. It also proposes two critical directions for the future of the field that would establish standardized and comparable protocols in clinical research and practice.
CRC Press
Market: Biomedical Science
November 2015: 235 x 156: 209pp
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Edited by John G. Webster, University of Wisconsin, Madison, USA and Halit Eren
Series: Electrical Engineering Handbook
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Market: Electrical Engineering
January 2014: 254 x 178: 355pp
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ebook: 978-1-439-86686-3
* For full contents and more information, visit: www.crcpress.com/9781439848838
Medical Instruments and Devices
Principles and Practices
Edited by Steven Schreiner, The College of New Jersey, Ewing, USA; Joseph D. Bronzino, Biomedical Engineering Alliance and Consortium (BEACON), Hartford, Connecticut, USA; and Donald R. Peterson, Texas A&M University, Texarkana, USA.
This book draws on material from the medical instruments and devices section of The Biomedical Engineering Handbook, Fourth Edition. Edited by Schreiner, Bronzino, and Peterson, this reference brings together contributions by world-class experts in the field. Offering comprehensive treatment of the latest developments and research being conducted in biomedical instruments and devices, this is a useful resource for practitioners, scientists, and researchers working in the areas of medical devices and instrumentation as well as graduate students studying bioengineering, instrumentation, and medical devices.
CRC Press
Market: Biomedical Engineering
July 2015: 254 x 178: 320pp
Hb: 978-1-466-58537-9: £121.00
eBook: 978-1-466-58538-6
* For full contents and more information, visit: www.crcpress.com/9781466585386

Myocardial Tissue Engineering
Edited by Tatsuya Shimizu, Tokyo Women’s Medical University, Japan and Katsuhiro Matsuura
This book broadly summarizes myocardial tissue engineering and regenerative medicine, which consists of myocardial cell sources, cell therapy for damaged hearts, and tissue engineering technologies for fabricating beating hearts. It focuses on myocardial cell source, cardiac cells differentiated from embryonic stem (ES)/induced pluripotent stem (iPS) cells. Several chapters highlight innovative technologies developed to overcome the vascularization problem. Remarkable results obtained in the past and the present and challenges for the future in myocardial tissue engineering research field are described in the book.
Pan Stanford
Market: Cardiology
February 2015: 229 x 152: 252pp
Hb: 978-9-814-61376-7: £95.00
ebook: 978-9-814-61375-0
* For full contents and more information, visit: www.crcpress.com/9789814613767

Nanomedicine
Science, Business, and Impact
Michael Hehenberger, HM NanoMed LLC, West Port, Connecticut, USA
By covering the science, business, and societal impact of nanomedicine, this book makes a strong case for funding of basic research, for effective translation of scientific breakthroughs into clinical care of patients and close collaboration among all stakeholders in the healthcare ecosystem. It covers the underlying science and technology of nanomedicine in detail to help understand the great promise of nanomedicine across all disease areas. It presents the topic of nanomedicine, although rich in content, to a wide audience by avoiding scientific jargon and by explaining all special terms and concepts from the ground up while introducing them.
Pan Stanford
Market: Medicine
June 2015: 229 x 152: 428pp
Hb: 978-9-814-61376-7: £121.00
ebook: 978-9-814-61375-0
* For full contents and more information, visit: www.crcpress.com/9789814613767

Microfluidics and Nanotechnology
Biosensing to the Single Molecule Limit
Edited by Eric Lagally, Western Governors University, Salt Lake City, UT, USA
Series: Devices, Circuits, and Systems
While similar books concentrate only on microfluidics or nanotechnology, this book describes integrated approaches for the detection of single cells and molecules. Focusing exclusively on biological and chemical targets, it explores state-of-the-art physical, chemical, contact, and noncontact detection methods, explaining the theory behind the different techniques. By highlighting a variety of technologies, the text allows for a comparison of the fundamental advantages and challenges of each, as well as an appreciation of the power of leveraging scalability and integration to achieve sensitivity at low cost.
CRC Press
Market: Electrical Engineering
May 2014: 235 x 156: 290pp
Hb: 978-1-466-59490-6: £135.00
ebook: 978-1-466-59491-3
* For full contents and more information, visit: www.crcpress.com/9781466594913

2nd Edition
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The Scaffold, Second Edition
Edited by Cato T. Laurencin, University of Connecticut Health Center, Farmington, USA and Lakshmi S. Nair, University of Connecticut, Farmington, USA
Featuring contributions from world-class researchers in the field of tissue engineering, the first edition of this book was the first comprehensive source to explain the development in nanostructured biomaterials for tissue engineering, the relevance of nanostructured materials in tissue regeneration, and the current applications of nanostructured scaffolds for engineering various tissues. This fully revised Second Edition provides a thorough update to the existing material, plus new coverage of the FDA approval process of nanostructure scaffolds, cutting-edge clinical trials, and products based on nanostructured scaffolds.
CRC Press
Market: Biomedical Engineering
October 2014: 254 x 178: 476pp
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Edited by Nicholas Stergiou, University of Nebraska-Omaha, USA

This textbook gives engineering and other students the foundation they need in nonlinear analysis for studying movement variability in their practices. It introduces dynamical systems and time series and presents a wide variety of nonlinear tools such as Lyapunov exponent, surrogation, entropy, fractal analysis, and several others. Each chapter provides examples from the literature and the author’s lab on how the nonlinear analysis tools can be used to understand real-world applications. The book concludes with a chapter on specific case studies.

CRC Press

**Patient Specific Stem Cells**

Edited by Deepak Lamba, Buck Institute for Research on Aging, Novato, CA, USA

An in-depth overview, this book covers the generation of Pluripotent stem cells (iPSC)and the current research in various labs on how the technology is being used to study the diseases and identify novel treatments. It addresses three main areas: (a) various methods of reprogramming somatic cells to derive patient specific IPS Cells, (b) Generation and differentiation of various patient specific stem cells into different tissues including neurons, retinal cells, and cardiac cells, and (c) Applications of the patient derived cells including toxicity testing, and drug discovery.

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**Resistive, Capacitive, Inductive, and Magnetic Sensor Technologies**

Edited by Mohammad Ilyas, Florida Atlantic University, Boca Raton, USA, Sami S. Alwakeel, King Saud University, Riyadh, Saudi Arabia, Mohammed M. Alwakeel and el-Hadi M. Aggoun

Recent advances have made it possible to create small, powerful, energy-efficient, cost-effective sensor nodes capable of adaptation, self-awareness, and self-organization. This book captures the current state of sensor network technologies and explores applications for sustainable development in agriculture, environment, energy, healthcare, transportation, and disaster management. Organized as a collection of articles authored by experts in the field, the text provides scientific tutorials and technical information about smart sensor networks and their use in remote patient monitoring, improving safety on the roadways, and more.

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Gail Vance Civille, Sensory Spectrum Incorporated, New Providence, New Jersey, USA and B. Thomas Carr

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CRC Press
Market: Food & Culinary Science
November 2015: 254 x 178: 600pp
Hb: 978-1-482-21690-5: £95.00
ebook: 978-1-482-21691-2
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Synthetic Biology Handbook

Edited by Darren N. Nesbeth, University College London, UK

This book provides the reader with an explanation of the major goals of synthetic biology: i) making biological tools that are understood as well as the silicon tools developed by the computer industry, ii) using these tools to do useful things within the biology we are already familiar with, such as yeast or stem cells, and iii) using these tools to make entirely new biological entities that previously did not exist in nature. The book also provides technical details of current advances toward these goals.

CRC Press
Market: Biomedical Science
March 2016: 254 x 178: 318pp
Hb: 978-1-466-56847-1: £99.00
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* For full contents and more information, visit: www.crcpress.com/9781466568471

Technologies for Smart Sensors and Sensor Fusion

Edited by Kevin Yallup and Krzysztof Iniewski, Emerging Technologies CMOS Inc., Vancouver, British Columbia, Canada

Series: Devices, Circuits, and Systems

Providing a fundamental and analytical understanding of the underlying technology for smart sensors, this valuable reference describes sensors that can be integrated into arrays and examines the computational power of advanced communication devices. It showcases the latest advancements in sensors with biotechnology, medical science, chemical detection, environmental monitoring, automotive, and industrial applications, discussing software and sensor systems as well as issues surrounding sensor fusion. Containing contributions from authors working at the leading edge of sensor technology, the text inspires innovation in smart sensors and systems.

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Market: Electrical Engineering
April 2014: 254 x 178: 491pp
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ebook: 978-1-466-59551-4
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Vascularization

Regenerative Medicine and Tissue Engineering

Edited by Eric M. Brey, Illinois Institute of Technology, Chicago, USA

This book presents the latest research and science on the process of vessel assembly, with an emphasis on methods for controlling the process for therapeutic applications. It has a strong orientation toward regenerative medicine and tissue engineering applications with contributions from engineers, basic scientists, and biologists. The book provides the reader with an understanding of the process of how blood vessels and methods for controlling this process are engineered in order to develop treatments for various pathologies and surgical situations.

CRC Press
Market: Biomedical Science
August 2014: 254 x 178: 397pp
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* For full contents and more information, visit: www.crcpress.com/9781466580459

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Edited by Richard N. Day, Indiana University, Indianapolis, USA and Michael W. Davidson, Florida State University, Tallahassee, USA
Series: Series in Cellular and Clinical Imaging
This book presents the fundamental principles and latest advances in the field, including the associated development of imaging techniques that exploit fluorescent proteins. The book first traces the history of fluorescent proteins and the revolution they enabled in cellular imaging. It then discusses fluorescent proteins with novel photophysical properties. The book also covers cutting-edge imaging applications, including variations of FRAP for assessing protein dynamics, FRET microscopy of living cells, and superresolution microscopies for molecular imaging.
CRC Press
Market: Molecular & Cell Biology/Biochemistry
April 2016: 235 x 156: 347pp
Hb: 978-1-498-74950-7: £103.00
ebook: 978-1-498-74951-4
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Microarray Image and Data Analysis
Theory and Practice
Edited by Luis Rueda, School of Computer Science, University of Windsor, Ontario, Canada
Series: Digital Imaging and Computer Vision
This book is a compilation of the latest microarray image and data analysis methods from the multidisciplinary international research community. Delivering a detailed discussion of the biological aspects and applications of different types of microarrays, it examines the current state of microarray technology and describes the key stages of image processing, gridding, segmentation, compression, quantification, and normalization. Featuring cutting-edge approaches to clustering and the reconstruction of regulatory networks, the book explains how data generated by microarray experiments are analyzed to obtain meaningful biological conclusions.
CRC Press
Market: Computer Science and Engineering
March 2016: 235 x 156: 500pp
ebook: 978-1-486-75887-1
* For full contents and more information, visit: www.crcpress.com/9781498744267

Fractals
Applications in Biological Signalling and Image Processing
Dinesh Kumar, RMIT University, Melbourne, Australia, Srihari P. Arjunan, RMIT University, Melbourne, Australia and Behzad Allahmand, RMIT University, Melbourne, Australia
A comprehensive guide for those interested in biomedical signal and image processing, this book will provide insight into the advantages and limitations of the fractal measure of biomedical data, including a brief introduction to fractals and other associated measures and the applications for biomedical signals and images. Divided into three sections, the book will discuss the biological data in relation to fractals of biomedical signals, biomedical images, and human wellbeing, including health and ageing. The book will also discuss the experimentally observed differences between the different methods to compute fractals and describe some applications for these techniques.
CRC Press
Market: Biomedical Science
August 2015: 235 x 156: 244pp
Hb: 978-1-498-74421-8: £108.00
ebook: 978-1-486-74422-5
* For full contents and more information, visit: www.crcpress.com/9781498744218

Military Injury Biomechanics
The cause and prevention of impact injuries
Edited by Melanie Franklyn, The University of Melbourne, Department of Mechanical Engineering, Parkville, Victoria, Australia and Peter Vee Sin Lee, The University of Melbourne, Parkville, Victoria, Australia
The book provides a standard reference manual for researchers, postgraduate students and others working or studying the fields of defence injury research and impact injury. It will also provide information that would be quite difficult to source elsewhere unless the reader is already experienced in the discipline and knows where to find the appropriate reference papers.
CRC Press
Market: Biomedical Science
August 2015: 254 x 178: 650pp
Hb: 978-1-498-74282-5: £152.00
ebook: 978-1-498-74283-2
* For full contents and more information, visit: www.crcpress.com/9781498742825

Geometric Modeling and Mesh Generation from Scanned Images
Yongjie Zhang, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA
Series: Chapman & Hall/CRC Mathematical and Computational Imaging Sciences Series
Incorporating a new interdisciplinary approach, this book covers many of the techniques used in computational biomodeling and visualization. It integrates a number of important topics from mechanical engineering, biomedical engineering, computer science, and mathematics. The author introduces readers to the fundamentals of medical imaging, image processing, computational geometry, mesh generation, visualization, and finite element analysis. With end-of-chapter problems, the book is suitable for advanced undergraduate and graduate students in mathematics, mechanical engineering, biomedical engineering, and physics.
Chapman and Hall/CRC
Market: Mathematics
April 2016: 235 x 156: 360pp
Hb: 978-1-482-22776-5: £89.00
ebook: 978-1-482-22777-2
* For full contents and more information, visit: www.crcpress.com/9781482227765

Solid-State Radiation Detectors
Technology and Applications
Edited by Salah Awadalla
Series: Devices, Circuits, and Systems
This book offers a comprehensive review of new and emerging solid-state materials-based technologies for radiation detection, integrating aspects of engineering, application physics, and medical science. Each chapter is structured to address the current advantages and challenges of each material and technology presented, as well as to discuss novel research and applications. Containing contributions from leading experts in industry and academia, this text provides a valuable reference for engineers and scientists looking to enhance the performance of radiation detector technology for medical imaging and other applications.
CRC Press
Market: Engineering - Electrical
March 2015: 235 x 156: 384pp
Hb: 978-1-482-26220-9: £91.00
ebook: 978-1-482-26221-6
* For full contents and more information, visit: www.crcpress.com/9781482262209
Introductory Statistics for the Health Sciences

Lise DeShea, University of Oklahoma Health Sciences Center, Oklahoma City, USA and Larry E. Toothaker, University of Oklahoma, Norman, USA

This textbook provides students entering a health sciences program with a strong, practical foundation in statistics. Real research examples and data sets from many areas in the health sciences illustrate descriptive and inferential statistics, interval estimation, graphing, probability, and other topics. In color throughout, the book can be used in a first-semester course in a health sciences program or in a service course for undergraduate students. Electronic flashcards for smartphones and data sets are available via a supplementary website.

**Textbook**

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Chapman and Hall/CRC

Market: Statistics

Hb: 978-1-466-56533-3: £63.99
eBook: 978-1-466-56534-0

* For full contents and more information, visit: www.crcpress.com/9781466565333

**Quantitative Graph Theory**

Mathematical Foundations and Applications

Edited by Matthias Dehmer, UMIT, Hall in Tirol, Austria and Frank Emmert-Streib, Queen’s University Belfast, UK

This is the first book devoted exclusively to quantitative graph theory. It presents and demonstrates existing and novel methods for analyzing graphs quantitatively. Incorporating interdisciplinary knowledge from graph theory, information theory, measurement theory, and statistical techniques, this book covers a wide range of quantitative-graph theoretical concepts and methods, including those pertaining to real and random graphs. Through its broad coverage, this text fills a gap in the contemporary literature of discrete and applied mathematics, computer science, systems biology, and related disciplines.

**Discrete Event Simulation for Health Technology Assessment**

J. Jaime Caro, McGill University, Montreal, Quebec, Canada, Jörgen Möller, Lund University, Sweden, Jonathan Karon, University of Adelaide, Australia, James Stahl, Dartmouth College, Hanover, New Hampshire, USA and Jack Ishak, Evidera, St. Laurent, Quebec, Canada

This is the first book to make all the central concepts of discrete event simulation relevant for health technology assessment. Accessible to beginners, the book requires no prerequisites and describes the concepts with as little jargon as possible. It presents essential concepts, a fully worked-out implementation example, approaches to analyze the simulations, the development of the required equations, model verification techniques, and validation. The book also covers various special topics and includes a real case study involving screening strategies for breast cancer surveillance.

**Quantitative Methods for Traditional Chinese Medicine Development**

Shein-Chung Chow, Duke University School of Medicine, Durham, North Carolina, USA

This is the first book entirely devoted to the design and analysis of TCM development from a Western perspective, i.e., evidence-based clinical research and development. The book provides not only a comprehensive summary of innovative quantitative methods for developing TCMs but also a useful desk reference for principal investigators involved in personalized medicine. Written by one of the world’s most prominent biostatistics researchers, it covers all of the statistical issues encountered at various stages of pharmaceutical/clinical development of a TCM.

**Health Technology Assessment**

Using Biostatistics to Break the Barriers of Adopting New Medicines

Robert B. Hopkins, MA, MBA, PhD, McMaster University, Hamilton, Ontario, Canada and Ron Goeree, MA, McMaster University, Hamilton, Ontario, Canada

This is the first book that focuses on the statistical options for HTAs, to fully capture the value of health improvements along with their associated economic consequences. After reading the book, readers will better understand why some health technologies receive regulatory or reimbursement approval while others do not, what can be done to improve the chances of approval, and common shortcomings of submissions for drug and device reimbursement. Supplying an accessible introduction to the various statistical options for different methods in an HTA, the book identifies the links to regulatory and reimbursement decisions for each option.

**Biclustering is a data-mining technique that allows simultaneous clustering of rows and columns within a matrix. This book focuses on biclustering as an unsupervised learning method for high-dimensional data and big data structure. The book covers this increasingly important methodology and illustrates its versatility beyond the analysis of gene expression. The book also provides easy-to-follow illustrations of how biclustering can be implemented in practice using the R-based user-friendly graphical interface BiclustGUI.**

Chapman and Hall/CRC

Market: Statistics

Hb: 978-1-482-21824-5: £79.99
eBook: 978-1-466-56534-0

* For full contents and more information, visit: www.crcpress.com/9781482218244

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Singular Spectrum Analysis of Biomedical Signals

Saeid Sanei, University of Surrey, Guildford, UK and Hossein Hassani, Bournemouth University, UK

This book presents newly applied concepts for biomedical applications of singular spectrum analysis (SSA) and introduces a new mathematical and signal processing technique for the decomposition of widely available single channel biomedical data. It enhances current clinical knowledge and aids physicians in improving diagnosis, treatment and monitoring some clinical abnormalities, and also makes suggestions for future SSA research.

CRC Press
Market: Biomedical Science
January 2016: 235 x 156: 260pp
Hb: 978-1-466-58927-8: £69.99
ebook: 978-1-466-58928-5
* For full contents and more information, visit: www.crcpress.com/9781466589278
3D Cell Culture
Principles and Applications
William S. Kisaalita
This book identifies the converging fundamental knowledge bases underpinning the field of 3D cell culture and moves it from art to science. It provides a meaning of three-dimensionality and how it can be assayed. It also provides the value proposition for 3D cell culture in the major application areas. For example, 3D cell cultures are increasingly being used in therapeutic drug discovery programs to screen compounds with promise. The author uses carefully chosen applications to complement incorporated principles.
CRC Press
Market: Biomedical Science
September 2014: 235 x 156: 350pp
Hb: 978-1-466-58238-5: £108.00
* For full contents and more information, visit: www.crcpress.com/9781466582385

Biomass Processing Technologies
Edited by Vladimir Strezov, Macquarie University, Sydney, Australia and Tim J. Evans
This book is a thoroughly up-to-date treatment of all the available technologies for biomass conversion. Each chapter looks at the viability and implementation of each technology with examples of existing equipment and plants. In addition, the text addresses the economics of biomass processing. The book could also be used as a supplementary text for senior undergraduate courses on biomass processing.
CRC Press
Market: Biotechnology
June 2014: 235 x 156: 419pp
Hb: 978-1-466-58239-2: £63.99
* For full contents and more information, visit: www.crcpress.com/9781466582392

Applied Molecular Biotechnology
The Next Generation of Genetic Engineering
Edited by Muhammad Sarwar Khan, Iqrar Ahmad Khan and Debmalya Barh
The latest advances in state-of-the-art development in the rapidly evolving area of Molecular Biotechnology, the technology of the new millennium, are detailed in this book. Descriptions of the cutting-edge science of engineering genes and relocating them in other organisms demonstrate the processes necessary to produce useful, desirable products. The book provides breadth of coverage, taking into account omics, molecular biology, molecular genetics, molecular pathology, microbiology, nanotechnology, and their biotechnological applications in the areas of agriculture, health, and industry.
CRC Press
Market: Biomedical Science
May 2016: 254 x 178: 636pp
Hb: 978-1-498-71481-5: £140.00
ebook: 978-1-498-71483-9
* For full contents and more information, visit: www.crcpress.com/9781498714815

Biomimetic Architectures by Plasma Processing
Fabrication and Applications
Edited by Surojit Chattopadhyay, National Yang Ming University, Taipei, Taiwan
This book focuses on plasma processing of biomimetic nanostructures and, therefore, is different from the other available books of similar nature that are more general. The theoretical description provided in the book helps readers understand why and how these structures are so important in materials science and physics. Essential schematics are provided for ease of understanding of the student community. Sufficient details and advanced instrumentation techniques have been discussed for the benefit of researchers and to increase the acceptability of the book among the wider scientific community.
CRC Press
Market: Biotechnology
December 2014: 229 x 152: 254pp
Hb: 978-9-814-46394-2: £95.00
ebook: 978-9-814-46395-9
* For full contents and more information, visit: www.crcpress.com/9789814463942

Biointeractions of Nanomaterials
Edited by Vijaykumar B. Sutariya, University of South Florida College of Pharmacy, Tampa, USA and Yashwant Pathak, University of South Florida College of Pharmacy, Tampa, USA
With the advent of nanotechnology and its applications in various fields as nano materials and nano systems, there is an increased concern about the safety and compatibility of these systems with bio systems. The main routes of nano materials contact are inhalation, dermal absorption, and ingestion. This book addresses the issues related to nano toxicity and nano safety of nano materials and nano systems. It covers the interactions in biological systems and presents various tools and methods used to evaluate the nano toxicity and nano safety issues.
CRC Press
Market: Nanoscience and Technology
July 2014: 254 x 178: 480pp
Hb: 978-1-466-58239-2: £108.00
ebook: 978-1-466-58239-2
* For full contents and more information, visit: www.crcpress.com/9781466582392

Bioreactors
Animal Cell Culture Control for Bioprocess Engineering
Goutam Saha, North-Eastern Hill University, Shillong, Meghalaya, India, Alok Barua, Indian Institute of Technology Kharagpur, West Bengal, India and Satyabroto Sinha, Indian Institute of Technology Kharagpur, Department of Electrical Engineering, West Bengal, India
This book presents the design, fabrication, and control of a new type of bioreactor. The new bioreactor, called the "see-saw bioreactor," is ideal for the growth of cells with a sensitive membrane. The authors describe the principle of operation of the see-saw bioreactor and how to automatically control the bioprocess. They also discuss the thorough experimental research they conducted on this prototype bioreactor and define the future scope of work in terms of design, control, and software sensors.
CRC Press
Market: Biomedical Science
December 2015: 229 x 152: 350pp
Hb: 978-1-498-73599-5: £89.00
* For full contents and more information, visit: www.crcpress.com/9781498735995
Biosimilarity
The FDA Perspective
Sarfaraz K. Niazi, Therapeutic Proteins International, LLC, Chicago, Illinois, USA
The focus of this book is on how the US FDA will approve biosimilar drugs. The European scene is well developed with specific guidelines that are already in place. However, these guidelines do not apply to the thinking of the FDA in approving these products. The FDA is quite different from other regulatory agencies. With the US providing more than 50% of the worldwide market for these products, every serious manufacturer of biosimilar biological drugs should be targeting US approval of their products. Thus, this book is strictly on FDA approval strategy.
CRC Press
Market: Pharmaceutical Science & Regulation
July 2016: 254 x 178: 432pp
Hb: 978-1-498-75039-4: £121.00
ebook: 978-1-498-75040-0
* For full contents and more information, visit: www.crcpress.com/9781498750394

Biosurfactants
Research Trends and Applications
Edited by Catherine N. Mulligan, Concordia University, Quebec, Canada, Sanjay K. Sharma, JECRC University, Jaipur, India and Ackmez Mudhoo, University of Mauritius, Réduit
Biosurfactants have the properties of reducing surface tension, stabilizing emulsions, promoting foaming and are generally non-toxic and biodegradable. Interest in microbial surfactants has been steadily increasing in recent years due to their diversity, environmentally friendly nature, possibility of large-scale production, selectivity, and potential applications in environmental protection. This book provides an up-to-date, coherently written and objectively presented set of book chapters from eminent international researchers who are actively involved in academic and technological research in the area of biosurfactants.
CRC Press
Market: Applied Chemistry
February 2014: 235 x 156: 352pp
Hb: 978-1-466-51823-0: £119.00
ebook: 978-1-466-51824-7
* For full contents and more information, visit: www.crcpress.com/9781466518230

Biotech, Biomaterials and Biomedical
TechConnect Briefs 2015
Edited by NSTI
The Nano Science and Technology Institute NSTI have built a tradition of being the most prestigious forum in the world for leading Nano Scientists. NSTI provides Nano Scientists with up-to-date global perspective on the latest developments in nanotechnology. This volume outlines the latest developments in: Materials for Drug & Gene Delivery, Cancer Nanotechnology, Sensors, Diagnostics & Imaging, Micro, Nano & Bio Fluidics, Biomaterials, Materials for Personal/Home Care & Cosmetics, Soft Matter & Colloids, Food Materials.
CRC Press
Market: Nanoscience & Nanotechnology
June 2015: 279 x 216: 342pp
Pb: 978-1-498-74729-5: £134.00
* For full contents and more information, visit: www.crcpress.com/9781498747295

2nd Edition - TEXTBOOK - NEW EDITION
Biotechnology Fundamentals, Second Edition
Firdos Alam Khan, Manipal University, Dubai, United Arab Emirates
This is a substantial revision of a successful book designed to be used for an introductory course in biotechnology. Each chapter has been updated with better illustrations and an enhanced pedagogy. This second edition includes new problem sets, key words, better alignment with figures/text, additional solutions with problems contained in the text, and an additional test bank.
CRC Press
Market: Biomedical Science
January 2016: 254 x 178: 951pp
Hb: 978-1-498-72342-8: £82.00
ebook: 978-1-498-72344-2
* For full contents and more information, visit: www.crcpress.com/9781498723428

Biotechnology in Medical Sciences
Firdos Alam Khan, Manipal University, Dubai, UAE
Organized to follow the chronology of major medical biotechnology research, breakthroughs, and events, this first-of-its-kind text covers all aspects of this growing field, from labs to clinics and basic to advanced applications. It describes historical perspectives and modern discoveries, explains how various biotechnology products are used to treat and prevent disease, and discusses the tools and techniques currently employed in medical biotechnology. Complete with colorful illustrations, examples, and end-of-chapter bibliographies for further study, the book provides a comprehensive yet accessible treatment of biotechnology in medicine.
CRC Press
Market: Biomedical Science
May 2014: 254 x 178: 490pp
Hb: 978-1-482-22367-5: £95.99
ebook: 978-1-482-22368-2
* For full contents and more information, visit: www.crcpress.com/9781482223675

Cancer Biomarkers
Minimal and Noninvasive Early Diagnosis and Prognosis
Edited by Debmalya Barh, Angelo Carpi, Pisa University, Italy, Mukesh Verma and Mehmet Gunduz, Turgut Ozal University Medical School, Ankara, Turkey
This book classifies available tumor markers according to their principal characteristics and relative methodologies. It presents and discusses the use of the principal tumor markers available for the management of specific cancers (brain, head and neck, oral, gastrointestinal, lung and mesothelioma, urological, gynecological, thyroid, hematological, and melanoma). Each chapter focuses on one type of cancer and is written by physicians or scientists from various countries who blend their clinical experience and scientific expertise in new technologies to provide a definitive account of cancer biomarker discoveries.
CRC Press
Market: Biotechnology
January 2014: 254 x 178: 951pp
Hb: 978-1-466-58428-0: £168.00
ebook: 978-1-466-58429-7
* For full contents and more information, visit: www.crcpress.com/9781466584280
**Cellulose-Based Graft Copolymers**

*Structure and Chemistry*

Edited by Vijay Kumar Thakur

This book discusses the synthesis, characterization, and properties of multifunctional cellulose-based graft copolymers, offering an overview of the latest technical accomplishments. Presenting the accomplishments of accomplished experts in the field of natural cellulosic polymers, the text addresses a separate biomaterial in each chapter, exploring composition as well as graft copolymerization chemistry. It covers fundamentals and applications, tackles several critical issues, provides suggestions for future work, and supplies deeper insight into the state of the art of advanced cellulose-based graft copolymers.

CRC Press
Market: Polymer Science
April 2015: 254 x 178: 628pp
Hb: 978-1-482-24248-5: £114.00
*For full contents and more information, visit: [www.crcpress.com/9781482242485](http://www.crcpress.com/9781482242485)*

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**Clean Room Technology in ART Clinics**

*A Practical Guide*

Edited by Sandro C. Esteves, Alex C. Varghese and Kathryn C. Worrolow

Regulatory agencies worldwide have issued directives or such requirements for air quality standards in embryology laboratories. This practical guide reviews the application of clean room technology or controlled environments specifically suited for Assisted Reproductive Technology (ART) Units. Its comprehensive coverage includes material on airborne particles and volatile organic compounds, including basic concepts, regulation, construction, materials, certification, clinical results in humans, and more.

CRC Press
Market: Medicine
August 2016: 254 x 178: 325pp
Hb: 978-1-482-25407-5: £114.00
*For full contents and more information, visit: [www.crcpress.com/9781482254075](http://www.crcpress.com/9781482254075)*

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**Enzyme Nanocarriers**

*Edited by Daniela Cardinale, UMR BFP, Villenave d’Ornon, France and Thierry Michon, INRA-University Bordeaux, Villenave d’Ornon, France*

Enzyme immobilization on solid supports has been considered for a long time as an attractive solution to perform sophisticated organic synthesis, as required in the preparation of fine pharmaceutical chemicals. But in the late 1990s, the tremendous progress in molecular biology fundamentals opened up the possibilities to feed a tool box for building new bio-inspired nanotechnologies. The research presented in this book was selected among the most impressive achievements in the fields of enzyme bio-conjugation and bio-inspired nanosupports. It opens up potential applications in nanocatalysis and for lab-on-a-chip and biosensor devices, drug delivery vectors, and nanometrology.

Pan Stanford
Market: Nanoscience
October 2015: 229 x 152: 266pp
Hb: 978-9-814-61342-2: £65.00
*For full contents and more information, visit: [www.crcpress.com/9789814613422](http://www.crcpress.com/9789814613422)*

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**Cyber-Physical Systems**

*From Theory to Practice*

Edited by Danda B. Rawat, Georgia Southern University, Statesboro, USA, Joel J.P.C. Rodrigues, Instituto de Telecomunicações, University of Beira Interior, Covilhã, Portugal, and University of Fortaleza (UNIFOR), Ceará, Brazil and Ivan Stoimenovic, University of Ottawa, Ontario, Canada

This book presents state-of-the-art of research results related to the science, technology, and engineering of cyber-physical systems (CPS), including system architecture, development, modeling, simulation, security, privacy, trust, and energy efficiency. It presents the research results of esteemed professionals on cutting-edge advances in cyber-physical systems that include communications, computing, and control.

CRC Press
Market: Engineering - Electrical
October 2015: 254 x 178: 570pp
Hb: 978-1-482-26332-9: £82.00
Ebook: 978-1-482-26333-6
*For full contents and more information, visit: [www.crcpress.com/9781482263329](http://www.crcpress.com/9781482263329)*

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**Creating Life from Life**

*Biotechnology and Science Fiction*

Edited by Rosalyn W. Berne, University of Virginia, Charlottesville, USA

This book melds essays on biotechnology written by scientists into science fiction stories. It opens a conversation about the morality of what we may one day be, and what it may mean to be human as our biotechnological endeavors continue to evolve.

The biotechnology “revolution,” launched on a global scale many decades ago, has taken a direct course toward re-creating life. Yet there are still many choices to be made in shaping the future that it may one day make possible. The book motivates readers toward deep reflection and continual discourse, which is essential if biotechnology is to evolve in ethical, meaningful, and sustainable ways.

Pan Stanford
Market: Biotechnology
December 2014: 229 x 152: 298pp
Hb: 978-9-814-46358-4: £63.99
Ebook: 978-9-814-46359-1
*For full contents and more information, visit: [www.crcpress.com/9789814463584](http://www.crcpress.com/9789814463584)*

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**FDA Clearance**

*An Integrated Clinical, Engineering, and Business Approach*

Yitzhak Rosen, Superior NanobiOSystems, Silver Spring, Maryland, USA, Pablo Gurman, Argonne National Laboratory, Lemont, IL, USA and Noel Elman, Cambridge, Massachusetts, USA

This book provides a comprehensive overview of FDA (Federal Drug Administration) procedures. It simplifies the complexities involved in getting FDA clearance by using an integrated approach of clinical, engineering, and business aspects. It includes both medical devices and drug development. This involves understanding the structure of the FDA, its purpose, and its initiatives. This book also examines what is needed for designing clinical trials and addressing recalls and failures. It uses case studies to further illustrate the integrated method stressed throughout this work.

CRC Press
Market: Biotechnology
June 2016: 235 x 156: 400pp
Hb: 978-1-482-20708-8: £95.00
*For full contents and more information, visit: [www.crcpress.com/9781482207088](http://www.crcpress.com/9781482207088)*

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CRC Press
Market: Biotechnology
June 2016: 235 x 156: 400pp
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*For full contents and more information, visit: [www.crcpress.com/9781482207088](http://www.crcpress.com/9781482207088)*
TEXTBOOK

Fundamentals of Modern Bioprocessing

Sarfaraz K. Niazi, Therapeutic Proteins International, LLC, Chicago, Illinois, USA and Justin L. Brown, Pennsylvania State University, University Park, USA

This comprehensive bioprocessing textbook deals with the basic concepts, definitions, methods, and applications of the use of biological catalysts to deliver products of high value and utility, from alcohol to recombinant monoclonal antibodies to common day use fuel. It covers all modern aspects, including the means of processing that are required for drug processing to the use of biofuels, downstream bioprocessing, bioprocess design, and regulatory affairs, among many other cutting-edge topics. Applications and case studies are incorporated throughout.

CRC Press

Market: Chemical Engineering
November 2015: 254 x 178: 740pp
Hb: 978-1-466-58573-7: £82.00
ebook: 978-1-466-58574-4
* For full contents and more information, visit: www.crcpress.com/9781466585737

5th Edition - NEW EDITION

Glossary of Biotechnology and Agrobiotechnology Terms, Fifth Edition

Kimball Nill, American Soybean Association, St. Louis, Missouri, Minnestoa Soybean, Mankato, USA

The 5th edition of Glossary of Biotechnology and Agrobiotechnology Terms will be a significant expansion of the previous 4th edition. In the past decade, many new terms have been introduced due to the appearance and application of new methods as well as technical advances in genetics, molecular biology, cell biology and agricultural research. The 5th edition, like previous editions, will be useful for regulators of agricultural biotechnology around the world, customers, and agbio tech company executives, as well as biopharmaceutical industries and academics.

CRC Press

Market: Biomedical Science
July 2016: 279 x 216: 400pp
Hb: 978-1-498-75820-8: £140.00
ebook: 978-1-498-75821-5
* For full contents and more information, visit: www.crcpress.com/9781498758208

Handbook of Encapsulation and Controlled Release

Edited by Mumayya Mishra, c/o Altia Research Center, Richmond, Virginia, USA, Editor in Chief, International Journal of Polymeric Materials and Polymeric Biomaterials, Taylor & Francis, Philadelphia, Pennsylvania, USA

Written at a level comprehensible to non-experts, this handbook covers the current state of encapsulation and controlled release technologies, presenting the fundamental processes involved and exploring how to use those processes for different applications in various industries. It is a comprehensive source of technical information and current practices of encapsulation in research and industry, providing a much-needed authoritative reference for continued research and development in encapsulation and controlled release technologies.

CRC Press

Market: Materials Science
November 2015: 254 x 178: 1512pp
Hb: 978-1-482-23232-5: £254.00
ebook: 978-1-482-23234-9
* For full contents and more information, visit: www.crcpress.com/9781482232325

Industrial Biocatalysis

Edited by Peter Grunwald, University of Hamburg, Germany

Modern biocatalysis relies on the tremendous advances in omics techniques and the structural elucidation of biomolecules, which have led to synthetic biology and metabolic engineering as new research fields with high application potential for the rational design of enzymes and microbial production strains. In this book, renowned scientists discuss the actual developments in these research fields together with a variety of application-oriented topics.

CRC Press

Market: Biotechnology
December 2014: 229 x 152: 1232pp
Hb: 978-1-466-58573-7: £82.00
ebook: 978-1-466-58574-4
* For full contents and more information, visit: www.crcpress.com/9781466585737

Innovation, Commercialization, and Start-Ups in Life Sciences

James F. Jordan, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA

This book specifically provides the reader with the methodologies necessary to create a successful life sciences start-up from initiation to exit. The readers gain an appreciation for the necessary data, partnership, and skills to be acquired and the constituencies that must be satisfied, along the way. It presents data and analytical processes articulating the fundable milestones for angel and venture capital. It also provides tools for creating branding for public investors and more.

CRC Press

Market: Biotechnology
November 2014: 235 x 156: 254pp
Hb: 978-1-482-21012-5: £57.99
ebook: 978-1-482-21013-2
* For full contents and more information, visit: www.crcpress.com/9781482210125

4th Edition - NEW EDITION

Knight’s Forensic Pathology Fourth Edition

Pekka Saukko, Dr.med.univ. (Vienna), Dr.Med.Sci., Specialist in Forensic Medicine, Dr.h.c Professor and Head, Department of Forensic Medicine, University of Turku, Turku, Finland and Bernard Knight, University of Wales College of Medicine, Cardiff, UK

The fourth edition of this book continues to be the definitive international resource for those in training and practice, covering all aspects of the medico-legal autopsy, including the cause and time of death, interpretation of wounds and every other facet of the investigation of a fatality. It emphasizes the practical application of knowledge, research findings and the value of observation over received wisdom. This new edition includes 200 new colour illustrations and all black and white drawings have been redrawn in full colour.

CRC Press

Market: Forensics
January 2016: 279 x 216: 666pp
Hb: 978-1-444-16508-1
* For full contents and more information, visit: www.crcpress.com/9780340972533
Laboratory Biosecurity Handbook, Second Edition
Reynolds M. Salerno, Sandia National Laboratories, Albuquerque, New Mexico, USA, Jennifer Gaudioso, Sandia National Laboratories, Albuquerque, New Mexico, USA, and Benjamin H. Brodsky

This book describes the risks of working with dangerous pathogens and toxins in the current era of international terrorism. The authors characterize the global spread of legitimate biotechnology and relate it to the rise of transnational terrorism, emphasizing the need for biosecurity measures even in legitimate bioscience. This second edition is considerably longer than the first and includes several new chapters and sections, with the final two-thirds of the book entirely reorganized.

CRC Press
Market: Biomedical Science
August 2016: 235 x 156: 352pp
Hb: 978-1-498-70961-3: £114.00
ebook: 978-1-498-70962-0
* For full contents and more information, visit: www.crcpress.com/9781498709683

Micro- and Nano-Scale Sensors and Transducers
Ezzat G. Bakhoum

Summarizing the state of the art in sensor and transducer technology, this book will help readers make more informed selections of sensors or transducers for particular applications. The book describes the differences between new sensor and transducer technologies that are based on nanotechnology and nanofabrication and the older or “classical” sensor technologies. It presents the new structures of pressure sensors being used in such applications as mechanical pressure sensing, gas pressure sensing, and atmospheric pressure sensing. Each chapter in the book includes a set of short questions with answers.

CRC Press
Market: Nanoscience & Technology
April 2015: 235 x 156: 187pp
Hb: 978-1-482-25090-9: £76.99
ebook: 978-1-482-25091-6
* For full contents and more information, visit: www.crcpress.com/9781482250909

Labs on Chip
Principles, Design, and Technology
Eugenio Iannone, Dianax s.r.l. CEO and Founder, Milano, Italy

Series: Devices, Circuits, and Systems
This book provides a complete reference for labs on chip in biotechnology, presenting a global view of current research and development. It integrates coverage of technology issues with strong theoretical explanations of design techniques; describes biochemical elements required to work on labs on chip; discusses fabrication, microfluidic, and electronic and optical detection techniques; and addresses planar technologies, polymer microfabrication, and process scalability to huge volumes. Devoting a chapter to labs on chip for genetics, this cutting-edge text offers valuable guidance for the design decision-making process.

CRC Press
Market: Engineering - Electrical
October 2014: 254 x 178: 500pp
Hb: 978-1-466-56072-7: £152.00
ebook: 978-1-466-56073-4
* For full contents and more information, visit: www.crcpress.com/9781466560727

Liposomes in Analytical Methodologies
Edited by Katie A. Edwards, Cornell University, Ithaca, New York, USA

Liposomes in Analytical Methodologies provides up-to-date consideration of actively researched techniques, written by expert investigators in their respective fields from a perspective not readily available in the primary literature. The introductory chapter serves as a primer for readers entering the area as well as a refresher for those with existing background to understand the fundamentals and broad application of liposomes for analytical purposes. With topics ranging from liposome arrays that exhibit environment-dependent color changes to exquisite fluorescent imaging, readers will gain an appreciation for the versatile utility that liposomes can add to the analytical toolbox.

CRC Press
Market: Analytical Chemistry
December 2015: 229 x 152: 450pp
Hb: 978-9-814-66926-9: £114.00
ebook: 978-9-814-66927-6
* For full contents and more information, visit: www.crcpress.com/9789814669269

Marine Glycobiology
Principles and Applications
Edited by Se-Kwon Kim

Marine glyco/biotechnology is an emerging and exciting area in the field of science and medicine. Glyco/biotechnology, the study of the structure and function of carbohydrates and carbohydrate-containing molecules, is fundamental to all biological systems and represents a developing field of science that has made huge advances in the last half-century. This book revolutionizes the concept of marine glyco/biotechnology, focusing on the latest principles and applications of marine glyco/biotechnology and their relationships.

CRC Press
Market: Biomedical Science
May 2016: 254 x 178: 500pp
Hb: 978-1-498-70961-3: £134.00
ebook: 978-1-498-70962-0
* For full contents and more information, visit: www.crcpress.com/9781498709613

Marine OMICS
Principles and Applications
Edited by Se-Kwon Kim, Pukyong National University, Busan, South Korea

This book provides comprehensive coverage on current trends in marine omics of various relevant topics such as genomics, lipidomics, proteomics, foodomics, transcriptomics, metabolomics, nutrigenomics, pharmacogenomics and toxicogenomics as related to and applied to marine biotechnology, molecular biology, marine biology, marine microbiology, environmental biotechnology, environmental science, aquaculture, pharmaceutical science and bioprocess engineering.

CRC Press
Market: Biomedical Science
May 2016: 254 x 178: 500pp
Hb: 978-1-482-25092-6: £146.00
ebook: 978-1-482-25093-3
* For full contents and more information, visit: www.crcpress.com/9781482250926
Microbial Biotechnology
Progress and Trends
Edited by Farshad Davishi Harzevili, University of Maragheh, Iran and Hongzhong Chen, Institute of Process Imaging, Chinese Academy of Sciences, Beijing
Microbial biotechnology is defined as "any technological application that uses microbiological systems, microbial organisms, or derivatives thereof, to make or modify products or processes for specific use." This book presents an overview of all of the latest developments and innovations taking place in the highly interdisciplinary field. Many of the contributors are world-class researchers in a numbers of key subfields. The text also incorporates relevant case studies throughout the book.
CRC Press
Market: Biotechnology
November 2014: 254 x 178: 376pp
Hb: 978-1-482-24520-2 £99.00
eBook: 978-1-482-24521-9
* For full contents and more information, visit: www.crcpress.com/9781482245202

Molecular Diversity of Environmental Prokaryotes
Edited by Thiago Bruce Rodrigues, Faculdade de Tecnologia e Ciências, Salvador, Brazil and Amaro Emiliano Trindade Silva, Faculdade de Tecnologia e Ciências, Salvador, Brazil
This book correlates the vast genetic diversity associated with environmental samples and still underexploited potential for the development of biotechnological products. The book points out the potential of different types of environmental samples. It presents the main characteristics of microbial diversity, the main approaches used for molecular characterization of the diversity, and practical examples of application of the exploration of the microbial diversity. It presents a not-yet-explored structure for discussing the main topics related to molecular biology of environmental prokaryotes and their biotechnological applications.
CRC Press
Market: Biomedical Science
July 2016: 254 x 178: 376pp
Hb: 978-1-482-23322-3 £44.99
ebook: 978-1-482-23323-0
* For full contents and more information, visit: www.crcpress.com/9781482233223

Nanoparticles in Humans
Experiments, Methods and Strategies
Edited by Lev S. Ruzer, Lawrence Berkeley National Laboratory, California, USA
This book presents new ideas, methods, and experimental results to measure the surface area and local deposition of nanoparticles in lungs and the true effectiveness of respirators. It includes a nanoparticles dosimetric road map that can be used as a general strategy for the assessment of dose, which is the most important physical cause of health effect in case of nanoparticles exposure. The book uniquely uses graphs and diagrams to build an understanding of the methods for measuring the surface area and local deposition of nanoparticles in lungs and the effectiveness of respirators in case of nanoparticles exposure.
CRC Press
Market: Biomedical Engineering
May 2016: 229 x 152: 350pp
Hb: 978-9-814-6316-4 £95.00
ebook: 978-9-814-6317-1
* For full contents and more information, visit: www.crcpress.com/9789814631644

Nanopatterning and Nanoscale Devices for Biological Applications
Edited by Seila Šelimović, Harvard Medical School, Cambridge, Massachusetts, USA
Series: Devices, Circuits, and Systems
Offering valuable insight into the latest developments in nanoscale technologies for the study of biological systems, this book covers device fabrication methods targeting the substrate on the nanoscale through surface modification, explores the generation of nanostructured biointerfaces and bioelectronics elements, discusses biosensors and integrated devices with nanoscale functionalities, and examines biological applications of nanoscale devices, including a review of nanotechnology in tissue engineering. It provides a deep understanding of the cutting-edge applications of nanotechnologies in biological engineering, and how to apply the relevant scientific concepts.
CRC Press
Market: Nanoscience & Technology
July 2014: 235 x 156: 417pp
Hb: 978-1-466-58631-4 £103.00
ebook: 978-1-466-58632-1
* For full contents and more information, visit: www.crcpress.com/9781466586314

Nanostructures in Biological Systems
Theory and Applications
Alex Iglī, Damjana Drobnè, University of Ljubljana, Slovenia and Veronika Krail-Iglī
The book surveys recent theoretical and experimental results on nanostructures in biological systems and explores possible applications. It takes a unifying approach starting from the single-particle energy, deriving free energy of the system and determining the equilibrium by minimizing the free energy, is applied in describing electrical and elastic phenomena. The authors present potential clinical uses of in hemostasis, inflammation, and spreading of cancer. They also cover interactions between biological membranes and inorganic nanostructures.
CRC Press
Market: Biomedical Science
June 2015: 229 x 152: 534pp
Hb: 978-9-814-6720-5 £95.00
ebook: 978-9-814-6721-6
* For full contents and more information, visit: www.crcpress.com/9789814672054

Natural Biophotonic Architectures
Complex Optical Effects and Bioimimetic Applications
Edited by Pramod Kumar, Femtosecond Laser Laboratory, Knowledge City, Mohali, India and Kamal P. Singh, Femtosecond Laser Laboratory, Knowledge City, Mohali, India
Series: Biomimetics Series
This book documents key developments in the field of complex optical effects in natural biophotonic architectures. It provides a model for inspiration, reviews the current state of the art, and describes and discusses challenges in understanding nature’s capabilities to manipulate light. It describes the photonic architecture in the eye system of various insects, its spectral and polarization sensitivity, and functions. It also discusses developments of new optics-based device concepts motivated by natural design.
CRC Press
Market: Physics
August 2016: 235 x 156: 350pp
Hb: 978-1-482-23217-2 £108.00
ebook: 978-1-482-23218-9
* For full contents and more information, visit: www.crcpress.com/9781482232172

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Neurotechnology in National Security and Defense
Practical Considerations, Neuroethical Concerns
Edited by James Giordano, Neuroethics Studies Program, Pellegrino Center for Clinical Bioethics, Georgetown University, Washington, D.C., USA and Potomac Institute for Policy Studies, Arlington, Virginia, USA
Series: Advances in Neurotechnology
Research and applications of neurotechnology are expanding at a rapid pace, and are fostering, public concerns and debate about the ethical issues generated by such research and use. This second volume in the Advances in Neurotechnology series specifically addresses the neuroethical, legal, and social issues arising from the use of neurotechnology in national security and defense. Presenting an integrative perspective, leading international experts lay the scientific groundwork and establish the premises necessary to appreciate the ethical aspects of neurotechnology in national security and defense.
CRC Press
Market: Biomedical Science
September 2014: 235 x 156: 315pp
Hb: 978-1-482-22833-5: £66.99
ebook: 978-1-482-22834-2
* For full contents and more information, visit: www.crcpress.com/9781482228335

Noninvasive Molecular Markers in Gynecologic Cancers
Edited by Debmalya Barh and Mehmet Gunduz, Turgut Ozal Universitesi Hastanesi, Turkey
In cancer treatment, non-invasive diagnosis can avoid complications of biopsy and other unfavorable impacts on patient’s health. DNA, methylation, SNPs, miRNA, mRNA, protein, autoantibodies, metabolite, and Omics based markers from remote media (blood, serum, plasma, urine, stool, sputum, saliva, etc.) are emerging as noninvasive molecular markers having high specificity and sensitivity towards many cancers. In many instances these markers are also emerging as next-generation personalized diagnostics and targets or therapeutics for personalized cancer treatment. This book classifies the available molecular tumor markers according to their principal characteristics and relative methodologies.
CRC Press
Market: Biotechnology
January 2015: 254 x 178: 516pp
Hb: 978-1-466-56938-6: £108.00
ebook: 978-1-466-56939-3
* For full contents and more information, visit: www.crcpress.com/9781466569386

Principles of Membrane Bioreactors for Wastewater Treatment
Hee-Deung Park, In-Soung Chang and Kwang-Jin Lee
Membrane bioreactor (MBR) technology is a wastewater treatment method combining biological pollutant treatment with physical membrane separation. It has gained increasing commercial significance over the last decade, with applications in municipal and industrial wastewater treatment becoming increasingly widespread. This book covers a wide variety of MBR topics, including filtration theory, membrane materials and geometry, fouling phenomena and properties, and strategies for minimizing fouling. Also covered are practical aspects such as operation, maintenance, design, and application.
CRC Press
Market: Biotechnology
April 2015: 235 x 156: 445pp
Hb: 978-1-466-59037-3: £82.00
ebook: 978-1-466-59038-0
* For full contents and more information, visit: www.crcpress.com/9781466590373

Proteotronics
Development of Protein-Based Electronics
Eleonora Alfinito, Salento University, Lecce, Italy, Jeremy Pousset, Institute for the Microelectronics and Microsystems, Lecce, Italy and Lino Reggiani, Salento University of Lecce, Italy
This book aims to review a variety of experiments devoted to the investigation of charge transport in proteins and present a unified theoretical model to interpret macroscopic results in terms of the amino-acid backbone structure of a single protein. The purpose of this book is to serve a broad audience of researchers involved in the field of electrical characterization of biological materials and in the development of new molecular devices based on proteins, such as nanometric biological sensors of new generation. The book serves as a reference platform as it surveys the existing data and presents the basis for future development of a new branch of nanoelectronics, called proteotronics.
Pan Stanford
Market: Electrical Engineering
October 2015: 229 x 152: 280pp
Hb: 978-9-814-41164-6: £95.00
ebook: 978-9-814-41165-3
* For full contents and more information, visit: www.crcpress.com/9789814411646

RNA Nanotechnology
Edited by Bin Wang
A comprehensive volume, this book details the traditional approaches and the latest developments in the field of RNA-related technology. It targets a wide audience: a broad introduction provides a solid academic background for students, researchers, and scientists who are unfamiliar with the subject, while the in-depth descriptions and discussions are useful for advanced professionals. Although various compilations address topics related to deoxyribonucleic acid (DNA) and protein, there are few books that focus on determining the structure of ribonucleic acid (RNA) and using RNA as building blocks to construct nanoarchitectures for biomedical and healthcare applications.
Pan Stanford
Market: Biotechnology
April 2014: 229 x 152: 466pp
Hb: 978-9-814-41163-9: £95.00
ebook: 978-9-814-41165-3
* For full contents and more information, visit: www.crcpress.com/9789814411639

Statistical Optimization of Biological Systems
Tapobrata Panda, Indian Institute of Technology Madras, Chennai, India, Thomas Theodore, Siddaganga Institute of Technology, Tumkur, India and R. Arun Kumar, Indian Institute of Technology Madras, Chennai, India
This book explains how to apply non-statistical and statistical techniques to the optimization of biological systems. Employing real-life bioprocess optimization problems and their solutions as examples, the text describes experimental design from identifying process variables to selecting a screening design, applying response surface methodology, and conducting regression modeling. It demonstrates the statistical analysis and optimization of different experimental designs, details the optimization techniques employed to determine optimum levels of the process variables for both single- and multiple-response systems, and discusses important experimental designs.
CRC Press
Market: Biochemical Engineering, Biotechnology, and Chemical Engineering
November 2015: 235 x 156: 278pp
Hb: 978-1-482-22833-5: £89.00
ebook: 978-1-482-22834-2
* For full contents and more information, visit: www.crcpress.com/9781482228335

Browse and order online: www.crcpress.com
Tapping Molecular Wilderness
Drugs from Chemistry—Biology—Biodiversity Interface

Yongyuth Yuthavong, National S&T Development Agency, Pathumthani, Thailand

This book is for readers with some background in science, concerning the search for drugs, starting from molecular diversity in nature or molecular wilderness. It differs from those available on the subject of natural products and drugs derived therefrom in that it looks at the broad picture on how materials and organisms from nature affect our health and how we have combined our knowledge in chemistry, biology, and biodiversity to promote our wellness from resources in the “molecular wilderness,” with caveats on sustainable utilization of these resources.

Pan Stanford
Market: Biotechnology
September 2015: 229 x 152: 156pp
Hb: 978-9-814-61359-0: £31.99
eBook: 978-9-814-61360-6
* For full contents and more information, visit: www.crcpress.com/9789814613590

3rd Edition
Therapeutic Peptides and Proteins
Formulation, Processing, and Delivery Systems, Third Edition

Ajay K. Banga, Mercer University, Macon, Georgia, USA

Examining the fastest growing sector in the biopharmaceutical market, this book discusses the advancement of protein drug development using peptides and proteins as the basis for prophylactic agents such as newly developed vaccines. As in the first two editions, this book employs a simple and straightforward style to discuss protein formulation and delivery from the basic to the more complex factors affecting protein stability and delivery. This third edition includes new information on insulin analogs, monoclonals, microneedles, and U.S. FDA guidelines.

CRC Press
Market: Pharmaceutical Science & Regulation
April 2015: 235 x 156: 400pp
Hb: 978-1-466-56607-1: £95.00
eBook: 978-1-466-56606-4
* For full contents and more information, visit: www.crcpress.com/9781466566064

Transport of Nanoparticles in Tissues

Edited by Petr Kloucek

Suitable for practitioners of nano-medicine in combination with drug delivery, imaging, or nutrition, as well as for graduate students of medicine, physics, chemistry, or mathematics, this book addresses the mobility of sub-micron particles in tissues, complex bio-environments, and tumors. It supplies mesoscopic and macroscopic descriptions of the interstitial tissue matrix that plays a fundamental role in the nano-transport. By detailing the governing equations and outlining theoretical, modeling, and computational aspects, the text provides a framework for relating the underlying tissue structure with basic flow parameters.

Pan Stanford
Market: Materials Science
December 2015: 229 x 152: 500pp
Hb: 978-9-814-66932-0: £95.00
eBook: 978-9-814-66933-7
* For full contents and more information, visit: www.crcpress.com/9789814669320

Understanding Enzymes
Function, Design, Engineering and Analysis

Edited by Allan Svendsen, Novozymes A/S, Bagsvaerd, Denmark

This book focuses on new understanding of enzyme function and optimization, past enzyme function analysis, enzyme engineering, and growing insights from the simulation work as well as nanotechnology measurement of enzymes in action in vitro or in silico. It presents insights into the mechanistic function and understanding of enzyme reactions and covers novel structure analysis technologies in conjunction with x-ray and NMR structural methods. The text discusses topics including single molecules, molecular dynamic simulations of different conformers of enzymes, surface enzyme kinetics, metagenomics and bioinformatics sequence handling, and coupled reactions in nanodevices.

Pan Stanford
Market: Biomedical Science
January 2016: 229 x 152: 700pp
Hb: 978-9-814-66932-0: £114.00
eBook: 978-9-814-66933-7
* For full contents and more information, visit: www.crcpress.com/9789814669320

Viral Diagnostics
Advances and Applications

Edited by Robert S. Marks, Leslie Lobel and Amadou Sall, Institut Pasteur de Dakar, Senegal

This book covers a spectrum of topics in the diagnostics and monitoring of viral ailments with an emphasis on the newer technologies in development such as optical fiber and electrochemical immunosensors, reverse genetics, luminescent molecular imprints of neutrophil biomarkers, and many others. The contributors include experts from the fields of epidemiology, biotechnology, virology, industry, technologists, and the clinics. The viruses range from influenza to the emerging Ebola virus. This text brings readers a composition of various aspects of the field while looking at the future after some introduction to the state of the art.

Pan Stanford
December 2015: 229 x 152: 500pp
Hb: 978-9-814-36443-0: £95.00
* For full contents and more information, visit: www.crcpress.com/9781466566064
Active Phytochemicals from Chinese Herbal Medicines
Anti-Cancer Activities and Mechanisms
Wing Shing Ho
This book analyzes the pharmacology of active phytochemicals derived from traditional Chinese herbs used for the management of cancer and other diseases. The book bridges the gap between western medicine and herbal medicines and provides useful information to medical doctors and scientists on how integrated medicines will work better towards cancer therapy.
CRC Press
Market: Biomedical Science
September 2015: 235 x 156: 178pp
Hb: 978-1-482-21986-9: £89.00
eBook: 978-1-482-21987-6
* For full contents and more information, visit: www.crcpress.com/9781482219869

Anti-Diabetes Mellitus Plants
Active Principles, Mechanisms of Action and Sustainable Utilization
Appian Subramoniam, Nagarjuna Ayurvedic Institute, Kalayanthani, Thodupuzha, Kerala State, India
Diabetes mellitus (DM) is affecting more than 7% of the world population; it is on the rise both in prevalence and severity. There is a demand for novel safe and effective medicines due to the limited efficacy and undesirable side effects of current conventional drugs. Plants have always been a very good source of new drugs. This book will be the first volume in a decade to provide current information on anti-DM higher plants including: important methods of in vivo and in vitro screening of plants; in-depth discussion of phytochemicals identified with anti-DM and related activities; and the known mechanism of actions of anti-DM molecules and active extracts.
CRC Press
Market: Healthcare
July 2016: 235 x 156: 320pp
Hb: 978-1-498-75324-1: £76.99
eBook: 978-1-498-75323-4
* For full contents and more information, visit: www.crcpress.com/9781498753234

Ayurvedic Pharmacopoeial Plant Drugs
Expanded Therapeutics
C. P. Khare, Society for New Age Herbs, New Delhi, India
This book is the first review of all therapeutic sections of 456 plant drugs in the first six volumes of the Ayurvedic Pharmacopoeia of India. It covers the chemical constituents, therapeutic uses, and doses of Ayurvedic plant drugs on the basis of contemporary scientific literature. Provides evidence-based information on the various aspects of the medicinal plants, such as their botanical identifications, phytochemical characteristics, and their pharmacological properties.
CRC Press
Market: Alternative & Complementary Medicine
November 2015: 254 x 178: 579pp
Hb: 978-1-466-58999-5: £121.00
eBook: 978-1-466-58998-8
* For full contents and more information, visit: www.crcpress.com/9781466589995

Biology, Physiology and Molecular Biology of Weeds
Mithila Jugulam
A comprehensive look at the current information on a wide variety of topics in the field of weed science including biology, physiology, genetics and use of genomic tools. The book provides not only weed genetics and genomics research but also weed management from an ecological perspective. Furthermore, the book also provides broad coverage of novel mechanisms of weed resistance to herbicides and includes next generation sequencing techniques and bioinformatics of herbicide resistant genes in weeds.
CRC Press
Market: Life Science
July 2016: 229 x 152: 304pp
Hb: 978-1-498-70973-6: £121.00
eBook: 978-1-498-70974-3
* For full contents and more information, visit: www.crcpress.com/9781498709736

Biological Control in Plant Protection
Neil Helyer, Nigel D. Cattlin and Kevin C. Brown
This full-color second edition of a bestseller helps readers anticipate and recognize specific problems of pest management and then resolve them using the natural enemies of pests—parasites, predators, and pathogens. The main sections of the book include profiles of pests, beneficial arthropods, and pathogens, describing species characteristics, lifecycle, crop/pest associations, and influences of growing practices. Updated throughout, the book contains more than 300 new photographs, new pests and beneficial organisms, and two new chapters: The practice and application of biological control, Biological control in perspective.
CRC Press
Market: Botany
April 2014: 254 x 178: 276pp
Hb: 978-1-840-76117-7: £79.99
eBook: 978-1-840-76001-1
* For full contents and more information, visit: www.crcpress.com/9781840761177

The Biology of Plant-Insect Interactions
A Compendium for the Plant Biotechnologist
Edited by Chandrakanth Emani
Overviews of biochemical, genetic, and molecular perspectives of plant-insect interactions with added emphasis on bioinformatic, genomic, and transcriptome analysis are comprehensively treated in this book. It presents the agro-ecological and evolutionary aspects of plant-insect interactions with an exclusive focus on the climate change effect on the resetting of plant-insect interactions. A valued resource for biologists, students, policymakers, and the general public, the book includes theoretical aspects as a base toward real-world applications of holistic integrated pest management in agro-ecosystems.
CRC Press
Market: Life Science
June 2016: 229 x 152: 304pp
Hb: 978-1-498-70973-6: £121.00
eBook: 978-1-498-70974-3
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Botanical Miracles
Chemistry of Plants That Changed the World

Raymond Cooper, The Hong Kong Polytechnic University and Jeffrey John Deakin, FRSC

As the shortcomings of purely synthetic approaches to biochemical discovery and development are becoming more apparent, interest persists in the intriguing chemistry of natural products as sources of inspiration for unusual new compounds. Uniquely, this book relates the application of extracts from plants to their influence upon history, civilization, and, ultimately, the development of modern marvels in medicinal compounds, nutrition products, beverages, perfumes, cosmetics and organic pigments. Moreover, this up-to-date scientific work provides a fascinating point of entry to the chemistry of important natural products explored through the key functional groups of organic chemistry.
CRC Press
Market: Chemistry
February 2016: 235 x 156: 252pp eBook: 978-1-466-57759-6: £89.00
* For full contents and more information, visit: www.crcpress.com/9781466577596

Botanicals
Methods and Techniques for Quality & Authenticity

Edited by Kurt Reynerston, Johnson & Johnson Consumer Products, Skillman, New Jersey, USA and Khalid Mahmood, Johnson & Johnson Consumer Products, Skillman, New Jersey, USA

The international trade in plants is growing steadily as the worldwide demand for natural and botanical raw materials increases. In order to build assurance into the sourcing of natural ingredients, R&D organizations must have valid scientific matrices to authenticate the quality of those ingredients, provide traceability, and minimize risk. An assemblage of insights from expert contributors, this book compiles a range of methods and techniques that can be used to assure the quality, authenticity, and traceability of botanical raw materials for dietary supplements, cosmetics, and natural products research.
CRC Press
Market: Chemistry
January 2015: 235 x 156: 332pp Hb: 978-1-466-59841-6: £89.00 eBook: 978-1-466-59842-3: £69.00
* For full contents and more information, visit: www.crcpress.com/9781466598416

Cannabis
A Complete Guide

Ernest Small, Agriculture and Agri-Food Canada, Ottawa, Ontario

Cannabis sativa is best known as the plant source of marijuana, the world’s most widely consumed illicit recreational drug. However, it is also extremely useful as a source of stem fiber, edible seed oil, and medicinal compounds, all of which are undergoing extraordinarily promising research, technological applications, and business investment. This book is a comprehensive reference reviewing, analyzing, and summarizing botanical, horticultural, genetic, ecological, chemical, medical, historical, sociological, legal and business considerations that are critical for the wise advancement and management of cannabis.
CRC Press
Market: Life Science
* For full contents and more information, visit: www.crcpress.com/9781482299755

Chamomile
Medicinal, Biochemical, and Agricultural Aspects

Moumita Das, Indira Gandhi National Open University, New Delhi, India

Series: Traditional Herbal Medicines for Modern Times

This book is a ready reference on German Chamomile (henceforth called Chamomile), a medicinal and aromatic plant of European origin, which is extensively used for its medicinal properties worldwide. The flowers of chamomile contain valuable blue coloured oil which is used in medicines. In addition, it is used in shampoos, soaps and cosmetics. The main themes of the book are taxonomy, pharmacology, genetics, biochemistry, breeding and cultivation. It will include the latest information on the medicinal, aromatic and cultivation aspects of Chamomile.
CRC Press
Market: Life Science
* For full contents and more information, visit: www.crcpress.com/9781466577602

Compendium of Bioenergy Plants
Switchgrass

Edited by Hong Luo, Clemson University, South Carolina, USA, Yanqi Wu, Oklahoma State University, Stillwater, OK, USA and Chittaranjan Kole, Allahabad Agricultural Institute, U.P., and Bidhan Chandra Agricultural University, Nadia, India

Series: Compendium Of Bioenergy Plants

This book contains the most comprehensive reviews on the latest development of switchgrass research including the agronomy of the plant, the use of endophytes and mycorrhizae for biomass production, genetics and breeding of bioenergy related traits, molecular genetics and molecular breeding, genomics, transgenics, processing, bioconversion, biosystem and chemical engineering, biomass production modeling, economics of switchgrass feedstock production etc. The book will be of interest and great value to the switchgrass research communities in both academia and industry and a handbook for agronomists, geneticists, breeders, molecular biologists, physiologists, biosystems engineers and chemical engineers.
CRC Press
Market: Alternative Fuel
* For full contents and more information, visit: www.crcpress.com/9781466596368

Connecting Indian Wisdom and Western Science
Plant Usage for Nutrition and Health

Edited by Luisella Verotta, Universita’ degli Studi di Milano, Italy, Maria Pia Macchi, Magia Verde Onlus, Pistoia, Italy and Padma Venkatasubramanian, The Institute of Trans-disciplinary Health Sciences and Technology, Bangalore, India

Series: Traditional Herbal Medicines for Modern Times

A truly integrated collection of research, this book compares Ayurvedic and Western conceptions of wellness, healthy lifestyle, and diet. Examining the phyto-pharmacological, phytochemical, clinical, ethnobotanical, socio-cultural, and biomedical approaches to plant- and herb-based healthy diets and wellness, it includes approximately 40 selected monographs on fruits, vegetables, spices, nuts, and seeds complete with Ayurvedic and traditional uses as nutritional ingredients. It offers evidence based on the scientific literature on chemical composition, nutritional properties, mechanisms of action and influences at the cellular level as well as extensive references for further study.
CRC Press
Market: Healthcare
* For full contents and more information, visit: www.crcpress.com/9781482299755
Dictionary of Flavonoids with CD-ROM

John Buckingham, Consultant Editor, Dictionary of Natural Products, London, UK and V. Ranjit N. Munasinghe, Greenford, UK

Research into flavonoids, a large and important group of natural products, and their effects on human health continues unabated. This single volume lists all known flavonoids (circa 13,000), detailing chemical structures, physical properties, biological source and a concise bibliography. Derived from the well-respected Dictionary of Natural Products, it is presented in a compact dictionary format, and is an invaluable reference source for all those working in this area. The book is accompanied by a CD-ROM fully searchable by chemical structure as well as by physical properties and chemical names.

CRC Press
Market: Plant Science
March 2015: 279 x 216: 1199pp
Hb: 978-1-4665-5434-4: £483.00

* For full contents and more information, visit: www.crcpress.com/9781466554344

Fundamentals of Molecular Mycology

Devarajan Thangadurai, Karnataka University, Dharwad, India, Jayabalan Sangeetha, Karnataka University, Dharwad, India and Muniswamy David, Karnataka University, Dharwad, India

The provides a complete overview of recent developments and applications in molecular mycology. It serves as a comprehensive guide for the identification of fungi and the application of fungal biomolecules in agriculture, food, environment, and pharmaceutical sectors by providing detailed information about application molecular markers and bioinformatics tools for mycology. Advances in molecular tools have created a new path for the mycological research and applications in different sectors. The book is an excellent source of information on molecular mycology tools and applications in various fields.

Apple Academic Press
Market: Plant Science
December 2015: 235 x 156: 240pp
Hb: 978-1-771-88253-8: £82.00
ebook: 978-1-771-88254-5* eBook: 978-1-482-28250-4

* For full contents and more information, visit: www.crcpress.com/9787171882538

Ethnobotany of India

Volume 1: Eastern Ghats and Deccan

T. Pulliah, Sri KrishnaDevaraya University, Andhra Pradesh, India, K. V. Krishnamurthy, Bharathidasan University, Tiruchirapalli, India and Bir Bahadur, Kakatiya University, Warangal, Telangana, India

The first of a five-volume set, this book provides an informative overview of human-plant interrelationships in this southern area of India. The volume looks at the ethnic diversity, ethnobotany, ethnomedicine, ethnoveterinary medicine, and ethnic food of the region. With chapters written by experts in the field, the book provides comprehensive information on the tribal (the indigenous populations of the region) and knowledge on plants that grow around them.

Apple Academic Press
Market: Botany
February 2016: 235 x 156: 475pp
Hb: 978-1-771-88338-2: £134.00
ebook: 978-1-771-88339-9* eBook: 978-1-482-24905-7

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Food as Medicine

Functional Food Plants of Africa

Maurice M. Iwu, Bioresources Development Group, Abuja, Nigeria, and Bioresources Development and Conservation Program, Maryland, USA

This comprehensive book documents African plants used for functional and medicinal foods. It contains more than 60 detailed monographs of African foods, describing foods with various characteristics such as prebiotic, probiotic, satiety, immune modulation, stress-reduction, sports performance, mental acuity, sleep-supporting, metabolic syndrome, antioxidant, and unsaturated fats. Plant description, botanical names and synonyms, plant part used, habitat and distribution, folk use, nutritional content, and chemistry are all fully detailed. The book highlights indigenous African food processing technologies up to the modern era.

CRC Press
Market: Food & Culinary Science
June 2016: 254 x 178: 500pp
Hb: 978-1-498-70609-4: £178.00
ebook: 978-1-498-70610-0* eBook: 978-1-498-70611-7

* For full contents and more information, visit: www.crcpress.com/9781498706094

Fungi From Different Substrates

Edited by J. K. Misra, SLM Bharti VidyabHAVans Girls Degree College, Lucknow, India, Jalpa P. Tewari, Sleep Centers of America, Akron, Ohio, USA, Sunil Kumar Deshmukh, Piramal Enterprises Limited, Mumbai, India and Csaba Vágvolgyi, University of Szeged, Hungary

The book is comprised of more than a dozen chapters on fungi from different substrates including fossilized leaves. It discuses association of fungi occurring on important plants, some animals, and saprophytic substrates. Besides the taxonomic information, some ecological aspects like distribution and substrate/host preferences are discussed. The book also reviews the myxomycete.

CRC Press
Market: Life Science
October 2014: 235 x 156: 486pp
Hb: 978-1-482-20960-0: £103.00
ebook: 978-1-482-20962-4* eBook: 978-1-482-20964-8

* For full contents and more information, visit: www.crcpress.com/9781482209600

2nd Edition - NEW EDITION

Fungi in Ecosystem Processes, Second Edition

John Dighton, Rutgers University Pinelands Field Station, New Lisbon, New Jersey, USA

Series: Mycology

This second edition continues the unique approach of viewing the role of fungi from the perspective of ecosystem functions. It examines the importance of fungi in soil formation, plant primary production, sustenance of secondary producers and regulation of plant and animal populations and communities. It explores how fungi have adapted to survive within particular constraints, how they help to maintain homeostasis in ecosystems, how they facilitate resistance to perturbations and how they influence the communities of other organisms.
**Fungi**

Applications and Management Strategies

Edited by Sunil K. Deshmukh, Piramal Enterprises Limited, Mumbai, India, J. K. Misra, SLM Bhartia Vidya Bhavan Girls Degree College, Lucknow, India, Jaipal P. Tewari, Sleep Centers of America, Akron, Ohio, USA and Tamas Papp, University of Szeged, Hungary

Series: Progress in Mycological Research

The book deals with the application of fungi and the strategic management of some plant pathogens. It covers fungal bioactive metabolites, with emphasis on those secondary metabolites that are produced by various endophytes, their pharmaceutical and agricultural uses, regulation of the metabolites, mycotoxins, nutritional value of mushrooms, prospecting of thermophilic and wood-rotting fungi, and fungi as mycenanufactories. Strategies for the management of some plant pathogenic fungi of rice and soybean have also been dealt with. Updated information for all these aspects has been presented and discussed in different chapters.

CRC Press

Market: Life Science

February 2016: 235 x 156: 420pp

Hb: 978-1-482-25412-9: £127.00

ebook: 978-1-482-25413-6

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**Genetics, Genomics and Breeding of Eucalypts**

Edited by Robert J. Henry

Series: Genetics, Genomics and Breeding of Crop Plants

Eucalypts are used for the production of paper products, firewood, charcoal, potential feedstocks for bioenergy and biomaterials, as ornamentals and landscape trees, and in land rehabilitation. Eucalypt breeding is at an early stage with many plantings being only at the first stages of domestication. The relatively small genomes of these species make the application of molecular genetics approaches attractive. The application of modern genomics will accelerate the development of improved eucalypts for a wide range of uses. This book brings together diverse information on the genetics, genomics, and breeding of these important forest species.

CRC Press

Market: Life Science

July 2014: 235 x 156: 206pp

Hb: 978-1-482-25413-6: £95.00

ebook: 978-1-482-25414-3

* For full contents and more information, visit: www.crcpress.com/9781482254129

**Genetics, Genomics and Breeding of Maize**

Edited by Ramakrishna Wusirika, Michigan Technological University, Houghton, USA, Martin Bohn, University of Illinois, Urbana, USA, Jinsheng Lai, China Agricultural University, Beijing and Chittaranjan Kole, Allahabad Agricultural Institute, U.P., and Bidhan Chandra Agricultural University, Nadia, India

Series: Genetics, Genomics and Breeding of Crop Plants

Sequencing of the maize genome has opened up new opportunities in maize breeding, genetics and genomics research. This book highlights modern trends in development of hybrids, analysis of genetic diversity, molecular breeding, comparative and functional genomics, epigenomics and proteomics in maize. The use of maize in biofuels, phytoremediation and pharmaceuticals is also highlighted. Current research trends, future research directions and challenges are discussed by a panel of experts from all over the world.

CRC Press

Market: Agriculture

August 2014: 235 x 156: 310pp

Hb: 978-1-482-22812-0: £103.00

ebook: 978-1-482-22813-7

* For full contents and more information, visit: www.crcpress.com/9781482228120

**Handbook of Cucurbits**

Growth, Cultural Practices, and Physiology

Edited by Mohammad Pessarakli, The University of Arizona, Tucson, USA

The plant family Cucurbitaceae, also known as “cucurbits,” consists of various squashes, melons, gourds, cucumbers, and pumpkins. This handbook contains information on cultural practices, nutrition, and physiological processes of cucurbits under both normal and stressful conditions. It presents the history and importance of cucurbits crop production as well as exhaustive information on growth responses of cucurbits to various environmental conditions and nutrients. Chapters cover the growth responses of cucurbits to numerous abiotic stresses and the beneficial effects of stress.

CRC Press

Market: Life Science

February 2016: 254 x 178: 586pp

Hb: 978-1-482-23459-6: £178.00

ebook: 978-1-482-23458-9

* For full contents and more information, visit: www.crcpress.com/9781482234589

**Genetics, Genomics and Breeding of Peanuts**

Edited by Nalin Mallikarjuna, International Crop Research Institute for Semi-Arid Tropics (ICRISAT), India and Rajeev K. Varshney, ICRISAT, Patancheru, India

Series: Genetics, Genomics and Breeding of Crop Plants

Peanut, an amphidiploid, is an important food and oil crop and has an interesting evolutionary history. This book provides a glimpse of the advances in genetic resources and genomics research of peanut made during the last decade. It contains an overview of germplasm, advances in genetic and genomic resources, genetic and trait mapping, proteomic and transcriptomic analyses, functional and comparative genomics studies, and molecular breeding applications. This book should prove useful to students, teachers, and young researchers as a ready reference to the latest information on peanut genetics and genomics.

CRC Press

Market: Life Sciences

May 2014: 235 x 156: 266pp

Hb: 978-1-482-23835-8: £95.99

ebook: 978-1-482-23837-2

* For full contents and more information, visit: www.crcpress.com/9781482238358

**Handbook of African Medicinal Plants, Second Edition**

Maurice M. Iwu, Bioresources Development Group, Abuja, Nigeria, and Bioresources Development and Conservation Program, Maryland, USA

A comprehensive review of over 2,000 species of plants employed in indigenous African medicine, this book provides a concise description of the materia medica of an enormous and extensively varied continent. It includes a detailed pharmacognostical profile of 170 of the major herbs, including the common name, synonyms, African names, habitat and distribution, medicinal uses, chemical constituents, and published pharmacologic activity. The profiles are presented in both alphabetic order and according to family. The book also provides an introduction to African traditional medicine.

CRC Press

Market: Complementary and Alternative Medicine

February 2014: 254 x 178: 510pp

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Science, Technology, and Applications, Second Edition
Edited by K. Husnu Can Baser, Anadolu University, Eskisehir, Turkey and Gerhard Buchbauer, University of Vienna, Austria
This book compiles information related to the development, use, and marketing of essential oils into one volume. It focuses particularly on the chemistry and biochemistry of essential oils, with contributions from a worldwide group of expert authorities on their historical, biological, regulatory, and microbial aspects. Covering a wide range of areas applicable to essential oils research and featuring enhanced and expanded information, this second edition provides you with a broad and authoritative knowledge base in the study and use of essential oils.

CRC Press
Market: Chemistry
October 2015: 254 x 178: 1121pp
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Prev. Ed Hb: 978-1-420-06315-8
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Handbook of Photosynthesis, Third Edition
Edited by Mohammad Pessarakli, The University of Arizona, Tucson, USA
Series: Books in Soils, Plants, and the Environment
This third edition of a bestseller continues to fill the need for an authoritative and exhaustive resource assembling a team of expert scientists from across the globe. This new edition is completely updated with 42 new chapters detailing all of the photosynthetic factors and processes under both normal and stressful conditions. Divided into 14 sections for ease of use, it features contributions from over 100 chapter authors. In addition to important background information, the third edition presents the most recent research findings.

CRC Press
Market: Life Science
March 2016: 279 x 216: 872pp
Hb: 978-1-482-23074-8: £146.00
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Prev. Ed Hb: 978-0-84-75839-4
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2nd Edition-Herbals & Plant Science

Handbook of Plant Nutrition, Second Edition
Edited by Allen V. Barker, University of Massachusetts, Amherst, USA and David J. Pilbeam, University of Leeds, UK
This new edition provides current information on the nutritional requirements of world crops. It presents research on the acquisition, accumulation, transport, and functions of chemical elements in plants. Chapters outline techniques for determining the status of each element in plants and soils, ranges of concentrations of each element in crops and soils, and the use of fertilizers for each nutrient. Each chapter includes proper diagnosis of the nutritional status of plants through assessments of plant appearance and composition. The new edition contains more in-depth coverage of methods in plant nutrition research and nutrient diagnosis.

CRC Press
Market: Agriculture
May 2015: 254 x 178: 773pp
Hb: 978-1-439-88197-2: £95.00
ebook: 978-1-439-88198-9
Prev. Ed Hb: 978-0-84-75804-9
* For full contents and more information, visit: www.crcpress.com/9781439881972

Handbook on the Morphology of Common Grasses
Identification and Characterization of Caryopses and Seedlings
Dhara Gandhi, The Maharaja Sayajirao University of Baroda, Vadodara, India, Susay Albert, The Maharaja Sayajirao University of Baroda, Vadodara, India and Neeta Pandya, The Maharaja Sayajirao University of Baroda, Vadodara, India
The grass family is one of the largest and most diverse families in the plant kingdom and is of great economic value. This handbook is a pictorial resource guide to the identification of different common grasses in their early growth stage. In this book, 100 of the most common grasses (palatable and unpalatable) growing in the grasslands have been characterized on the basis of the vegetative characters of the seedling. A key to the identification of the grasses at their seedling stages is provided to help easily identify the grasses at their early stage of development.

Apple Academic Press
Market: Botany
December 2015: 235 x 156: 298pp
Hb: 978-1-771-88249-1: £95.00
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Herbal Bioactives and Food Fortification
Extraction and Formulation
D. Suresh Kumar
Series: Nutraceuticals
This book provides information on all aspects of the extraction of biological actives from plants and the development of dietary supplements and fortified food using herbal extracts. It briefly surveys the use of herbs in different civilizations, describes various aspects of the extraction process including selection, quality control, and optimization of extraction. It also gives an overview of the formulation of various types of tablets, capsules, and syrups as well as the benefits of fortified foods and beverages.

CRC Press
Market: Food & Culinary Science
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Herbal Drugs as Therapeutic Agents
Amritpal Singh, Herbal Consultant, Mohali, India
Phytochemicals are the mainstay of therapeutics of herbal or botanical medicine. Research on phytomolecules is conducted worldwide and several have been screened for clinical trials, including promising anticancer agents withaferin-a and camptothecin. This book provides a scientific understanding of the mode of action of these molecules, targeting only those phytochemicals and herbal extracts that are subjects of recent pharmacological investigations. Chapters such as industrial crops for steroid manufacturing and anticancer potential of sanguinarine are unpalatable) growing in the grasslands have been characterized on the basis of the vegetative characters of the seedling. A key to the identification of the grasses at their seedling stages is provided to help easily identify the grasses at their early stage of development.

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Applications, Trends, and Prospects

Woon-Chien Teng, National University of Singapore, Ho Han Kiat, Rosarin Suwanarusk and Hwee-Ling Koh
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Malaria is a potentially life-threatening disease that affects millions worldwide, especially in Sub-Saharan Africa. The recent emergence and spread of multidrug resistance in parts of Southeast Asia prompts the urgent need for novel and effective therapy against the disease. Medicinal Plants and Malaria: Applications, Trends, and Prospects highlights the therapeutic potential of plants for treating malaria. It collates useful information on malaria, current prevention and treatment, and scientific research carried out.

CRC Press
Market: Life Science
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Microalgal Production for Biomass and High-Value Products
Edited by Stephen P. Slocombe and John R. Benemann
Microalgae are of particular interest as sources for biofuel because they do not compete with agriculture for resources. This book reviews the latest technologies of algal biomass production, including strain selection, algal culture, harvesting, and processing, as well as an economic analysis of algae biomass. The book also explores novel uses for biomass products and addresses other key issues, such as market and supply chain analysis, business strategies, legal issues, and future prospects in algae biomass research.

CRC Press
Market: Life Science
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Microbiology of the Everglades Ecosystem
Edited by James A. Entry, Nutrigrown, LLC, Elkridge, Maryland, USA, Andrew D. Gottlieb, Krish Jayachandran, Florida International University, Miami, USA and Andrew Ogram, University of Florida, Gainesville, USA
The first synthesis of current research regarding Everglades microbial community structure and function, this book provides an understanding of the physical and chemical factors affecting the structure of microbial communities, including nutrient effects, sea level rise, and other potential stressors. The book integrates traditional research on algal and bacterial structure and function, helping to provide a more holistic understanding of the varying microbial communities throughout the Everglades. From periphyton, to soils and detritus, to flocculent organic matter, the book covers new and emerging methods and their application.

CRC Press
Market: Environmental Science
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* For full contents and more information, visit: www.crcpress.com/9781498711838

Molecular Cell Biology of the Growth and Differentiation of Plant Cells
Edited by Ray J. Rose
This book encompasses cell division, cell expansion, and differentiation, which is the cellular basis of plant growth and development. The dynamics of cellular organelles are considered in the context of these processes. Advances in the visualization of organelles using molecular probes and confocal microscopy, along with molecular genetics, have provided a much clearer understanding of these basic cellular plant processes. Each chapter present a current and conceptual view of the cell cycle, cell expansion, or cell differentiation.

CRC Press
Market: Life Science
June 2016: 229 x 152: 352pp
Hb: 978-1-498-72602-3:
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* For full contents and more information, visit: www.crcpress.com/9781498726023

Natural Products Desk Reference
John Buckingham, Consultant Editor, Dictionary of Natural Products, London, UK, Caroline M. Cooper, London, UK and Rupert Purchase
Written by a group of experts affiliated with the prestigious Dictionary of Natural Products, this book provides a concise overview of the key structural types of natural products and their interrelationship. A structurally diverse group, ranging from simple aliphatic carbon chains to high molecular weight proteins, natural products can usually be classified into one or more groups. The text describes these major types, including flavonoids, carbohydrates, terpenoids, polypeptides, and lipids, and it illustrates them with accurate chemical structures, demonstrating the biosynthetic relationships between groups. The book also covers nomenclature, stereochemistry, and ring numbering.

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Market: Natural Products
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£82.00
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* For full contents and more information, visit: www.crcpress.com/9781439873618

Plant Image Analysis
Fundamentals and Applications
Edited by S Dutta Gupta and Yasuomi Ibaraki
This book covers recent developments in image analysis of higher plants at leaf, plant, and small canopy level. It introduces the basic concepts of image analysis and discusses various techniques in plant imaging, applications and future potentials. It covers imaging techniques that include RGB imaging, hyperspectral imaging, thermal imaging, multi-spectral fluorescence imaging, chlorophyll fluorescence imaging and BDS imaging. It then details their use in the assessment of plant growth and photosynthetic status, early detection of diseases and stress, cellular detection of reactive oxygen species, and plant phenotyping.

CRC Press
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**Plant Propagation Concepts and Laboratory Exercises, Second Edition**

Edited by Caula A. Beyl, Dean, College of Agricultural Sciences, University of Tennessee, Knoxville, USA and Robert N. Trigiano

This new edition integrates modern approaches for studying plant molecular biology and biotechnology into the framework of traditional plant propagation. It emphasizes the principles of plant propagation applied in both temperate and tropical environments. In addition to presenting the essential fundamentals, the book features protocols and practices that students will be able to apply in laboratory and field experiences.

This text helps readers choose the best methods for plant propagation including proper media and containers; describes techniques such as budding, cutting, layering, grafting, and cloning; and addresses various propagation challenges.

CRC Press
Market: Agricultural Science
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* For full contents and more information, visit: www.crcpress.com/9781466503878

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**Plants with Anti-Diabetes Mellitus Properties**

Appian Subramoniam, Nagarjuna Ayurvedic Institute, Kalayanthani, Thodupuzha, Kerala State, India

This book is the first in a decade to provide current information on plants that can be used to provide safe and effective medicines for the treatment of diabetes mellitus (DM). It includes a list of traditional medicinal plants suitable for possible use, important methods of in vivo and in vitro screening of plants, an in-depth discussion of phytochemicals identified with anti-DM and related activities as well as the known mechanism of actions of anti-DM molecules and active extracts.

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**Polyamines in Fungi**

Laura Valdés-Santiago, CINVESTAV Unidad Irapuato, Mexico and José Ruiz-Herrera

Series: Mycology

This book provides the first comprehensive account of the various aspects of polyamines in fungi as compared to other organisms. It covers all aspects of polyamine metabolism and the biological function of polyamines in stress and cell integrity.

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**Reproductive Biology of Plants**

Edited by Kishan Gopal Ramawat, M.L.Sukhadia University (retired professor), Udaipur, India, Jean-Michel Méritillon, University of Bordeaux, Villeneuve d’Ornon, France and K. R. Shivanna

Reproductive biology is the basis of species improvement and a thorough understanding of this is needed for plant improvement, whether by conventional or biotechnological methods. This book presents an up to date and comprehensive description of reproduction in lower plants, gymnosperms and higher plants. It covers general plant biology, pollination, pollen-pistil interaction, post-fertilization changes and seed dormancy.

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Market: Life Science
February 2014: 235 x 156: 390pp
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**Rhodiola rosea**

Edited by Alain Cuerrer, Montreal Botanical Garden, Quebec, Canada and Kwesi Ampong-Nyarko, Alberta Agriculture and Rural Development, Canada

Series: Traditional Herbal Medicines for Modern Times

Recent interest in the species *Rhodiola rosea* (rosenroot) in the West arose from the use of the rhizome as an adaptogen for the treatment of stress, but in the last few years, studies have confirmed other valuable medicinal properties. Written by well-known researchers, this volume examines important aspects of this increasingly important medicinal plant, including its botany, taxonomy, ethnobotany, classification, chemistry, phytochemistry, agronomy, and biotechnology. The contributors also describe experimentation with *R. rosea* in clinical practice for treating depression and anxiety disorders, to improve systemic functions, to augment cancer treatment, and in aerospace medicine.

CRC Press
Market: Biological Science
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**Safety Concerns for Herbal Drugs**

Divya Vohora and S. B. Vohora

It is widely believed and repeatedly stated that herbal drugs, being natural, are devoid of all toxic or adverse effects. This misconception often leads to the misuse of herbal drugs either independently or in combination with other drugs. This book embodies a survey of about 1500 medicinal plants and herbal products. It includes more than 100 examples of adverse side effects and drug interactions, a review of herbal drugs from 27 countries, and the effects of 75 commonly used Indian medicinal plants.

CRC Press
Market: Healthcare
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Sustainable Approaches to Controlling Plant Pathogenic Bacteria

Edited by V. Rajesh Kannan, Bharathidasan University, Tiruchirappalli, India and Kubilay Kurtulus Bastas

Plant diseases are a global problem and contribute to massive crop losses every year. The bacteria that cause these diseases can shorten the shelf life of food products and degrade the quality and nutritional value of food crops. To minimize or even reverse these effects, plant pathologists continue to develop innovative methods to control plant diseases. This book focuses on sustainable control measures for plant diseases caused by bacteria. Chapters explore pathogenic bacteria epidemiology, host range and resistance, nutrient supplementation, traditional control methods, and various application strategies.

Therapeutic Medicinal Plants

From Lab to the Market

Edited by Marta C.T. Duarte and Mahendra Rai, SGB Amravati University, Maharashtra, India

Medicinal plants have been used in the prevention, diagnosis, and elimination of diseases based on the practical experience of thousands of years. There is a pressing need to initiate and transform laboratory research into fruitful formulations leading to the development of new products for the cure of diseases such as AIDS, cancer, and hepatitis, as well as coping with multi-drug resistance problems. This book presents recent developments in the research on medicinal plants for different diseases, formulation of products, and market strategy.

Tree Biotechnology

Edited by Kishan Gopal Ramawat, M.L.Sukhadia University (retired professor), Udaipur, India, Jean-Michel Mérim lion, University of Bordeaux, Villenave d’Ornon, France and M. R. Ahuja, Zobel Forestry Associates, New Paltz, New York, USA

Forest trees cover 30% of the earth’s land surface, providing renewable fuel, wood, timber, shelter, fruits, leaves, bark, roots, and are source of medicinal products in addition to benefits such as carbon sequestration, water shed protection, and habitat for 1/3 of terrestrial species. However, the genetic analysis and breeding of trees has lagged behind that of crop plants. Therefore, systematic conservation, sustainable improvement and pragmatic utilization of trees are global priorities. This book provides comprehensive and up to date information about tree characterization, biological understanding, and improvement through biotechnological and molecular tools.
Antioxidants
Advances in Chemistry and Biology
Edited by Ana Paula Rocha Duarte, Instituto Superior Técnico, Lisboa, Portugal, Amelia Pilar Rauter, Universidade de Lisboa, Portugal and Joao Carlos Moura Bordado, Instituto de Materiais, Manutenção, Ambiente e Segurança
This volume provides a detailed description of the main types of antioxidants, their action mechanisms, extraction or production processes, most common characterization techniques, and their most promising applications. The book covers the fast growing area of polyphenols, including their general stability and pH sensitivity. Also covered are the effects of antioxidants in relation to cardiovascular health, which are being measured in terms of oxidative stress. As the current role of the antioxidants in the health, food, packaging, and chemical industries is high, an update of the most recent advances is timely.
CRC Press
Market: Chemistry
June 2016: 235 x 156: 250pp
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eBook: 978-1-482-22821-2: £121.00
* For full contents and more information, visit: www.crcpress.com/9781482228212

Cell Membrane Nanodomains
From Biochemistry to Nanoscopy
Edited by Alessandra Gambi, Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands and Diane S. Lidke, University of New Mexico, Albuquerque, USA
This book furthers the readers' understanding of the fundamental molecular mechanisms that govern nanostructures and protein function relationships at the cell membrane and explains the ins and outs of this rapidly developing high- or super-resolution microscopy field. Contributing writers include experts from the optical nanoscopy and microscopy fields, biophysicists, biochemists, and cell biologists. Since superresolution optical techniques helped advance the understanding of cellular structure and protein behavior, there is a special emphasis on technologies that are enabling the visualization of lipids, proteins, and other molecular components at unprecedented spatiotemporal resolution.
CRC Press
Market: Chemistry
October 2014: 235 x 156: 510pp
Hb: 978-1-482-20989-4: £111.00
eBook: 978-1-482-20991-4: £111.00
* For full contents and more information, visit: www.crcpress.com/9781482209891

Atomic Force Microscopy in Nanobiology
Edited by Kunio Takeyasu, Kyoto University, Japan
Edited by Dr. Takeyasu, with contributions from leading scientists in the field of nanobiology, this book provides an overview of modern atomic force microscopy (AFM) technologies. It covers basic AFM protocols, newly developed technologies, and recent applications of AFM technologies in biological sciences. There are many nanotechnology books that focus on materials, instruments, and applications in engineering and medicine, but only few of them are directed toward basic biological sciences. This book bridges that gap.
Pan Stanford
Market: Nanoscience and Nanotechnology
May 2014: 229 x 152: 419pp
Hb: 978-9-814-41158-5: £95.00
ebook: 987-9-814-41159-2: £95.00
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5th Edition · TEXTBOOK · NEW EDITION
Basic Pathology, Fifth Edition
Sunil R. Lakhani, University of Queensland, Brisbane, Australia, Caroline Finlayson, St George’s University of London, UK, Susan A. Dilly, Formerly Barts and The London, Queen Mary’s School of Medicine and Dentistry, London, UK and Mitesh Gandhi, Princess Alexandra Hospital, Woolloongabba, Brisbane, Australia
An accessible and enjoyable introduction to pathology and the mechanisms of disease, this book puts pathology into its historical, scientific and clinical context. Organized in four main themes - What is a Disease, Defense Against Disease, Circulatory Disorders and Disorders of Cell Growth - the text highlights key mechanisms and their interplay in producing symptoms, signs and disease. Supplemented throughout with colorful cartoons, and much-praised clinical scenarios, this entertaining look at pathology offers historical anecdotes and helpful key-points boxes.
CRC Press
Market: Pathology
May 2016: 246x189: 352pp
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Cancer Cell Signaling
Targeting Signaling Pathways Toward Therapeutic Approaches to Cancer
Edited by Kasirajan Ayyanathan, Florida Atlantic University, Boca Raton, USA
Cell signaling is a field that studies how cells communicate to control basic activities and respond to their environment. When looking specifically at cancer cells, researchers can gain a better understanding of cancer on a cellular level, an understanding that may have implications for developing new treatments. The current volume provides an overview of the field and how various cell biology techniques are used to better understand cancer on a cellular level. Edited by a researcher from Florida Atlantic University, this easily accessible reference volume offers a comprehensive look at the field of cancer cell signaling.
Apple Academic Press
Market: Life Sciences
June 2014: 229 x 152: 410pp
Hb: 978-1-771-88067-1: £95.00
ebook: 978-1-482-29945-8: £95.00
* For full contents and more information, visit: www.crcpress.com/9781771880671

Cell Therapy for Diseases of Skeletal Muscle
Edited by Martin K. Childers, University of Washington, Seattle, USA
Series: Gene and Cell Therapy
This book deals with new therapies that use cells such as stem cells to treat, retard, or even cure devastating muscle diseases such as Parkinson’s, Lou Gehrig’s disease (ALS), and muscular dystrophy. The text is divided into two parts. The first part contains chapters by contributors establishing basic aspects of cellular therapies, focusing mostly on muscle disorders. The second part deals with specific disorders, especially Duchenne Muscular Dystrophy. Together, these two parts provide insight into the rapidly changing field of available cellular therapies.
CRC Press
Market: Medicine
June 2016: 235 x 156: 250pp
Hb: 978-1-482-22788-8: £114.00
ebook: 978-1-482-22789-5: £114.00
* For full contents and more information, visit: www.crcpress.com/9781482227888
Cells, Forces, and the Microenvironment
Edited by Charles M. Cuerrier, University of Ottawa, Canada and Andrew E. Pelling, University of Ottawa, Canada
This book provides a broad overview of how mechanical forces and properties govern diverse aspects of physiological and pathological processes. It also covers new emerging techniques developed to study complex biosystems such as microfluidics, traction force microscopy, and the development of novel biomaterials for tissue engineering. Importantly, chapters in this book are not limited to applications in animal cell biology, but also cover important dimensions in other kingdoms such as plants and bacteria.

Cellular In Vitro Testing
Methods and Protocols
Edited by John Haycock, University of Sheffield, UK, Arti Ahluwalia, University of Pisa, Italy and J. Malcolm Wilkinson
Growing cells in 2D under static conditions has long been the gold standard of cell culture, despite this method not being representative of the complex in vivo environment. Focusing on new 3D in vitro methods now available to researchers, this book brings together examples of leading-edge work being conducted internationally for improving in vitro cell culture methods, in particular the use of systems for enabling cell culture under laminar flow and the use of 3D scaffolds for providing cells with a structure which replicates the function of the extracellular matrix and encouraging interactions more akin to an in vivo environment.

Cytochrome P450 2D6
Structure, Function, Regulation and Polymorphism
Shufeng Zhou
Three families of CYPs in the human cytochrome P450 (CYP) gene superfamily, known as CYP1, CYP2, and CYP3, account for more than 90% of the oxidative metabolism of clinical drugs. CYP2D6, although only 2-4% total hepatic CYP, metabolizes about 25% of all medications in the human liver. This book reviews what is currently known of the structure, function, regulation, and polymorphism of CYP2D6. It reviews the maturing body of evidence indicating that CYP2D6 should be of interest to clinicians, pharmacists, pharmaceutical scientists, and pharmacologists.

Extracellular Vesicles in Health and Disease
Edited by Paul Harrison, University of Birmingham Medical School, UK, Chris Gardiner and Ian L. Sargent
This book stems from the first international meeting on “Microvesicles and Nanovesicles in Health and Disease” held at Magdalen College, Oxford, in 2010. The purpose of the meeting was to bring together, for the first time, a range of experts from around the world to discuss the latest advances in this field. Key to the study of these vesicles is the availability of methodologies for their measurement in biological fluids. A major section of the meeting focused on a range of exciting new technologies which have been developed for this purpose.

4th Edition
Gene and Cell Therapy
Therapeutic Mechanisms and Strategies, Fourth Edition
Edited by Nancy Smyth Templeton
The fourth edition of this bestseller presents extensive background and basic information, state-of-the-art technologies, important achievements, and lingering challenges in the fields of gene and cell therapies. It continues to provide the most comprehensive coverage of these fields in one volume. Some chapters have expanded introductions, making the book even more suitable for classroom use. This edition also offers more material on the contributors’ research efforts as well as current technologies, disease targets, and clinical applications.

Glycobiology and Human Diseases
Edited by Herman Wiederschain, Boston-College, Chestnut Hill, Massachusetts, USA
This book discusses glycobiology and various forms of human diseases. Topics covered include immunoglobulins, inflammation and glycosylation, the role and therapeutic significance of natural anti-glycan antibodies in malignancies and in normal and aberrant pregnancy, identifying urinary glycans as a possible method for the diagnosis of lysosomal storage diseases, glycobiology of human milk (biological roles and diseases) and pectins as biological modulators of human physiological reactions. The book includes analysis of comprehensive data and some productive conclusions and perspectives.
Handbook of H+–ATPases
Edited by Suguru Nakamura
This handbook on vacuolar and plasma membrane H+–ATPases is the first to focus on an essential link between vacuolar H+-ATPase and the glycolysis metabolic pathway to understand the mechanism of diabetes and the metabolism of cancer cells. It presents recent findings on the structure and function of vacuolar H+-ATPase in glucose promoting assembly and signaling, in addition to describing the regulatory mechanisms of vacuolar H+-ATPase in yeast cells, neural stem cells, kidney cells, cancer cells, as well as under diabetic conditions.

Hormesis in Health and Disease
Edited by Suresh I. S. Rattan, Department of Molecular Biology and Genetics, Aarhus University, Denmark and Éric Le Bourg, Université Paul-Sabatier, Centre de recherche sur la cognition animale, UMR CNRS S169, Toulouse, France
Series: Oxidative Stress and Disease
There is now a large amount of data available for human beings, showing health beneficial hormetic effects of mild stresses from physical, chemical, nutritional, and mental sources. However, these data are dispersed in the literature and not always interpreted as hormetic effects, thus restricting their full apprehension and application. A comprehensive discussion of the research, this book is composed of four sections: (I) History and Terminology, (II) Evidence for Hormesis in Human Beings, (III) Molecular Mechanisms of Hormesis, and (IV) Hormesis in Risk Assessment.

How Enzymes Work
From Structure to Function
Edited by Haruo Suzuki, Kitasato University, Kanagawa-ken, Japan
This book starts with an introduction to various enzymes to show how interesting enzymes are. It is followed by historical kinetic studies on enzymes and the overall rapid-reaction kinetics. The subsequent topics describe the basics of protein structure, the control of enzyme activity, and the purification of enzymes. A case on the kinetic and structural studies of L-phenylalanine oxidase is also presented. There are many good books on enzyme kinetics, but only a few books describe their kinetic and structural aspects. This book deals with both and contains many references that can be good sources for further readings. The book is handy and is especially helpful for beginners.

Inside the Photon
A Journey to Health
Tony Fleming, Biophotonics Research Institute, Hightett, Australia and Elizabeth Bauer, Biophotonics Research Institute, Hightett, Australia
This book describes the newly discovered layer of biophotonics underlying all atomic chemistry and biochemicals. As with the variety of snowflakes, the range in biological species within flora for instance is dependent on this biophotonic layer of interaction within atomic and biomolecular structures. The book examines the photon, the quantum of acoustic, or vibrational, energy and alongside the photon. Hence the ‘biophoton’ sits aside the biophoton as an element within biological structures. Sounds can create structure in the same way biophotons can use structure to communicate.

Intracellular Cross Pathways Between Aging, Diseases and Age Estimation
Edited by Sara C. Zapico
This book covers the main intracellular causes of aging. From aspartic acid racemization to mitochondrial DNA mutations, this book reviews how these processes play a key role, not only on aging, but also in the development of aging-related and non-related diseases. Each chapter includes a new perspective — the determination of the age. Some of these aging processes are currently used by forensic scientists to estimate the age at death, giving a multidisciplinary and interdisciplinary approach to aging research.

Liposomes, Lipid Bilayers and Model Membranes
From Basic Research to Application
Edited by Georg Pabst, University of Graz, Austria, Norbert Kučerka, National Research Council of Canada, Chalk River, Mu-Ping Nieh, University of Connecticut, Storrs, USA and John Katsaras, Oak Ridge National Laboratory, Tennessee, USA
With contributions from leading researchers in their fields, this book describes state-of-the-art lipid/model membrane research, and industrial and medical applications, all in one volume. The book is divided into two sections. The first section covers a range of basic research topics, from theory and computational simulations to current experimental research. The second part describes applications of lipid systems used in the pharmaceutical, textile, and food industries. Covering basic and applied research, this book serves as a useful reference for both the novice and the expert.

Browse and order online:
www.crcpress.com
Liver Metabolism and Fatty Liver Disease
Edited by Oren Tirosh, Hebrew University of Jerusalem, Israel
Series: Oxidative Stress and Disease
About 30% of the general population suffers from Non-Alcoholic Fatty Liver Disease, and the incidence of more serious fatty liver disorders increases with obesity. This discusses the current understanding of development of liver disease and the clinical aspects of fatty liver disease by examining the current knowledge regarding the absorption, metabolism of fat in the liver. It summarizes the current knowledge regarding the involvement of oxidative stress, the metabolic effects inflammation, and the effect of nutrition in the disease development and progression.

Mitochondria in Liver Disease
Edited by Derick Han and Neil Kaplowitz, University of Southern California, Los Angeles, California,
Series: Oxidative Stress and Disease
This book presents the current state of knowledge and research on mitochondrial roles in liver diseases. Written by a group of global experts, it includes cutting-edge topics such as the regulation of mitochondrial respiration using hydrogen sulfide and the regulation of mitochondrial fusion-fission via the endoplasmic reticulum. It also addresses novel topics such as the importance of liver mitochondrial constituents as biomarkers of liver injury in plasma and as regulators of the immune system. An authoritative and comprehensive overview of current developments, it also marks key starting points for future research.

Mass Spectrometry-Based Metabolomics
A Practical Guide
Edited by Sastia Prama Putri, Osaka University, Suita, Japan and Eiichiro Fukusaki
This book is a simple, step-by-step reference for profiling metabolites in a target organism. It discusses optimization of sample preparation for urine, serum, blood, tissue, food, and plant and animal cell samples. The book summarizes all steps in metabolomics research, from experimental design to sample preparation, analytical procedures, and data analysis. Case studies are presented for easy understanding of the metabolomics workflow and its practical applications in different research fields. It includes an in-house library and built-in software so readers can analyze real data samples.

Mitochondrial Dynamics
Shaping Life and Death of the Cell
Edited by Quan Chen
Series: Oxidative Stress and Disease
Mitochondria are among the most important of eukaryotic cell organelles, often referred to as the "powerhouse" of the cell, because of the role they play in providing energy for cellular function. This book synthesizes what is known mitochondrial dynamics, including the fusion and fission of mitochondria, mitophagy (the destruction of damaged mitochondrial), and the role of mitochondrial dynamics in disease such as Parkinson's disease and diabetes—among other topics. The volume is designed to appeal to molecular biologists, cell physiologists and anyone interested in the role mitochondria play in cell physiological function.

Mechanobiology of the Endothelium
Edited by Helim Aranda-Espinoza, University of Maryland, Fischell Department of Bioengineering
The endothelium is an excellent example of where biology meets physics and engineering. It has to convert mechanical forces into chemical signals to maintain homeostasis and even more, the endothelium controls the immune response, drug delivery through the vasculature, and cancer metastasis. Basic understanding of these processes is starting to emerge and applications from drug delivery to imaging modalities are already using the knowledge so gained. This book reviews current knowledge in mechanobiology of the endothelium and its implications for the development of theranostic devices.

Molecular and Physiological Mechanisms of Muscle Contraction
Jean Emile Morel, Ecole Centrale de Paris & Universite Pierre et Marie Curie (Paris) - retired
Thoroughly researched using experimentation and re-examination of all previously published evidence, this book is a carefully crafted treatise and revision of previous conceptions of muscle contraction. It presents detailed descriptions of new, previously unpublished data and hybrids recent findings with the standard Huxley model. It demonstrates that traditional concepts cannot fully explain contraction and identifies flaws in the reasoning initially used to explain some results as well as alternative interpretations accounting for inconsistencies. It synthesizes past and recent findings into a new hybrid model of muscle contraction.
Motor Proteins and Molecular Motors
Anatoly B. Kolomeisky
This accessible book explores the mechanisms of cellular functioning associated with several specific enzymatic molecules called motor proteins. It presents established results, theoretical methods, and experimental observations related to biological motor proteins. The author uses fundamental physical-chemical concepts and methods to develop a systematic theoretical framework for understanding motor protein dynamics. He introduces the main ideas using simple arguments that avoid heavy mathematical derivations in favor of more intuitive physical understanding.

CRC Press
Market: Physics
April 2015: 235 x 156: 222pp
Hb: 978-1-482-22475-7: £57.99
ebook: 978-1-482-22476-4
* For full contents and more information, visit: www.crcpress.com/9781482224757

Neural Cell Biology
Edited by Cheng Wang, National Center for Toxicological Research, U.S. Food and Drug Administration, Jefferson, Arkansas and William Slikker, Jr., National Center for Toxicological Research, U.S. Food and Drug Administration, Jefferson, Arkansas
This book delineates how systems biology, pharmacogenomic, and behavioral approaches, as applied to neurodevelopmental toxicology, provide a structure to arrange information in a biological model. The text reviews and discusses approaches that can be used as effective tools to dissect mechanisms underlying pharmacological and toxicological phenomena associated with the exposure to drugs or environmental toxicants during development.

CRC Press
Market: Life Science
October 2016: 229 x 152: 520pp
Hb: 978-1-498-72600-9: £108.00
ebook: 978-1-498-72601-6
* For full contents and more information, visit: www.crcpress.com/9781498726009

Redox Proteins in Supercomplexes and Signalosomes
Edited by Ricardo O. Louro, Instituto de Tecnología Química e Biológica, António Xavier, Universidade Nova de Lisboa, Portugal and Irene Díaz-Moreno, Instituto de Biología Vegetal y Fotosíntesis, cicCartuja, Universidad de Sevilla - CSIC
This book is one of the first to explore the key role played by redox proteins and their interaction network in a wide range of essential cellular processes in all domains of life. The book explains how the mitochondrial respiratory chain is dynamically organized in supercomplexes even under physiological and biogenesis to shed light on the molecular mechanisms of pathological situations, including aging.

CRC Press
Market: Biophysics
November 2015: 254 x 178: 338pp
Hb: 978-1-482-25110-4: £95.00
ebook: 978-1-482-25111-1
* For full contents and more information, visit: www.crcpress.com/9781482251104

Protocols for Cytogenetic Mapping of Arthropod Genomes
Edited by Igor V. Sharakhov, Virginia Polytechnic and State University, Blacksburg, USA
This book is a collection of up-to-date, detailed protocols for physical chromosome mapping and their applications for studying genome organization and evolution in insects and related Arthropod species. There is a need for such a book to understand the results being produced by the i5K project, which is collecting whole-genome sequences for 5,000 insect and related arthropod species. These results are often collections of unassembled contigs and supercontigs. This book provides cytogeneticists with the necessary background and protocols to understand and assemble chromosome-based genome assemblies from such whole-genome sequence data.

CRC Press
Market: Biological Sciences
October 2014: 254 x 156: 526pp
Hb: 978-1-466-59815-7: £76.99
ebook: 978-1-466-59816-4
* For full contents and more information, visit: www.crcpress.com/9781466598157

Role of Oxidative Stress in Chronic Diseases
Edited by Isaias Dichi, University of Londrina, Brazil, José Wander Breoganó, University of Londrina, Brazil, Andреa Name Colado Simão, University of Londrina, Brazil and Rubens Cecchin
This book presents recent findings on the role of oxidative stress in chronic diseases. Understanding the mechanisms by which oxidative stress act on chronic diseases enables readers to comprehend the rationale which underlies intervention in such conditions. This book gives readers a broad view in relation to an important issue related to oxidative stress, that is, genetic polymorphism. It covers the role of oxidative stress in transmissible diseases as well as non-transmissible chronic diseases. It discusses three types of non-transmissible chronic diseases: oxidative stress in metabolic diseases, in autoimmune and neurodegenerative diseases, and in cancer and cachexia. Each chapter covers a different disorder and the efficacy of interventional procedures.

CRC Press
Market: Infectious Diseases
March 2014: 235 x 156: 700pp
Hb: 978-1-482-21681-3: £123.99
ebook: 978-1-482-21682-0
* For full contents and more information, visit: www.crcpress.com/9781482216813
Stem Cells and Neurodegenerative Diseases
Edited by Laurent Lescaudron, Nantes University County Hospital, France, Julien Rossignol, Central Michigan University, Mount Pleasant, USA and Gary L. Dunbar, Central Michigan University, Mount Pleasant, USA
This book explores the potential of stem cells for ameliorating the quality of life of patients with neurological and neurodegenerative diseases. It discusses results of pre-clinical investigations and case studies on the effects of stem cell transplantation on cell death, to promote/stimulate neuroprotection after brain and spinal cord injury through trophic support, cell replacement and remyelination. It covers the maintenance of the balance between stem cells and their progenitors within their niche, both under normal and degenerative processes, ischemic stroke, multiple sclerosis, and brain tumor.

Stem Cells: From Basic Research to Therapy, Volume 1
Basic Stem Cell Biology, Tissue Formation during Development, and Model Organisms
Edited by Federico Calegari, Dresden University of Technology, Germany and Claudia Waskow, Dresden University of Technology, Germany
Series: Stem Cells
This book reviews the current knowledge on stem cell science covering all its major topics form basic cell biology to legislation. Six sections in two volumes describe: Volume I: i) basic stem cell biology, ii) tissue formation during development, iii) model organisms; Volume II: i) tissue homeostasis and regeneration during adulthood, ii) applications in basic research, medicine and industry, finishing with iii) legislation and ethics; each consisting of self-sufficient and logically connected chapters contributed by worldwide prestigious scientists working on each given topic.

Stem Cells: From Basic Research to Therapy, Volume Two
Tissue Homeostasis and Regeneration during Adulthood, Applications, Legislation and Ethics
Edited by Federico Calegari, Dresden University of Technology, Germany and Claudia Waskow, Dresden University of Technology, Germany
Stem Cells reviews the current knowledge on stem cell science covering all its major topics, from basic cell biology to legislation. Volume II concentrates on mechanisms of stem cell regeneration in the adult organism with the aim to understand how lost tissue can be replaced during adulthood and aging. The second focus of this volume is on stem cell identification and manipulation, including applications in basic research, medicine and industry. Volume II closes with an outlook on generalized approaches to solve legislative and ethical challenges.
**Ants of Florida**

Identification and Natural History

Mark Deyrup, Archbold Biological Station, Venus, Florida, USA

Ants are familiar to every naturalist, ecologist, entomologist, and pest control operator. The identification of the 233 species of Florida ants is technically difficult, and information on Florida ants is dispersed among hundreds of technical journal articles. This book will use scientific drawings of ants for convenient identification. To most Florida biologists ants are currently the most inaccessible group of conspicuous and intrusive insects. This book solves the twin problems of ant identification and the extraordinary fragmentation of natural history information about Florida ants.

CRC Press

Market: Life Science

June 2016: 235 x 156: 400pp

Hb: 978-1-4987-5468-2: £44.99
ebook: 978-1-4987-5468-2

* For full contents and more information, visit: [www.crcpress.com/9781498754670](http://www.crcpress.com/9781498754670)

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**Forensic Entomology**

International Dimensions and Frontiers

Edited by Jeffery Keith Tomberlin, Texas A&M University, College Station, USA and M. Eric Benbow, Michigan State University, East Lansing, USA

The use of forensic entomology has become established as a global science. Recent efforts in the field bridge multiple disciplines including, but not limited to, microbiology, chemistry, genetics, and systematics as well as ecology and evolution. This book provides an inclusive summary of worldwide research on this body of knowledge that integrates aspects of a wide range of scientific realms. It first reviews the history of forensic entomology, its accomplishments, and future challenges in nations around the world. It then provides perspectives of other scientific disciplines that are shaping the questions being addressed in the field.

CRC Press

Market: Biological Sciences

March 2015: 254 x 178: 468pp

Hb: 978-1-4665-7241-6: £63.99
ebook: 978-1-4665-7241-6

* For full contents and more information, visit: [www.crcpress.com/9781466572409](http://www.crcpress.com/9781466572409)

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**Carrion Ecology, Evolution, and Their Applications**

Edited by M. Eric Benbow, Michigan State University, East Lansing, USA, Jeffery K. Tomberlin, Texas A&M University, College Station, USA and Aaron M. Tarone

In recent years, there have been major technological innovations allowing important microbial mechanisms and interactions with arthropods that drive carrion decomposition to be described. This book fills a historical information gap in the ecology of decomposing animal organic matter. It covers the molecular mechanistic foundations that provide the foundation for intra- and interspecific interactions related to population biology, community ecology, and how this manifests into habitat- and ecosystem-level importance.

CRC Press

Market: Life Science

August 2015: 254 x 178: 577pp

Hb: 978-1-4665-7546-2: £76.99
ebook: 978-1-4665-7547-9

* For full contents and more information, visit: [www.crcpress.com/9781466575462](http://www.crcpress.com/9781466575462)

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**Greenhouse Pest Management**

Raymond A. Cloyd, Kansas State University, Manhattan, USA

This is the first comprehensive book on the management of greenhouse arthropod (insect and mite) pests and the approaches for managing them in commercial greenhouse production systems. There has been a dramatic increase in the production of horticultural crops in greenhouses worldwide due to the sustainable agriculture movement. In color, the book covers the identification of pests, describes their biology and life cycle, and addresses the use of control agents.

CRC Press

Market: Entomology & Acarology

June 2016: 235 x 156: 208pp

Hb: 978-1-4822-2779-6: £49.99
ebook: 978-1-4822-2779-6

* For full contents and more information, visit: [www.crcpress.com/9781482227789](http://www.crcpress.com/9781482227789)

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**Edible Insects of the World**

Jun Mitsuhashi, Tokyo University of Agriculture, Japan (Retired professor)

The first book on entomophagy written in this manner, Edible Insects of the World is an enumeration of 2,141 species of edible insects. For the reader’s convenience, insect names are arranged much like a dictionary, first by taxonomic group and then by country. In addition to taxonomic and location information, entries contain applicable details about the history of entomophagy, collecting, cooking, and medicinal uses.

CRC Press

Market: Life Science

April 2016: 235 x 156: 275pp

Hb: 978-1-4987-5657-0: £108.00
ebook: 978-1-4987-5657-0

* For full contents and more information, visit: [www.crcpress.com/9781498756570](http://www.crcpress.com/9781498756570)

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**In Silico Bees**

Edited by James Devillers, CTIS, Rillieux La Pape, France

Bees are critically important for ecosystem function and biodiversity maintenance through their pollinating activity. This book provides a collection of computational methods to those primarily interested in the study of the ecology, ethology, and ecotoxicology of bees. It presents numerous case studies to enable readers to understand the appropriateness but also the limitations of models in theoretical and applied bee research.

CRC Press

Market: Entomology

January 2014: 235 x 156: 314pp

Hb: 978-1-4665-5178-7: £82.99
ebook: 978-1-4665-5178-7

* For full contents and more information, visit: [www.crcpress.com/9781466551787](http://www.crcpress.com/9781466551787)
2nd Edition

Insect Diets
Science and Technology, Second Edition

Allen Carson Cohen
The second edition of Insect Diets: Science and Technology continues to provide a current, integrated review of the field of insect diets, reaffirming and expanding upon the belief that the science of diet development and the technology of diet application in rearing programs require formal foundations and guidelines. The author argues for a data-driven approach in insect rearing programs and calls for academia and industry to make a new push toward statistical process control (SPC) in their approaches to rearing in general, using his own work with insects as a paradigm.

CRC Press
Market: Biological Sciences
June 2015: 254 x 178: 477pp
Hb: 978-1-466-59194-3: £76.99
ebook: 978-1-466-59195-0
Prev. Ed Hb: 978-0-849-31577-0

Insect Molecular Biology and Ecology

Edited by Klaus H. Hoffmann, University of Bayreuth, Germany
Insects have one of the widest distributions on the globe because they have adapted to extreme ranges of environments. This book presents current entomological research, where molecular tools help to advance traditional ecological studies. Chapters include insect–insect and insect–plant interactions, mechanisms of environmental adaption, and use of insect biotechnology in pest and vector control. The book may help to combine powerful methods in molecular biology with exciting issues in ecology in order to understand why insects become "masters of survival."

CRC Press
Market: Life Science
December 2014: 235 x 156: 428pp
Hb: 978-1-482-23188-9: £79.99
ebook: 978-1-482-23189-6

Rearing Animal and Plant Pathogen Vectors

Edited by Karl Maramorosch, Rutgers of Cook College, New Brunswick, New Jersey, USA and Farida Mahmood
This book provides an integrated description of methods used to rear vectors of human, higher animal, and plant pathogens in the laboratory. It deals with diverse subject areas, and contains descriptions of standard, as well as highly specialized, methods used by medical, veterinary, entomology, and plant pathology experts. The text brings together the standard breeding and manipulation methods developed in America, Europe, Asia, and Africa. It describes the cultivating, handling, sterile techniques, and cell culture as well as safety measures to prevent contamination and escape of insects, ticks, nematodes and fungal vectors.

CRC Press
Market: Lab Animal Science
April 2014: 235 x 156: 346pp
Hb: 978-1-466-59821-8: £103.00
ebook: 978-1-466-59822-5

3rd Edition - TEXTBOOK - NEW EDITION

Insect Physiology and Biochemistry, Third Edition

James L. Nation, Sr.
Following the tradition of its bestselling predecessors, this edition provides working scientists and students with an engaging and authoritative guide to the most current findings in the dynamic field of insect physiology. Expanded and updated, this third edition challenges conventional entomological wisdom with the latest research and analytical interpretations. Encouraging independent evaluation of the data and allowing for the extrapolation of major concepts across species, this indispensable text establishes a thorough understanding of the physiological and biochemical functions and adaptations that have made insects one of the most successful groups of living organisms on the planet.

CRC Press
Market: Life Science
July 2015: 254 x 178: 690pp
Hb: 978-1-482-24758-9: £44.99
ebook: 978-1-482-24759-6

2nd Edition - TEXTBOOK

The Toxicology and Biochemistry of Insecticides, Second Edition

Simon J. Yu, University of Florida, Gainesville, USA
Continuing as the sole book in more than two decades to address this multifaceted field, the second edition of this highly praised review on insecticide toxicology has been expanded and updated to present the latest information on insecticide classification, formulation, bioassay, mode of action, resistance, metabolism, selective toxicity, environmental fate, and regulatory legislation. Incorporating references for further reading, this valuable resource discusses newly developed insecticides, newly discovered modes of action, new labeling requirements, and more. It provides essential insecticide knowledge required for effective insect pest management.

CRC Press
Market: Environmental Science
November 2014: 254 x 178: 382pp
Hb: 978-1-482-21060-6: £44.99
ebook: 978-1-482-21061-3

For full contents and more information, visit: www.crcpress.com/9781466591943
www.crcpress.com/9781482231885
www.crcpress.com/9781482210606
Aging is an Adaptation
Theory, Strategy and Chronic Disease
Joshua Mitteldorf

Although books exist on the evolution of aging, this is the first book written from the perspective of again as an adaptive program. It offers an insight into the implications of research on aging genetics. The author proposes the Demographic Theory of Senescence, whereby aging has been affirmatively selected because it levels the death rate over time helping stabilize population dynamics and prevent extinctions.

CRC Press
Market: Life Science
April 2010: 235 x 156: 240pp
Hb: 978-1-420-02527-7: £64.99
ebook: 978-1-420-02528-4
* For full contents and more information, visit: www.crcpress.com/9781420025277

Applied Natural Science
Environmental Issues and Global Perspectives
Mark D. Goldfein, Saratov State University (SSU), Saratov, Russia and Alexey V. Ivanov, Saratov State Technical University, Saratov, Russia

Applied Natural Science: Environmental Issues and Global Perspectives provides the reader with a complete insight into the natural-scientific pattern of the world, covering the most important historical stages of the development of various areas of science, methods of natural-scientific research, general scientific and philosophical concepts, and the fundamental laws of nature. The book analyzes the main scientific trends and developments of modern natural science and also discusses important aspects of environmental protection.

Apple Academic Press
Market: Life Science
December 2015: 235 x 156: 350pp
Hb: 978-1-771-88272-9: £65.00
ebook: 978-1-771-88273-6
* For full contents and more information, visit: www.crcpress.com/9781771882729

TEXTBOOK
Astrobiology
An Evolutionary Approach
Edited by Vera M. Kolb, University of Wisconsin-Parkside, Kenosha, USA

This book provides a full course in astrobiology with an emphasis on abiogenesis and evolution. It presents astrobiology both as a developing science and as the science of the future. The book begins with an overview of astrobiology, the origin of elements, and the formation of the solar system, planets, and exoplanets. Other topics covered include prebiotic synthesis of biochemical compounds, transition from abiotic to biotic, microorganisms in space, the roles of silicon in life, encapsulation of organic materials in protocells, cold and dry limits of life, virolution, and more.

CRC Press
Market: Physics
August 2014: 254 x 178: 504pp
Hb: 978-1-466-58461-7: £79.99
ebook: 978-1-466-58462-4
* For full contents and more information, visit: www.crcpress.com/9781466584617

TEXTBOOK
Astrobiology
An Introduction
Alan Longstaff, Associate Lecturer in Astronomy and Earth Sciences, Open University, UK

This textbook provides a full introduction to astrobiology suitable for university students at all levels. Reflecting a multiscale approach, the text covers topics such as stellar evolution, cosmic chemistry, planet formation, habitable zones, terrestrial biochemistry, and exoplanetary systems. The book discusses the origin, evolution, distribution, and future of life in the universe in an accessible manner, sparing calculus, curly arrow chemistry, and modeling details. It contains problems and worked examples, and includes a solutions manual with qualifying course adoption.

CRC Press
Market: Physics
November 2014: 235 x 156: 466pp
Hb: 978-1-439-87576-6: £57.99
ebook: 978-1-498-72845-4
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Auteology
Organisms, Interactions and Environmental Dynamics
Gimme H. Walter, University of Queensland, Brisbane, Australia and Rob Hengeveld, Vrije Universiteit, Amsterdam, The Netherlands

This book spells out the theoretical structure, methodology and philosophy of the science of auteology. The auteological approach focuses on the interactions of individual organisms (and their species-specific adaptations) with the spatio-temporal dynamics of their environment as a basis for interpreting patterns of diversity and abundance in natural systems. This organism-based approach to ecological interpretation provides a strong alternative to more traditional approaches and relates mechanistically to the underlying disciplines of anatomy, physiology, and behavior. The book includes illustrations, specific examples, graphs, maps, and other diagrams.

CRC Press
Market: Ecology
April 2014: 235 x 156: 480pp
Hb: 978-1-482-21414-7: £103.00
ebook: 978-1-482-21415-4
* For full contents and more information, visit: www.crcpress.com/9781482214147

Baby Gorilla
Photographic and Descriptive Atlas of Skeleton, Muscles and Internal Organs
Rui Diogo, Howard University, Washington, District of Columbia, USA, Juan F. Pastor, Universidad de Valladolid, Spain, Adam Harstone-Rose, University of South Carolina, Columbia, USA and Magdalena N. Muchlinski, University of Kentucky, Lexington, USA

The first photographic and descriptive musculoskeletal atlas of a baby gorilla, this book details the comparative and phylogenetic context of the gross anatomy and evolutionary history of the soft tissue morphology of modern humans and one of their closest relatives. With detailed high-quality photographs of musculoskeletal structures, it provides an updated review of the anatomical variations within gorillas as well as an extensive list of the synonyms used in the literature to designate the structures discussed. It will be of interest to students, teachers, and researchers studying primatology, comparative anatomy, functional morphology, zoology, and physical anthropology.

CRC Press
Market: Life Science
August 2014: 254 x 178: 144pp
Hb: 978-1-482-23297-4: £79.99
ebook: 978-1-482-23298-1
* For full contents and more information, visit: www.crcpress.com/9781482232974
Beach-Spawning Fishes
Reproduction in an Endangered Ecosystem
Karen L.M. Martin, Pepperdine University, Malibu, California, USA
This book serves as a comprehensive guide to beach spawning, a charismatic animal behavior that is seen in a surprising number of teleost species. This unexpected form of reproduction provides a window into the ecology of coastal areas, the behaviors and physiology necessary for fish and their eggs to adapt to terrestrial conditions, and the threats and challenges for conservation and management. Beach spawning species include important forage fish such as the Capelin, exotic fisheries such as the Fugu Puffer, and the spectacular midnight runs of the California Grunion.

Biogeography and Evolution in New Zealand
Michael J. Heads, Buffalo Museum of Science, New York, USA
Series: CRC Biogeography Series
Biogeography is the study of the distribution of species and ecosystems in geographic space and through geological time. It is an integrative field of inquiry that unites concepts and information from ecology, evolutionary biology, and other biological sciences as well as geography and geology. This book provides the first in-depth treatment of the biogeography of New Zealand, a region that has been a place of long-enduring interest to ecologists, evolutionary scientists, geographers, geologists, and scientists in related disciplines.

Chemical Ecology
The Ecological Impacts of Marine Natural Products
Edited by Melany P. Puglisi-Weening, Ph.D., Mikel A. Becerro and Valerie Paul
During the past 20 years marine chemical ecology emerged as a respected field of study providing a better understanding of the role natural products play in organisms and their environments. Ample data in this book advocates the conservation of marine environments for future drug discovery efforts while sustaining the health of marine environments. Marine chemical ecology has expanded to include research in the areas of predator-prey interactions, marine microbial chemical ecology, and seasonal and geographical distribution of marine natural products.

Evolution by Natural Selection
Confidence, Evidence and the Gap
Michaelis Michael, The University of New South Wales, Australia
Series: Species and Systematics
At a time when selectionist explanations are being brought forward to explain an ever-widening range of phenomena, this book analyzes the explanatory structure of Darwin's theory of natural selection. It shows there are aspects of the theory that are not totally understood, creating problems in contemporary uses of the theory to explain the world. It takes a much-needed thoughtful look into the working parts of the theory of natural selection to provide better understanding of the theory and its role in contemporary science and life.
Flies, Phylogeny and Islands
Evolution and Diversity of Hawaiian Drosophilia
Patrick O’Grady, University of California, Berkeley, USA
Hawaiian Drosophila has become a well-known model system in modern biology. This book brings together all the historical information on Hawaiian Drosophilidae in a single reference with a useful summary of where Hawaiian Drosophila research resides and how work on this impressive radiation has molded the field of evolutionary biology. Rather than being presented in an encyclopedic fashion, this information is synthesized and placed in the context of broader areas of inquiry, including island biogeography, population genetics, and genomics.
CRC Press
Market: Life Science
June 2016: 235 x 156: 300pp
Hb: 978-1-482-23272-1: £89.00
ebook: 978-1-482-23273-8
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Molecular Evolution and Population Genetics for Marine Biologists
Yuri Kartavtsev
Research in modern experimental and theoretical population genetics has been strengthened by advances in molecular techniques for the analysis of genetic variability. The evolutionary relationships of organisms may be investigated by comparing DNA sequences. This book covers chapters on population genetics, DNA polymorphism, genetic homeostasis, and biochemical genetics, plus a chapter on phylogenetic tree construction. In addition, each chapter contains training materials with numerical examples.
CRC Press
Market: Life Science
August 2015: 235 x 156: 360pp
Hb: 978-1-482-22118-3: £63.99
ebook: 978-1-482-22119-0
* For full contents and more information, visit: www.crcpress.com/9781482221183

Handbook of Australasian Biogeography
Edited by Malte C. Ebach, University of New South Wales, School of Biological, Earth and Environmental Sciences, Australia
Series: CRC Biogeography Series
Written by leading biogeographers, based upon the dynamic studies over the last 30 years, this revision of Australasian biogeography covers terrestrial, freshwater, and marine organisms. A handbook, rather than a natural history, the volume is a unique resource that allows one to focus on a single taxa or area or analyses of certain types of data to provide a comprehensive review of our current knowledge of the systems and distribution of major plant and animal groups in Australasia.
CRC Press
September 2016: 235 x 156: 600pp
Hb: 978-1-482-23636-1: £57.99
ebook: 978-1-482-23637-8
* For full contents and more information, visit: www.crcpress.com/9781482236361

Morphodynamics
Adolf Seilacher, formerly of Geologisches Institut, Universität Tübingen, Germany and Alan D. Gishlick, Curatorial Affiliate, Peabody Museum of Natural History, Yale University New Haven, Connecticut, USA
Illustrated by numerous examples from across the biological spectrum, this book embodies the foundation of noted paleontologist Adolf Seilacher’s thinking on the study of morphodynamics. The book represents his unique approach of presenting paleontology from an ecological and constructional perspective, rather than a taxonomic one. It begins by discussing the basic principles—form, pattern formation, ecology and evolution, as well as the factors that override those processes. Next, it examines how morphodynamic principles are realized in different organisms, from single-celled protists to echinoderms.
CRC Press
Market: Life Science
November 2014: 254 x 178: 551pp
Hb: 978-1-482-22118-3: £63.99
ebook: 978-1-482-22119-0
* For full contents and more information, visit: www.crcpress.com/9781482221183

Knowledge Representation in Systematic Biology
Edited by Nico M. Franz, Arizona State University, Tempe, USA
Series: Species and Systematics
Novel and diverse logic-based applications are becoming more available to systematists. This book provides an updated, open-minded characterization of the “boundaries of logic” in systematics, including an accessible overview of several endeavors such as Knowledge Representation and Reasoning (KRR), Open Biological and Biomedical Ontologies (OBIO), and others. Chapters by leading contributors range from easy-to-read introductions, reviews and empirical studies to engaging position papers that aim to clarify the most fruitful ways forward for the logic and systematics.
CRC Press
Market: Life Science
May 2016: 235 x 156: 400pp
Hb: 978-1-498-72523-1: £114.00
ebook: 978-1-498-72525-5
* For full contents and more information, visit: www.crcpress.com/9781498725231

Natural Selection
Methods and Applications
Mario A. Fares, University of Dublin, Ireland
A number of mathematical models and methods have been designed to identify the fingerprints of natural selection on genes and genomes. This book summarizes the knowledge in the field of methods to identify signatures of natural selection. The book presents the methods in a simple and direct way so that students of different disciplines can navigate through molecular fitness landscapes with only basic knowledge of bioinformatics. The book explores different levels of complexity, from nucleotides to proteins and molecular networks.
CRC Press
Market: Life Science
November 2014: 235 x 156: 274pp
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Networks in Society
Links and Language
Edited by Robert Stocker and Terry Borsomaier, Charles Sturt University, Bathurst, Australia
This book covers technical fundamentals, complexity and social networks, and communication and language. It raises readers' interest in social networks, the importance of language in the emergence and maintenance of networks, the integral patterns of interconnectivity, and the means to measure and model social structure. It presents a broad range of ideas from several fields of research endeavor. It also explores social networks and their integration with communication and language, thereby providing a discussion of relevant theory, modeling, metrics, and application to business, natural resource management, and technology.

Trophic Ecology
James E. Garvey, Southern Illinois University, Carbondale, Illinois, USA and Matt Whiles
This is a review of trophic concepts in ecology for organismal-oriented ecologists interested in ecosystem ecology. The book explains a wide range of topics including autotrophy, heterotrophy, omnivory, decomposition, foraging behavior and theory, trophic cascades, booneergetics, and production. The book is intended for upper-level undergraduate students and entry-level graduate students interested in autecological, organismal approaches to ecology, community and ecosystem ecology. It is also a reference text for instructors teaching upper-division courses, providing examples from the literature, quantitative approaches to teach, and new hypotheses yet to be fully tested by ecologists.
CRC Press
Market: Environmental Science
June 2016: 235 x 156: 320pp
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Reproductive Biology and Phylogeny of Lizards and Tuatara
Edited by Justin L. Rheubert, University of Findlay, Ohio, USA, Dustin S. Siegel, Southeast Missouri State University, Cape Girardeau, USA and Stanley E. Trauth Series: Reproductive Biology and Phylogeny
This book serves as a thorough review of reproductive biology and phylogeny of lizards and tuatara, a distant relative of lizards. The book is edited by an experienced team with over 400 publications and covers topics including, but not limited to, chemical communication, reproductive anatomy, reproductive cycles, molecular systematics, parental care, and mate choice. This review is a collective piece with authoritative authors from around the globe including the United States, South Africa, Australia, New Zealand, South America, and Mexico.
CRC Press
Market: Life Science
December 2014: 235 x 156: 760pp
Hb: 978-1-466-57986-6: £123.99
ebook: 978-1-466-57987-3
* For full contents and more information, visit: www.crcpress.com/9781466579866

Snakes of the World
A Catalogue of Living and Extinct Species
Van Wallach, Cambridge, Massachusetts, USA, Kenneth L. Williams, Natchitoches, Louisiana, USA and Jeff Boundy, Louisiana Department of Wildlife & Fisheries, Baton Rouge, USA
This book is the first to catalogue all living snakes and fossil ophidiids. It supplies a scientific, academic, and professional treatment of snakes—appealing to conservationists and herpetologists as well as zoologists, naturalists, hobbyists, researchers, and teachers. The text includes 651 valid genera and nearly 3,800 valid species. The inclusion of synonyms, dubious names, and invalid names totals some 12,500 primary snake names.
CRC Press
Market: Zoology
April 2014: 279 x 216: 1237pp
Hb: 978-1-482-20847-6: £119.00
ebook: 978-1-482-20848-1
* For full contents and more information, visit: www.crcpress.com/9781482208474

Understanding Human Anatomy and Pathology
An Evolutionary and Developmental Guide for Medical Students
Rui Diogo, Howard University, Washington, District of Columbia, USA, Drew M. Noden, Cornell University, College of Veterinary Medicine, Ithaca, New York, USA, Christopher M. Smith, Howard University, Washington, District of Columbia, USA, Julia Molnar, Johns Hopkins University, Washington, District of Columbia, USA, Julia C. Boughner, Claudia Alexandra Amorim Barros and Joana Araujo Bruno
Inspired by a NESCent workshop, this book is based on the authors’ work and synthesis of the literature. It has three goals: 1) demonstrate the usefulness of evolution; 2) help students to understand topology, function and variation in gross anatomy; and 3) decrease the gap between medical and evolutionary biology education. This approach to medical instruction and clinical practice promises to positively impact medicine. Evolutionary theory is not a part of medical curriculum today, causing a gap between what students learn about gross anatomy and what they understand about disease and therapy. This book fills this gap.
CRC Press
Market: Medicine
May 2016: 254 x 178: 326pp
Pb: 978-1-498-75384-5: £44.99
ebook: 978-1-498-75385-2
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Using the Biological Literature
Diane Schmidt. University of Illinois, Urbana, USA
The new edition of the highly praised book, Using the Biological Literature: A Practical Guide, is an annotated guide to selected resources in the biological sciences, presenting a wide-ranging list of important sources. This completely revised edition contains numerous new resources and descriptions of all entries including textbooks. It covers both print and electronic resources including monographs, journals, databases, indexes and abstracting tools, websites, and associations. It provides users with listings of authoritative informational resources of both classical and recently published works.
CRC Press
Market: Business & Management
April 2014: 235 x 156: 412pp
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What are Species?

Brent D. Mishler

Series: Species and Systematics

This book is an extended argument for abandoning the various single concepts and the "species" rank. The author proposes that the rank of "species" be replaced by a pluralistic view. In such taxonomy, the smallest identifiable lineages would be used within various divergent phylogenies in a context dependent manner. In such a view, "species" represents different sorts of things depending on the organism/lineage being considered. In practice, this is what is already done although it is not formally recognized.

CRC Press
Market: Life Science
June 2016: 235 x 156: 400pp
Hb: 978-1-498-71454-9: £89.00
ebook: 978-1-498-71455-6

*For full contents and more information, visit: www.crcpress.com/9781498714549
Applying Pharmacogenomics in Therapeutics
Edited by Xiaodong Feng, California Northstate University College of Pharmacy and Hong-Guang Xie
The implementation of pharmacogenomics in therapeutics offers the potential for clinicians and researchers to better predict the differences in drug response, resistance, efficacy, and toxicity and to optimize the treatment regimens based on these differences. With a focus on therapeutics based on the latest clinical evidence and guidelines, this book demonstrates how to apply the principles of pharmacogenomics in patient care. Patient case profiles elucidate the principles of pharmacogenomic biotechnology and testing and explain the concept of personal pharmacology. The book includes study questions and a summary of key points for each chapter.

Genomics and Proteomics
Principles, Technologies, and Applications
Edited by Devaraj Thangadurai, Karnataka University, Dharwad, India and Jeyabalan Sangeetha, Karnataka University, Dharwad, India
The book provides scope and knowledge on advanced techniques and its applications into the modern fields of biotechnology—genomics and proteomics. In this book, different genomics and proteomics technologies and principles are examined. The fundamental knowledge presented opens up an entirely new way of approaching DNA chip technology, DNA array assembly, gene expression analysis, assessing changes in genomic DNA, structure-based functional genomics, protein networks, and so on. The book will be valuable for biotechnology researchers and bioinformatics professionals and students in all fields of biotechnology.

Nutrition and Epigenetics
Edited by Emily Ho, Oregon State University, Corvallis, USA and Frederick Domann, University of Iowa, Iowa City, USA
Series: Oxidative Stress and Disease
An essential resource for scientists and researchers of nutrition, aging, and metabolic diseases, this book highlights the interactions among nutrients, epigenetics, and health. It presents new information on the action of diet and nutritional determinants in regulating the epigenetic control of gene expression in health and disease. Each chapter gives a unique perspective on a different nutritional or dietary component or group of components, and reveals novel mechanisms by which dietary factors modulate the epigenome and affect development processes, chronic disease, and the aging process.

Omics in Clinical Practice
Genomics, Pharmacogenomics, Proteomics, and Transcriptomics in Clinical Research
Edited by Yu Liu, University of Wisconsin-Madison, USA
This book serves as an introduction to genomics, proteomics, and transcriptomics, putting these fields in relation to human disease and ailments. The various chapters consider the role of translation and personalized medicine, as well as pathogen detection, evolution, and infection, in relation to genomics, proteomics, and transcriptomics. The topic of companion diagnostics is also covered.

Phenomics
Edited by John M. Hancock, Cambridge University, UK
Phenomics is the new discipline of using standardized measurement techniques to characterize the phenotypic effects of random or systematic genome modifications (for example randomly generated mutations or systematic gene knockouts). This approach is now being used in an increasing range of species and systems. In this book, experts working in phenomics in most of the major species and systems that are currently being studied present overviews of the field from their different, but overlapping perspectives.

Placenta
The Tree of Life
Edited by Ornella Parolini
Series: Gene and Cell Therapy
The placenta is a source of non-embryonic (i.e. not from the embryo or fetus) stem cells that can be used for research and potentially for a variety of therapies. Stem cells can be harvested following birth, thus avoiding some of the ethical/moral concerns. This book is devoted to the therapeutic and research potential uses for stem cells. It also provides a review of the development, structure and function of the placenta and its hybrid (mother plus fetus) or chimaeric nature.

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Specific Gene Expression and Epigenetics
The Interplay Between the Genome and Its Environment

Edited by Kasirajan Ayyanathan, Florida Atlantic University, Boca Raton, USA

This new volume on gene expression and epigenetics discusses environmental effects related to specific gene expression. The book also shows methods for bioinformatic analysis of the epigenome. The book is divided into two sections: the first looks at eukaryotic DNA methylation and the second addresses how to integrate genomic medicine into clinical practice.

Apple Academic Press
Market: Life Sciences
March 2014: 229 x 152: 328pp
Hb: 978-1-771-88036-7: £89.00
ebook: 978-1-482-25385-6
*For full contents and more information, visit: www.crcpress.com/9781771880367

Techniques in Genetic Engineering

Isil Aksan Kurnaz, Gebze Technical University, Dept. of Molecular Biology and Genetics (AyaanLab), Gebze- Kocaeli, Turkey

Designed as a textbook for undergraduates studying in the fields of molecular biology, biotechnology or bioengineering, the book presents not only the theoretical background of molecular techniques, but also provide case study examples, with some sample solutions provided. The book covers basic molecular cloning procedures, genetic modification of cells, including stem cells, as well as multicellular organisms, using problem-based case study examples.

CRC Press
Market: Life Science
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Animal Models in Toxicology, Third Edition

Edited by Shayne C. Gad and Shayne C. Gad, Gad Consulting Services, Cary, North Carolina, USA

This book is a single-source reference for the use of animal models in toxicology. It includes five new chapters covering guidance on the humane, efficient, and effective performance of necropsies for laboratory animals as well as available new technologies for laboratory animal research—imaging technologies, use of telemetry in animal studies, transgenic animal models, and immunology endpoint for assessment. The book concludes with an overview of the increasingly complex laws and regulations that govern how laboratory animals are obtained, maintained, and utilized. A helpful appendix provides a quick guide to commercial sources of laboratory animals.

CRC Press
July 2015: 254 x 178: 1152pp
Hb: 978-1-466-55428-3: £114.00
ebook: 978-1-466-55429-0
* For full contents and more information, visit: www.crcpress.com/9781466554283

Gnotobiotic Mouse Technology
An Illustrated Guide

Chris J. Vowles, University of Michigan Medical School, Ann Arbor, USA; Natalie E. Anderson and Kathryn A. Eaton, University of Michigan, Ann Arbor, USA

The popularity of germ-free animal models, particularly mice, for investigation of human physiology and disease has recently exploded. This book provides the first manual for the maintenance, husbandry, and experimental manipulation of germ-free and gnotobiotic mice. It includes information on all aspects of establishing and operating a germ-free mouse research facility, from basic principles and equipment to detailed instructions for assembling and maintaining isolators, sterilizing supplies, handling animals, monitoring sterility, and managing personnel and records.

CRC Press
Market: Life Science
October 2015: 235 x 156: 237pp
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ebook: 978-1-498-73633-6
* For full contents and more information, visit: www.crcpress.com/9781498736329

2nd Edition

The Care and Feeding of an IACUC
The Organization and Management of an Institutional Animal Care and Use Committee, Second Edition

Edited by Whitney Kayla Petrie, University of California, Davis, USA and Sonja Lea Wallace, Stanford University, California, USA

Maintaining its user-friendly approach, this new edition of a bestseller summarizes information necessary for the effective and efficient operation of an IACUC. The book covers training programs and discusses professional certifications for IACUC administrative and animal care staff. It provides pointers to principal investigators, discusses interactions between IACUCs and other compliance panels, and addresses occupational health and safety programs and the role they play in the overall animal care and use program. It also delves deeply into bioethics to explore how IACUCs can ensure that each proposal to use animals in research includes an ethical review.

CRC Press
Market: Life Science
March 2015: 235 x 156: 390pp
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Erythrocytes of the Rhesus and Cynomolgus Monkeys

Chester A. Glomski, ALESSANDRA PICA, University of Naples Federico II, Department of Biological Sciences, Section of Evolutionary and Comparative Biology, Naples, Italy and JESSICA F. GREENE

This book addresses the morphologic, quantitative, and generative aspects of the erythrocytes of the rhesus monkey (Macaca mulatta) and the cynomolgus monkey (Macaca fascicularis) (long-tailed macaque, crab-eating monkey). These two species are the most commonly selected nonhuman primates for basic science and clinical medical investigations. Topics include erythropoietic profiles, the role of stress as it is perceived by the monkey, and how it impacts erythropoietic values, and the training of the monkey to be a cooperative, unperturbed subject for hematologic study.

CRC Press
Market: Life Science
January 2016: 235 x 156: 254pp
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* For full contents and more information, visit: www.crcpress.com/9781498733595

The IACUC Administrator’s Guide to Animal Program Management

William G. Greer, Pennsylvania State University, University Park, USA and Ron E. Banks, Duke University, Durham, North Carolina, USA

This book discusses effective, humane animal use program management. It offers practical advice on how to work with current regulations by providing best practices and guidance on how to design a program of animal care and use that fits within the context of federal policies and regulations. The authors also document proven and successful strategies for managing the IACUC, which will assist all administrators and institutions with the development and enhancement of animal care and use programs.

CRC Press
Market: Lab Animal Science
January 2016: 235 x 156: 294pp
Hb: 978-1-439-84905-7: £69.99
ebook: 978-1-439-84908-8
* For full contents and more information, visit: www.crcpress.com/9781439849057
The Laboratory Bird

Douglas K Taylor, Vanessa K Lee and Karen R Strait

Series: Laboratory Animal Pocket Reference

A new addition to the acclaimed Laboratory Animal Pocket Reference series, this book is the first publication dedicated to the care and use of avian species in the biomedical research setting. It provides a valuable quick reference for animal care and veterinary technicians, laboratory animal veterinarians, trainees in laboratory animal medicine, and research staff members, as well as individuals involved in laboratory work who lack experience in working with birds.

CRC Press
Market: Lab Animal Science
December 2015: 235 x 156: 161pp
Pb: 978-1-466-59362-6: £38.99
ebook: 978-1-466-59363-3
* For full contents and more information, visit: www.crcpress.com/9781466593626

Non-Clinical Vascular Infusion Technology, Two Volume Set

Science and Techniques

Edited by Owen P. Green, LeVerts Ltd., Peterborough, UK and Guy Healing, AstraZeneca, Cheshire, UK

This two-volume set offers a detailed resource on vascular infusion technology. Volume I: The Science and Volume II: The Techniques. The first volume covers the scientific principles behind the delivery systems, from physical and physiological standpoints. The second volume presents a current account of the techniques involved in all the major laboratory animal species for conducting successful vascular infusion studies, including step-by-step instructions for a variety of techniques and equipment. This set provides a foundation of knowledge on infusion technology and its importance for safe clinical use of substances via this route of delivery.

CRC Press
Market: Lab Animal Science
January 2014: 235 x 156: 520pp
Hb: 978-1-439-87440-0: £127.00
ebook: 978-1-439-87441-7
* For full contents and more information, visit: www.crcpress.com/9781439874400

Molecular Detection of Animal Viral Pathogens

Edited by Dongyou Liu, Royal College of Pathologists of Australasia, St. Leonards, New South Wales, Australia

This volume, which contains the contributions of specialists in respective viral pathogen research, summarizes current diagnostic approaches for major animal viral pathogens with a special emphasis on molecular techniques. Each chapter includes a brief review on the classification, epidemiology, clinical features and diagnosis of animal viral pathogens, an outline of sample collection and preparation procedures, a selection of representative stepwise molecular detection protocols and a discussion on further research relating to improved diagnosis.

CRC Press
May 2016: 279 x 216: 94pp
Hb: 978-1-498-70036-8: £204.00
ebook: 978-1-498-70037-5
* For full contents and more information, visit: www.crcpress.com/9781498700368

Pathology of the Developing Mouse

A Systematic Approach

Edited by Brad Bolon, The Ohio State University, College of Veterinary Medicine, and Comprehensive Cancer Center, Columbus, USA

This book is the first publication to provide comprehensive guidance regarding the identification, characterization, and interpretation of mouse developmental defects. It emphasizes the interpretation of abnormal phenotypes and provides detailed protocols for appropriately processing mouse embryos, fetuses, neonates, juveniles, and placentas. A complete reference on the design, analysis, and interpretation of abnormal findings, the book is enhanced with numerous full-color illustrations, enabling readers to comprehend both normal development and the major categories of defects that may be seen in malformed developing mice (and placentas) of all ages. The extensive literature citations provide a starting point for additional reading to begin building true expertise in the field.

CRC Press
Market: Lab Animal Science
April 2015: 254 x 178: 466pp
Hb: 978-1-420-07008-8: £76.99
ebook: 978-1-420-07009-5
* For full contents and more information, visit: www.crcpress.com/9781420070088

Swine in the Laboratory

Surgery, Anesthesia, Imaging, and Experimental Techniques, Third Edition

Edited by M. Michael Swindle, Medical University of South Carolina, Charleston, USA and Alisson C. Smith, Medical University of South Carolina, Charleston, USA

Extensively updated and expanded, this new edition is the most authoritative source of scientific and technical information on the use of domestic and miniature swine in research. It includes new chapters on toxicology, transgenics, cancer, and necropsy, as well as detailed discussions on anesthesia, analgesia, and perioperative care that present the best current practices for using swine in experimental surgery. Providing a deepened reference of the most current information and best techniques, this book is a vital tool in conducting the best possible research using porcine models.

CRC Press
Market: Lab Animal Science
October 2015: 254 x 178: 599pp
Hb: 978-1-466-55347-7: £99.00
ebook: 978-1-466-55352-1
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3rd Edition

The IACUC Handbook, Third Edition

Edited by Jerald Silverman, University of Massachusetts Medical School, Worcester, USA, Mark A. Suckow and Sreekant Murthy, Rowan University, Glassboro, New Jersey, USA

As biomedical research continues to grow, the role and impact of the Institutional Animal Care and Use Committee (IACUC) has increased in scope and complexity. The IACUC Handbook has become “the Bible” for individuals when the time comes for them to serve on their institutions’ IACUC. It provides a foundation for understanding and implementing the many and varied responsibilities of this committee. This third edition comprehensively addresses the significant changes in the pertinent regulatory environment and interpretation of applicable federal laws, regulations, and policies.

CRC Press
Market: Lab Animal Science
May 2014: 254 x 178: 827pp
Hb: 978-1-466-55564-8: £57.99
eBook: 978-1-498-70371-0
* For full contents and more information, visit: www.crcpress.com/9781466555648
**Algae**

**Anatomy, Biochemistry, and Biotechnology, Second Edition**

Laura Barsanti, Istituto di Biofisica, Pisa, Italy and Paolo Gualtieri, Istituto di Biofisica, Pisa, Italy

A single-source reference on the biology of algae, this new edition examines the most important taxa and structures for freshwater, marine, and terrestrial forms of algae. Its comprehensive coverage goes from algae’s historical role through its taxonomy and ecology to its natural product possibilities. The book’s unifying theme is on the important role of algae in the earth’s self-regulating life support system and its function within restorative models of planetary health. It also discusses algae’s biotechnological applications, including potential nutritional and pharmaceutical products.

**Analysis of Oceanic Waters and Sediments**

Thomas Roy Crompton

Until fairly recently, the analysis of seawater was limited to a number of major constituents such as chloride and alkalinity. Insufficient attention had been given to the analysis of sediments and one of the objects of this book is to draw the attention of analysts and others concerned to the methods available as well as their sensitivity and limitations. This book covers all aspects of the analysis of seawater using both classical and the most advanced, recently introduced physical techniques.

**Annual Fishes**

**Life History Strategy, Diversity, and Evolution**

Edited by Nibia Berois, Graciela García and Rafael O. de Sá

This book is the first to give a complete overview of the current knowledge of annual fishes, covering their life cycle, reproductive biology, evolutionary ecology, reproductive behavior, sexual selection, genetics, speciation, and integrative and conservation strategies. It brings together researchers in different areas of annual fishes to summarize previous work, overview the current research, and highlight promising areas of research, and also notes the gaps in knowledge that challenge future research on these unique and important models in vertebrate biology.

**Biology and Ecology of Anguillid Eels**

Edited by Takao Arai

Anguillid eels have fascinated biologists for centuries due to their spectacular long-distance migrations between freshwater habitats and their spawning areas far out in the ocean. This book provides a long overdue update on the biology and ecology of anguillid eels and features comprehensive coverage of the key features of the genus Anguilla. It covers a broad spectrum of topics on the biology (taxonomy, phylogeny, evolution, reproduction, feeding, salinity adaptation) and ecology (life history, recruitment, migration) of anguillid eels. It also brings together important information on the state of eel fisheries, conservation, exploitation, and management.

**Biology and Ecology of Bluefin Tuna**

Edited by Takashi Kitagawa, University of Tokyo, Kashiwa, Japan and Shingo Kimura, University of Tokyo, Kashiwa, Japan

With chapters contributed by experts, this book focuses on the biology and ecology of the three bluefin tuna species: the Pacific (Thunnus orientalis), Atlantic (T. thynnus), and southern bluefin tuna (T. maccoyii). It covers the phylogeny and basic ecological information such as early life history, age and growth, and food habits. The book also includes information related to migratory ecology, and important biological aspects such as metabolism and energetics, swimming performance, schooling, visual physiology, and reproductive physiology. It then introduces new research insights about various kinds of mathematical models for bluefin tuna ecology.

**Biology and Ecology of Carp**

Edited by Constanze Pietsch, University Basel, Switzerland and Philipp Hirsch, University Basel, Switzerland

Suitable for everyone interested in carp, from scholars to anglers, this book presents informative and engaging contributions from renowned experts. Thirteen cross-linked chapters provide an exhaustive and easily accessible treatise of carp aquaculture, natural and artificial reproduction, feeding and growth, ecosystem effects, and the effects of disease agents and toxic substances. Color illustrations and infoboxes help readers navigate technical terms and complex concepts.

[Full contents and more information](#)
The Biology and Ecology of Parrotfishes
Edited by Andrew Scott Hoey, David Roy Bellwood, James Cook University, Townsville, QLD, Australia and Roberta Martini Ronaldo, Universidade de São Paulo, Brazil
Parrotfishes (subfamily Scaraninae, family Labridae), named for their brightly colored bodies and beaklike jaw, are a unique group of marine fishes that have captured the attention of researchers, conservationists, and the general public worldwide. This book brings together the world’s leading authorities on the evolution, biology, ecology, fisheries and conservation of parrotfishes. In doing so, it provides a comprehensive summary of the research conducted on this unique group of fishes and highlights emerging topics and future direction.

Biology and Management of Invasive Quagga and Zebra Mussels in the Western United States
Edited by Wai Hing Wong, Bureau of Water Resources, Worcester, Massachusetts, USA and Shawn L. Gerstenberger
This book is a synthesis of the biology and management of invasive mussels from scientists and managers working on invasive quagga/zebra mussels in the western U.S. and will specifically benefit people who are fighting invasive mussels in Western waterbodies. It includes guidance documents and protocols related to early detection, prevention, and management of these invasive pests in the West. This book also offers an opportunity for scientists and lake managers worldwide to compare quagga/zebra mussels in the West, the Great Lakes, the East, and European dreissenid mussels.

Biology and Ecology of Sardines and Anchovies
Edited by Konstantinos Ganiás, Aristotle University of Thessaloniki, Greece
Apart from being commercially and socially significant, anchovies and sardines populations occupy crucial positions in the oceans’ ecosystems. Low in the food chain, clupeoids tend towards abundance, as if their purpose in life was to be eaten and fuel the upper levels of marine trophic chains. The present book covers a broad spectrum of topics on the biology (systematics, phylogeography, reproduction, feeding) and ecology (habitat characterization, recruitment variability) of anchovies and sardines. It also puts together important information on the state of their fisheries, exploitation and management.

Biology and Ecology of Venomous Marine Snails
Ramasesamy Santhanam, Tamilnadu Veterinary & Animal Sciences University, India
The first comprehensive volume exclusively on marine cone snails, this book provides descriptions of over 100 species of hazardous marine snails along with their biological and ecological characteristics; the characteristics of conotoxins; information on cone snail injuries and their treatment along with prevention measures; and the therapeutic and medicinal value of conotoxins, including as a powerful nonaddictive painkiller, an epilepsy drug, and more. Over 275 color illustrations accompany the text for easy identification.

Biology of Damselfishes
Edited by Eric Parmentier, University of Liège, Belgium and Bruno Frédérich, University of Liège, Belgium
Damselfishes (Pomacentridae) are a well-known coral reef family showing high diversity and many interesting characteristics in dealing with their way of life (sound production, sex change, farming and gregarious behavior, settlement, diet). This book gathers the data dealing with damselfish morphology, provides keys to allow the recognition of some subtaxa, and synthesizes the information dealing with their morphology. It contains 15 chapters written by renowned scientists.

Biology of European Sea Bass
Edited by F. Javier Sánchez Vázquez, University of Murcia, Spain and José A. Muñoz-Cueto, University of Cadiz, Spain
Written by leading scientific experts, this book presents up-to-date reviews on key topics of seabass biology. It covers the biology and ecology of the different sea basses and the latest findings in molecular biology, physiology, and behavior of this species. Ranging from larval development to nutrition to pathology and immune system, the chapters cover a broad spectrum. The final chapter deals with novel tools such as transcriptomics, proteomics, and metabolomics. The social and commercial impact (fisheries and aquaculture) of seabass is also assessed.

CRC Press
Market: Life Sciences
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ebook: 978-1-482-22402-3
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CRC Press
Market: Life Sciences
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* For full contents and more information, visit: www.crcpress.com/9781482228540

CRC Press
Market: Life Sciences
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CRC Press
Market: Life Sciences
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* For full contents and more information, visit: www.crcpress.com/9781466599468

CRC Press
Market: Life Sciences
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* For full contents and more information, visit: www.crcpress.com/9781466599451

CRC Press
Market: Life Sciences
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* For full contents and more information, visit: www.crcpress.com/9781466599451

CRC Press
Market: Marine & Aquatic Sciences
February 2016: 235 x 156: 340pp
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ebook: 978-1-771-88331-3
* For full contents and more information, visit: www.crcpress.com/9781771883306

CRC Press
Market: Marine & Aquatic Sciences
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Market: Marine & Aquatic Sciences
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* For full contents and more information, visit: www.crcpress.com/9781482212099

CRC Press
Market: Marine & Aquatic Sciences
July 2014: 235 x 156: 436pp
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CRC Press
Market: Marine & Aquatic Sciences
July 2014: 235 x 156: 436pp
Hb: 978-1-466-59945-1 £103.00
ebook: 978-1-466-59946-8
* For full contents and more information, visit: www.crcpress.com/9781466599451
Biology of Perch

Edited by Patrice Couture, Institut national de la recherche scientifique INRS, Quebec, Canada and Greg Pyle, University of Lethbridge, Canada

The genus Perca includes only three species of fish, but they are ubiquitous and abundant in freshwater and brackish environments of the northern hemisphere, from North America to Europe and Asia. These species are important both ecologically and economically. In Biology of Perch, world-renowned specialists review and update the biology of these fish. The book opens with a review of the genetic makeup of this complex assemblage from early post-glacial dispersion to the colonization of new habitats. The influences of geomorphological and biological factors on the dispersal of yellow perch (Perca flavescens) are explored.

CRC Press
Market: Fish Science
August 2015: 235 x 156: 317pp
Hb: 978-1-482-25213-2: £99.00
* For full contents and more information, visit: www.crcpress.com/9781482252132

Biology, Ecology and Culture of Grey Mullets (Mugilidae)

Edited by Donatella Crosetti and Stephen J. M. Blaber

Mullets (grey mullets) are a family (Mugilidae) and order of ray-finned fish found in temperate and tropical waters worldwide. There are approximately 80 species of mullet; these fish have been considered an important food source in Mediterranean Europe since Roman times. This book provides a long overdue update on the biology and ecology of mullets and features comprehensive coverage of the key features of the Mugilidae family, such as recent DNA evidence and morphological data that challenge the traditional taxonomy.

CRC Press
Market: Life Science
January 2016: 254 x 178: 450pp
Hb: 978-1-482-25212-5: £99.00
ebook: 978-1-482-25213-2
* For full contents and more information, visit: www.crcpress.com/9781482252125

Climate Change and Coastal Ecosystems

Long-Term Effects of Climate and Nutrient Loading on Trophic Organization

Robert J. Livingston
Series: CRC Marine Science

Based upon a four decade longitudinal study of river-estuarine systems in the northeast Gulf of Mexico, this book provides a detailed comparsive-analysis of the long-term data with specific references to similarities and differences in system response to nutrient loading and long-term climatological cycles. It includes noted changes in the climate of the study regions over the four decades of field operations. The unique database allows a new approach to the differentiation of anthropogenic processes relative to natural conditions in a series of river-estuarine systems.

CRC Press
Market: Life Science
November 2014: 254 x 178: 572pp
Hb: 978-1-466-56842-6: £82.00
ebook: 978-1-466-56843-3
* For full contents and more information, visit: www.crcpress.com/9781466568426

Environmental Problems in Marine Biology

Methodological Aspects and Applications

Edited by Tamara Garcia Barrera and Jose Luis Gomez Ariza

Marine environment can be affected by several pollution problems, such as the presence of elements and their chemical species, pharmaceuticals, and nanoparticles. Assessment strategies include proteomics, genomics, chemical speculation analysis, metatransomics, and metabolomics. This book serves as a useful methodological tool for researchers and specialists in the fields of analytical chemistry, environmental sciences, biochemistry, genomics, and toxicology. It includes, for the first time, the methodological aspects and applications related to chemical speciation and -omics strategies applied to the marine environment.

CRC Press
Market: Life Science
September 2016: 229 x 152: 300pp
Hb: 978-1-498-73047-1: £121.00
ebook: 978-1-498-73048-8
* For full contents and more information, visit: www.crcpress.com/9781498730471

Dynamics in Organic Matter Processing, Ecosystem Metabolism and Tropic Sources for Consumers in the Mara River, Kenya

Frank Onderi Masese, UNESCO-IHE Institute for Water Education, Delft, The Netherlands

To properly conserve, restore and manage riverine ecosystems and the services they provide, it is pertinent to understand their functional dynamics. This thesis explores the functioning of tropical African streams and savanna rivers by assessing the spatial and temporal dynamics in organic processing and carbon flow in riverine food webs. The thesis contributes to the theory and has improved understanding of the functioning of African tropical streams in terms of shredder diversity and role in organic matter processing. The thesis also shows that large mammalian herbivores enhance terrestrial-aquatic food-web linkages in savanna rivers via their transfer of terrestrial organic matter.

CRC Press
Market: Water Science, Technology and Engineering
October 2015: 240 x 152: 448pp
Pb: 978-1-138-02815-9: £49.99
* For full contents and more information, visit: www.crcpress.com/9781138028159

Edible Seaweeds of the World

Leonel Pereira, University of Coimbra, Portugal

Seaweed is used in many countries for very different purposes - directly as food, especially in sushi, as a source of phycocolloids, extraction of compounds with antiviral, antibacterial or antitumor activity and as biofertilizers. About four million tons of seaweed are harvested annually worldwide. Of the various species known, less than 20 account for 90% of the biomass exploited commercially. This book details 147 species of edible seaweed, including scientific name and respective common names, geographic location, nutritional composition, uses and is extensively illustrated.

CRC Press
Market: Life Science
February 2016: 235 x 156: 448pp
Hb: 978-1-498-73047-1: £127.00
ebook: 978-1-498-73048-8
* For full contents and more information, visit: www.crcpress.com/9781498730471
Environmental Sex Differentiation in Fish

T. J. Pandian, Madurai Kamaraj University, Tamilnadu, India
This is the third and final volume in the series on Sex Differentiation in Fish. The book represents the first attempt to comprehensively address all issues of negative effects of human activities on sex differentiation and reproductive output. It details the negative effects of anthropogenic activities on skewed sex ratio of fishes by disrupting the sex differentiation process and impaired reproductive output. It also summarizes and evaluates the available ex-situ techniques for conservation of fish genome.

Freshwater Crayfish: A Global Overview

Edited by Tadashi Kawai, Wakkanai Fisheries Institute, Japan, Zen Faulkes, The University of Texas-Pan American, Edinburg, USA and Gerhard Scholtz, Humboldt-Universität zu Berlin, Germany
For their great commercial importance as a human food delicacy, crayfish are now becoming of wider interest to molecular biologists, and also to conservationists due to the fact that in some countries many of the native crayfish species are under threat from human activity, disease, and competition from other introduced crayfish species. Helmed by three editors in Japan, Europe, and the US, this book invites contributions from experts around the globe, covering the conservation status and biology of all endangered species, taxonomy, and distribution of crayfishes worldwide.

Evolutionary Biology of the Atlantic Salmon

Edited by Tomislav Vladić, Stockholm University, Sweden and Erik Petersson, Swedish University of Agricultural Sciences, Drottningholm, Sweden
Atlantic salmon (Salmo salar, L.) is an anadromous species contributing to major fishery catches and comprising a significant part of the aquaculturally produced fish for human consumption. The aim of this book is to incite the interest in the field of knowledge gathered from a broad scope of disciplines that have investigated this fish species. Undeniably, increasing fishery pressure on wild fish stocks throughout the world oceans has prompted the need for sustainable aquacultural production for increasing human demands.

Hagfish Biology

Edited by Susan L. Edwards, Appalachian State University, Boone, North Carolina, USA and Gregory G. Goss, University of Alberta, Edmonton, Canada
Series: CRC Marine Biology Series
This book provides an avenue of synergy between scientists interested in hagfish physiology, molecular and evolutionary biology, morphology, and protection. It compiles scientific information on hagfishes that builds on previous knowledge while encouraging further expansion of scientific interest and learning about this fascinating yet understudied key evolutionary species.

Fish Cytogenetic Techniques

Ray-Fin Fishes and Chondrichthians

Edited by Catherine Ozouf-Costaz, Eva Pisano, University of Genova, Italy, Fausto Foresti and Lucrèdes Foresti de Almeida Toledo, Universidade de São Paulo, Brazil
Traditional cytogenetic techniques and molecular cytogenetics have greatly improved, but technical details and protocols are often not published in scientific journals due to constraints in format and size, and therefore are not accessible to the whole scientific community. This book fills a need for a handbook that specifically deals with fish cytogenetics. It brings together and updates the main techniques to standardize traditional methods and share novel developments and improvements with the entire scientific community interested in fundamental and applied fish cytogenetics.

Immunobiology of the Shark

Edited by Sylvia L. Smith, Florida International University, Miami, USA, Robert B. Sim, University of Oxford, Department of Pharmacology, UK and Martin F. Flajnik, University of Maryland at Baltimore, USA
Sharks belong to the oldest vertebrate species that possess immune systems similar to that of mammals. This makes them a great model species to study the fundamentals of the mammalian immune system. This book describes the cellular, genetic, and molecular specifics of immune systems in sharks and uses them to understand shark immunity as well as the evolution of immune systems in more recently-evolved vertebrates. Written by global experts, the book will be a resource for immunologists, geneticists, ecologists, evolutionary and conservation biologists, and investigators engaged in shark research.
Impacts of Oil Spill Disasters on Marine Habitats and Fisheries in North America
Edited by J. Brian Alford, The University of Tennessee, Knoxville, USA, Mark S. Peterson, University of Southern Mississippi, Ocean Springs, USA and Christopher C. Green, Louisiana State University Agricultural Center, Baton Rouge, USA
Series: CRC Marine Biology Series
This book contains scientific findings and reviews from experts researching impacts of the Exxon Valdez, Ixtoc I, and Deepwater Horizon oil spills on coastal fishery resources. It describes physiological effects of oil-derived compounds on fishes, presenting results from field and laboratory investigations. It addresses the science of assessing oil spill impacts on coastal habitats, with an emphasis on salt-marsh ecosystems in the Gulf of Mexico. It also explores quantified and potential impacts of oil spills on population and community dynamics of commercial and recreational fishery species.
CRC Press
Market: Environmental Science
October 2014: 235 x 156: 398pp
Hb: 978-1-466-58830-1: £63.99
eBook: 978-1-466-58167-8: £72.99
Hb: 978-1-466-58831-8: £76.99
* For full contents and more information, visit: www.crcpress.com/9781466557208

Interrelationships Between Corals and Fisheries
Edited by Stephen A. Bortone, Ph.D., Osprey Aquatic Sciences, Inc., Tampa, Florida, USA
Series: CRC Marine Biology Series
There is extensive concern about the impact of fishing on coral reef structure and, conversely, the impact of decreasing coral on fisheries. Written by a team of notable authorities in coral reef research and fisheries management, this book examines the short- and long-term consequences of trends in coral health for fisheries. It addresses current and emerging threats as well as challenges and opportunities for managing corals and associated fisheries. Its inclusive coverage makes this an important resource for both researchers and environmental resource managers.
CRC Press
Market: Life Science
July 2014: 235 x 178: 322pp
Hb: 978-1-466-58830-1: £63.99
eBook: 978-1-466-58181-4: £103.00
Hb: 978-1-466-58831-8: £82.00
* For full contents and more information, visit: www.crcpress.com/9781466581678

Interactions of Land, Ocean and Humans
A Global Perspective
Chris Maser, Consultant, Corvallis, Oregon, USA
Series: Social Environmental Sustainability
Coastal and marine ecosystems are threatened by global warming, sea level rise and changes in ocean chemistry. This book synthesizes a large body of literature on how terrestrial and marine ecosystems interact globally and how these interactions will be affected by, and affect, anthropogenic changes.
CRC Press
Market: Environmental Science
October 2014: 235 x 156: 332pp
Hb: 978-1-482-22639-3: £72.99
eBook: 978-1-482-22640-9: £99.00
* For full contents and more information, visit: www.crcpress.com/9781482226393

King Crabs of the World
Biology and Fisheries Management
Edited by Bradley G. Stevens, University of Maryland Eastern Shores, Princess Anne, USA
This book is divided into three thematic areas. The first covers a volume that will serve as a basis for education and research for many decades to come.
CRC Press
Market: Marine and Aquatic Science
March 2014: 254 x 178: 636pp
Hb: 978-1-498-71873-8: £82.00
eBook: 978-1-498-71874-5: £103.00
* For full contents and more information, visit: www.crcpress.com/9781498718738

Marine Algae
Biodiversity, Taxonomy, Environmental Assessment, and Biotechnology
Edited by Leonel Pereira, University of Coimbra, Portugal and Joao Magalhaes Neto, University of Coimbra, Portugal
This book is divided into three thematic areas. The first covers a revision of the taxonomy of algae, based on the algae portal, as well as the general aspects of biology and the methodologies used in this branch of marine biology. The second subject area focuses on the use of algae in environmental assessment, with an intensive implementation in Western economies and some emerging economies. The third topic is potential use of algae in various industries including food, pharmaceuticals, cosmetics, agricultural fertilizers, and the emerging biofuels industries.
CRC Press
Market: Life Science
September 2014: 235 x 156: 398pp
Hb: 978-1-466-58167-8: £103.00
eBook: 978-1-466-58181-4: £137.00
* For full contents and more information, visit: www.crcpress.com/9781466581678

An Introduction to Fish Migration
Edited by Pedro Morais, eCIMAR, Porto, Portugal and Francoise Daverat, Cemagref EPBX Research Unit, Cestas, France
Since the publication of The Migrations of Fish by Prof. Alexander Meek in 1916, a number of books have been published on this subject. However, most of these books only cover one type of migratory mechanisms. This book aims to overcome this drawback by presenting a comprehensive coverage of all life history strategies—amphidromy, diadromy, oceanodromy, and potadromy in one book.
CRC Press
Market: Marine Science
February 2016: 235 x 156: 300pp
Hb: 978-1-482-22639-3: £82.00
eBook: 978-1-482-22640-9: £103.00
* For full contents and more information, visit: www.crcpress.com/9781498718738

For full contents and more information, visit: www.crcpress.com
Marine Biomedicine
From Beach to Bedside
Edited by Bill J. Baker, University of South Florida, Tampa, USA
This book assesses current efforts in marine biomedicine and evaluates the implications of recent advances on the future of the field. The book covers four sections. The first one addresses the technology that has recently been brought to bear on the study of marine natural products, including omic and bioinformatic techniques. The second focuses on lead discovery and reviews various products and their activities. Examples of clinically successful marine products and discussions of approaches to the clinic are presented in the third section while the last section discusses prospects for the future of marine biodiversity.

CRC Press
Market: Life Science
November 2015: 254 x 178: 594pp
HB: 978-1-498-70533-2: £127.00
* For full contents and more information, visit: www.crcpress.com/9781498705332

Marine Macro- and Microalgae
An Overview
Edited by F. Xavier Malcata, Universidade do Porto, Matosinhos, Portugal, Sousa Pinto Isabel, University of Porto, Portugal and Ana Catarina Afonso Guedes, Centre of Marine & Environmental Research - CIIMAR, Porto, Portugal
The marine environment accounts for most biodiversity on our planet, while offering a huge potential for citizens’ health and well-being. Its extensive resources already constitute the basis of many economic activities, but many more are expected in coming years. This book covers current knowledge on uses of marine algae to obtain bulk and fine chemicals, coupled with optimization of the underlying production and purification processes. Major gaps and potential opportunities in this field are discussed in a critical manner.

CRC Press
Market: Life Science
January 2016: 235 x 156: 600pp
HB: 978-1-498-70533-2: £127.00
* For full contents and more information, visit: www.crcpress.com/9781498705332

Marine Macrophytes as Foundation Species
Edited by Emil Olafsson, Spanish Institute of Oceanography (IEO), Palma, Spain
Marine macrophytes (macroalgae, seagrasses, and mangroves) comprise thousands of species distributed in shallow water areas along the world’s coastlines. They play a key role in marine ecosystems regarding biodiversity and energy flow. A large proportion of macrophyte species can be characterised as ecosystem engineers—organisms that directly or indirectly affect the availability of resources to other species by modifying, maintaining, and creating habitats. The book is among the first one to concentrate on the value of macrophytes for the well-being of marine habitats. The book is aimed at academics but may be useful for students, policy makers, and laymen alike.

CRC Press
Market: Life Science
February 2016: 235 x 156: 323pp
HB: 978-1-498-72324-4: £82.00
* For full contents and more information, visit: www.crcpress.com/9781498723244

Marine Mammal Physiology
Requisites for Ocean Living
Edited by Michael A. Castellini, School of Fisheries and Ocean Sciences, Fairbanks, Alaska, USA and Jo-Ann Mellish, North Pacific Research Board, Anchorage, Alaska, USA
Series: CRC Marine Biology Series
Marine Mammal Physiology: Requisites for Ocean Living explores the essential aspects of what makes a marine mammal different from terrestrial mammals, beyond just their environment. Unlike many publications and books that cover these species from almost all perspectives, this textbook takes a step back to focus on the physiological and biochemical characteristics that have allowed these mammals as a group to effectively exploit the marine environment that is so hostile to humans.

CRC Press
Market: Life Science
December 2015: 254 x 178: 356pp
HB: 978-1-482-24267-6: £63.99
* For full contents and more information, visit: www.crcpress.com/9781482242676

Molluscan Communities of the Florida Keys and Adjacent Areas
Their Ecology and Biodiversity
Edited by Edward J. Petuch, Florida Atlantic University, Boca Raton, USA and Robert F. Myers
This book is the first comprehensive overview of the ecology and biodiversity of the phylum Mollusca in the area extending from the Dry Tortugas and Ten Thousand Islands in the west to Palm Beach in the east. It provides detailed analyses of molluscan faunas found in 20 different ecosystems, emphasising the marine environments of the Florida Keys archipelago and its extensive coral reef tracts. Full-page color illustrations portray living animals, unique Keys environments, underwater ecosystems, and satellite images. Color plates illustrate over 550 of the region’s most ecologically important species.

CRC Press
Market: Life Science
December 2014: 254 x 178: 320pp
HB: 978-1-482-24919-8: £76.99
Ebook: 978-1-482-24919-8: $76.99
* For full contents and more information, visit: www.crcpress.com/9781482249187

Nutritional Freshwater Life
Ramasamy Santhanam, Fisheries College and Research Institute, Tamil Nadu, India
Fishing is considered to be the largest extractive use of wildlife in the world. About 90% of all freshwater fisheries occur in developing countries. Well-illustrated with approximately 250 images of species, this book deals with nutritional facts of different groups of edible freshwater life: algae and plants, crustaceans (prawns, crayfish and crabs), molluscs (bivalves and gastropods), and fish and frogs along with their characteristics such as classification, common names, habitats, global distribution and biological features.

CRC Press
Market: Life Science
June 2015: 235 x 156: 323pp
HB: 978-1-498-71621-5: £76.99
* For full contents and more information, visit: www.crcpress.com/9781498716215
Nutritional Marine Life

Ramasesamy Santhanam, Fisheries College and Research Institute, Tamilnadu, India

The first book of its kind, this text explores the nutritional characteristics of different groups of edible marine life. Edible species of phytoplankton, seaweeds and marsh plants, jellyfish, crustaceans, mollusks, fish, echinoderms, prochordate, fish, turtles and mammals are examined. For each species, the book also reviews its classification, common name, habitat, global distribution, and biological features. The highly accessible style and high-quality photographs make it easy to identify the nutritionally and commercially important marine species along with their essential features and nutritional facts.

CRC Press
Market: Aquaculture
December 2014: 254 x 178: 290pp
Hb: 978-1-482-26205-6: £82.99
ebook: 978-1-482-26206-3
* For full contents and more information, visit: www.crcpress.com/9781482262056

Oceanography and Marine Biology: An Annual Review, Volume 52

Edited by R.N. Hughes, Bangor University, Gwynedd, UK,
D.J. Hughes, Scottish Association for Marine Science, Argyll, UK
and J.P. Smith, School of Biological Sciences, University of Aberdeen, UK

Series: Oceanography and Marine Biology - An Annual Review

Oceanography and Marine Biology: An Annual Review remains one of the most cited sources in marine science. This series is consistently among the highest ranking impact factors for the marine biology category of the citation indices compiled by the Institute of Scientific Information. It is an essential reference for research workers and students in all fields of marine science, and the series volumes find a place in the libraries of not only marine laboratories and institutes but also universities.

CRC Press
Market: Life Science
September 2014: 254 x 178: 400pp
Hb: 978-1-482-22059-9: £114.00
ebook: 978-1-482-22066-7
* For full contents and more information, visit: www.crcpress.com/9781482220599

Phylogeny, Anatomy and Physiology of Ancient Fishes

Edited by Giacomo Zacccone, University of Messina, Italy,
Konrad Dobrowski, Ohio State University, Colombus, USA,
Michael S. Hedrick, University of North Texas, Denton, USA,
Jorge M. O. Fernandes, University of Nordland, Bodø, Norway and Jose M. Icardo

This book on ancient fishes unites the work of many specialists coming from different areas of biology. This volume includes a phylogenetic account of the cardiac outflow tract, and the particulars of the heart and circulation in lungfishes. The control of breathing and the lung-swim bladder issue is discussed. The developmental anatomy of the sturgeon gut and accounts of the gut structure in lungfishes and garfishes are also included. Biochemical and physiological aspects of the behavior of lungfishes and garfishes are presented. Reports on the fish olfactory system, and on the amazing slime glands of garfishes, are also covered.

CRC Press
Market: Life Sciences
August 2015: 235 x 156: 305pp
Hb: 978-1-498-70755-8: £82.00
ebook: 978-1-498-70756-5
* For full contents and more information, visit: www.crcpress.com/9781498707558

Oceanography and Marine Biology: An Annual Review, Volume 53

Edited by R.N. Hughes, Bangor University, Gwynedd, UK,
D.J. Hughes, Scottish Association for Marine Science, Argyll, UK
and J.P. Smith, School of Biological Sciences, University of Aberdeen, UK

Series: Oceanography and Marine Biology - An Annual Review

The book examines basic areas of marine research, subjects of special and topical importance, and new areas as they arise. This series is consistently among the highest ranking in terms of impact factor in the marine biology category of the citation indices compiled by the Institute of Scientific Information. It is an essential reference for research workers and students in all fields of marine science, and the series volumes find a place in the libraries of universities, marine laboratories, research institutes and government departments.

CRC Press
Market: Life Science
August 2015: 254 x 178: 366pp
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ebook: 978-1-498-70546-2
* For full contents and more information, visit: www.crcpress.com/9781498705455

Habitat, Population Dynamics, and Metal Levels in Colonial Waterbirds

A Food Chain Approach
Joanna Burger and Michael Gochfeld
Series: CRC Marine Science

Based on longitudinal studies—some into their fifth decade—of colonial waterbirds, this book provides a clear picture of the corrosive effects of heavy metals in the aquatic environment today. Colonial-nesting birds can serve as excellent bioindicators and sentinels for both human and ecological health. This book takes a food-web, ecosystem approach to contaminants, using populations dynamics, habitat selection, and inputs to the bay to examine metal levels. It includes the human dimension, discusses what metals in birds tell us about human exposure, and describes stakeholder involvement in these issues.

CRC Press
Market: Marine & Aquatic Science
May 2016: 254 x 178: 344pp
Hb: 978-1-482-25112-8: £89.00
ebook: 978-1-482-25114-2
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Reproduction and Development of Crustacea

T. J. Pandian, Madurai Kamaraj University, Tamilnadu, India

Series: Reproduction and Development in Aquatic Invertebrates

Dating back to the early Cambrian period, crustaceans had ample time to undertake endless experimentation with form and function. Today, no other group of plants or animals on the planet exhibit the range of morphological diversity seen among extant Crustacea. With more than 52,000 species, they are placed fourth in terms of overall species diversity. This book will comprehensively elucidate the reproduction and development of all the taxonomic groups of Crustacea and will bridge the gap between conventional zoologists and molecular biologists. Reproductive modes from the point of embryonic stem cells and primordial germ cells is discussed with a special section on cysts.

CRC Press
Market: Life Science
April 2016: 235 x 156: 344pp
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Science, Information, and Policy Interface for Effective Coastal and Ocean Management
Edited by Bertram H. MacDonald, Dalhousie University, School of Information Management, Halifax, Nova Scotia, Canada, Suzuette S. Soomai, Dalhousie University, School of Information Management, Halifax, Nova Scotia, Canada, Elizabeth M. De Santo, Department of Earth and Environment, Franklin & Marshall College, Lancaster, Pennsylvania, USA and Peter G. Wells

The purpose of the book is to provide a timely and original look at the role that information, and particularly scientific information, plays in the policy-making and decision-making processes for coastal and ocean management. The knowledge gained from the principles and case studies described in the book will enhance best practices for more effective communication and use of marine environmental information, particularly at the science-policy interface. The book will also contribute to the current understanding of information, particularly by arguing that the term “science-policy interface” is a misnomer, as there may be many interfaces between science and policy.

CRC Press
Market: Environmental Science
May 2016: 235 x 156: 416pp
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Toxins and Biologically Active Compounds from Microalgae, Volume 2
Biological Effects and Risk Management
Edited by Gian Paolo Rossini, Università degli Studi di Modena e Reggio Emilia, Italy

This book provides a structured account of the existing knowledge of toxic algae, the chemistry of the toxins they produce, the effects these substances exert in humans and wildlife, as well as the strategies envisaged to protect public health and the environment. It covers recent advances in the understanding of the biology of toxin producers and the factors involved in the appearance and dynamics of harmful algae blooms, the factors affecting toxin production, the synthesis of toxins both in natural producers and by chemical means in a lab, and the toxin groups posing continuing and novel hazards to living systems.

CRC Press
Market: Ecological Toxicology
April 2014: 235 x 156: 700pp
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ebook: 978-1-482-23147-2
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Seafood Science
Advances in Chemistry, Technology and Applications
Edited by Se-Kwon Kim, Pukyong National University, Busan, South Korea

This book provides current trends in seafood science of various relevant topics including isolation aspects, different methodologies involved in seafood production, detailed explanations about marine species such as fish, seaweed, and crustaceans and their health benefits as well as health risk. These topics provide a platform to develop various aquaculture/biotechnology industries. The book is essential reading for the novice and experts marine-related fields, such as aquaculture, biotechnology, chemical sciences, natural products, materials science, pharmaceutical science, and nutraceutical science.

CRC Press
Market: Food & Culinary Science
September 2014: 235 x 156: 606pp
Hb: 978-1-466-59582-8: £123.99
ebook: 978-1-466-59583-5
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Toxins and Biologically Active Compounds from Microalgae, Volume 1

Edited by Gian Paolo Rossini, Università degli Studi di Modena e Reggio Emilia, Italy

This book provides a structured account of the existing knowledge of toxic algae, the chemistry of the toxins they produce, the effects these substances exert in humans and wildlife, as well as the strategies envisaged to protect public health and the environment. It covers recent advances in the understanding of the biology of toxin producers and the factors involved in the appearance and dynamics of harmful algae blooms, the factors affecting toxin production, the synthesis of toxins both in natural producers and by chemical means in a lab, and the toxin groups posing continuing and novel hazards to living systems.

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February 2014: 235 x 156: 542pp
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Analysis of Capture-Recapture Data
Rachel S. McCrea, University of Kent, Canterbury, UK and Byron J. T. Morgan
Series: Chapman & Hall/CRC Interdisciplinary Statistics
Written for researchers and students in statistics, ecology, demography, and the social sciences, this book covers many modern developments of capture-recapture and related methods. With an emphasis on ecology, it helps readers understand model formulation and applications, including the technicalities of model diagnostics and checking. A wide range of real examples demonstrates the complexities that arise when describing extensive modern data. The book contains 130 exercises that extend the text and offers data sets, computer programs, and more online.
Chapman and Hall/CRC
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August 2014: 235 x 156: 314pp
Hb: 978-1-482-22558-7: £57.99
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* For full contents and more information, visit: www.crcpress.com/9781482225587

Biotechnology and Bioinformatics
Advances and Applications for Bioenergy, Bioremediation and Biopharmaceutical Research
Edited by Devarajan Thangadurai, Karnataka University, Dharwad, India and Jeyabalan Sangeetha, Karnataka University, Dharwad, India
Highlighting new tools, techniques, innovations, and applications, this book covers the role of targeted delivery of polymeric nanodrugs to cancer cells, microbial detoxifying enzymes in bioremediation and bacterial plasmids in antimicrobial resistance. It addresses pharmacogenomics, evaluation of gene expression, recombinant proteins from methylyosophoric yeast, identification of novel fermentation inhibitors of bioethanol production, and polyhydroxyalkanate-based biomaterials. The book highlights the practical utility of biotechnology and bioinformatics for bioenergy, production of high value biochemicals, modeling molecular interactions, drug discovery, and personalized medicine.
Apple Academic Press
Market: Statistics
July 2016: 235 x 156: 208pp
Hb: 978-1-498-74135-4: £89.00
eBook: 978-1-482-23938-6
* For full contents and more information, visit: www.crcpress.com/9781498741354

TEXTBOOK
Bayesian Networks
With Examples in R
Marco Scutari and Jean-Baptiste Denis, Unité de Recherche Mathématiques et Informatique Appliquées, INRA, Jouy-en-Josas, France
Series: Chapman & Hall/CRC Texts in Statistical Science
Suitable for graduate students and non-statisticians, this text introduces Bayesian networks using a hands-on approach with simple yet meaningful examples in R illustrating each step of the modeling process. The book explains the whole process of Bayesian network modeling, from structure learning to parameter learning to inference: It also gives a concise but rigorous introduction to causal Bayesian networks, and evaluates real-world examples involving causal protein signaling and body composition prediction.
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Market: Statistics
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eBook: 978-1-498-74136-1
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Fractals
Patterns in Nonlinear Dynamics and Applications
Santo Banerjee, University Putra Malaysia and Sayan Mukherjee
The aim of this book is to describe the essence of fractals and multifractals dynamics in the applications of bioscience and engineering, bioinformatics, and financial time series. To reach these aims, the book will cover the basic idea, history, structure, methodology and analysis of fractals, the relationship between fractals and nonlinear dynamics, the applications of fractal and multifractal analysis in biomedical science, and how fractal signals and images are modelled by Iterated Function system. Illustrations and practical applications are given throughout the text to provide clear interpretations and explanations of various complex fractal objects and fractal modelling.
CRC Press
Market: Mathematics
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Bayesian Phylogenetics
Methods, Algorithms, and Applications
Edited by Ming-Hui Chen, University of Connecticut, Storrs, USA, Lynn Kuo, University of Connecticut, Storrs, USA and Paul O. Lewis, University of Connecticut, Storrs, USA
Series: Chapman & Hall/CRC Mathematical and Computational Biology
Suitable for graduate-level researchers in statistics and biology, this book presents a snapshot of current trends in Bayesian phylogenetic research. It emphasizes model selection, reflecting recent interest in accurately estimating marginal likelihoods. The book discusses new approaches to improve mixing in Bayesian phylogenetic analyses in which the tree topology varies. It also covers divergence time estimation, biologically realistic models, and the burgeoning interface between phylogenetics and population genetics.
Chapman and Hall/CRC
Market: Bioinformatics
May 2014: 235 x 156: 363pp
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Immune System Modelling and Simulation
Filippo Castiglione, National Research Council of Italy, Institute for Computing Applications and Franco Celada, Hospital for Joint Diseases, New York, New York, USA
This book describes a computational model of the immune system reaction, C-ImmSim. The book presents the basic model as well as the various customizations to implement the description of different diseases and the way they have been used to produce new knowledge either from hypothesis or from experimental data. The book can be used as a practical guide to implement a computational model with which to study a specific disease and to try to address realistic clinical questions.
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TEXTBOOK

Dynamical Systems for Biological Modeling
An Introduction

Fred Brauer, University of British Columbia, Vancouver, Canada and Christopher Kribs, University of Texas at Arlington, USA
Series: Advances in Applied Mathematics
This book prepares both biology and mathematics students with the understanding and techniques necessary to undertake basic modeling of biological systems. Its approach emphasizes qualitative ideas rather than explicit computations and does not overwhelm students with precise technical details. The book discusses a variety of biological modeling topics, including population biology, epidemiology, immunology, intraspecies competition, harvesting, predator-prey systems, structured populations, and more. The authors also include many examples of problems with solutions and some exercises which follow the examples quite closely.

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Market: Mathematics
January 2016: 235 x 156: 478pp
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Introduction to Ecological Sampling

Edited by Bryan F.J. Manly, Western EcoSystem Technology, Inc., Laramie, Wyoming, USA and Jorge A. Navarro Alberto, Universidad Autonoma de Yucatan, Merida, Mexico
Series: Chapman & Hall/CRC Applied Environmental Statistics
This book shows how to use sampling procedures for ecological and environmental studies. It incorporates both traditional sampling methods and recent developments in environmental and ecological sampling methods, including mark-recapture, adaptive, and removal sampling. The book explains the methods as simply as possible, keeping equations and their derivations to a minimum. Accessible to biologists, the text only assumes a basic knowledge of statistical methods. Data sets and R code are available on a supplementary website.

Chapman and Hall/CRC
Market: Statistics
October 2014: 235 x 156: 231pp
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TEXTBOOK

Introduction to Mathematical Oncology

Yang Kuang, Arizona State University, Tempe, USA, John D. Nagy, Scottsdale Community College, Arizona, USA and Steffen E. Eikenberry, University of Southern California, Los Angeles, USA
Series: Chapman & Hall/CRC Mathematical and Computational Biology
This self-contained book focuses on mathematical models related to cancer growth and treatment. It presents the medical and biological background of the diseases, specific issues to be modeled, and existing methods and their limitations. The book introduces mathematical and programming tools, along with analytical and numerical studies of the models. The authors also develop new mathematical tools and look to future improvements on dynamical models. The text provides many classroom-tested exercises and projects at the end of most chapters.

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An Introduction to Physical Oncology
Towards Transitional Application of Multiscale Cancer Modeling

Vittorio Cristini, University of Texas Health Science Center at Houston, USA, Zhihui Wang, University of Texas Health Science Center at Houston, USA and Eugene Koay
This book presents a theoretical multiscale modeling framework for the integration of processes spanning from molecular signaling to individual and collective cellular behavior to complex spatiotemporal dynamics at the tissue and organ levels. It then gives a detailed discussion on how to incorporate experimental and patient data into the modeling framework. The book also illustrates multiscale modeling approaches through several applications, including breast cancer and mammary gland development, lymphoma and leukemia growth, the investigation of biobarriers to chemotherapeutic drugs, and nanoparticle-based delivering strategies.

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Claus Thorn Ekstrom and Helle Sørensen, University of Copenhagen, Denmark
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Mathematics and Archaeology

Edited by Juan A. Barceló, Universitat Autonoma de Barcelona, Spain and Igor Bogdanovic, Universitat Autonoma de Barcelona, Spain
Although many archaeologists have a good understanding of the basics in computer science, statistics, geostatistics, modeling, and data mining, more literature is needed about the advanced analysis in these areas. This book aids archaeologists in learning more advanced tools and methods while also helping mathematicians, statisticians, and computer scientists with no previous knowledge of the field realize the potential of the methods in archaeological experiments.

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Metasolutions of Parabolic Equations in Population Dynamics

Julían López-Gómez, Universidad Complutense de Madrid, Spain

This book explores the dynamics of a generalized prototype of semilinear parabolic logistic problem. The first part of the book introduces large solutions and metasolutions in the context of population dynamics. In a self-contained way, the second part analyzes a series of very sharp optimal uniqueness results found by the author and his colleagues. The last part reinforces the evidence that metasolutions are also categorical imperatives to describe the dynamics of huge classes of spatially heterogeneous semilinear parabolic problems.

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Patterns in Excitable Media

Sitabhra Sinha, Institute of Mathematical Sciences, Chennai, India and S. Sridhar

This book covers recent developments in the interdisciplinary field of dynamics and control of patterns in nonlinear biological systems described by excitable media models. Using examples of many real-life systems, it explores the impact of pattern dynamics on the structural and functional heterogeneities in the system. The book also discusses low-amplitude control schemes for eliminating patterns from an excitable medium, such as life-threatening cardiac arrhythmia. Codes for numerical simulation are provided in the appendix.

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Robust Response Surfaces, Regression, and Positive Data Analyses

Rabindra Nath Das, The University of Burdwan, India

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Solved and Unsolved Problems of Structural Chemistry

Milan Randic, Drake University, Des Moines, IA, Marjana Novic and Dejan Plavsic

This book introduces new methods and approaches for solving problems related to molecular structure. It includes numerous subjects such as aromaticity and topics from bioinformatics such as, DNA, proteins, and proteomes. It sheds light on numerous problems in chemistry which appeared to have been solved but were actually incomplete, including the protein alignment problem, as well as other complete solutions, methods, and approaches that can lead to the actualization of further solutions to problems in chemistry.

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Hideo Aizaki, Hokkaido University, Japan, Tomoaki Nakatani, Hokkaido University, Japan and Kazuo Sato, Rakuno Gakuen University, Hokkaido, Japan

*Series: Chapman & Hall/CRC The R Series*

This book explains how to use stated preference survey methods to measure people’s preferences based on decision making in hypothetical choice situations. Along with giving introductory explanations of the methods, the book collates information on existing R functions and packages as well as those prepared by the authors. It focuses on core SP methods, including contingent valuation, discrete choice experiments, and best–worst scaling. All the example data sets and code are available online.

Chapman and Hall/CRC

**Synthetic Gene Network**

Modeling, Analysis and Robust Design Methods

Bor-Sen Chen, National Tsing Hua University, Hsinchu, Taiwan R.O.C and Yu-Chao Wang, National Tsing Hua University, Hsinchu, Taiwan

This book develops a rational design and systematic approach to construct a gene network with desired behaviors. In order to achieve this goal, the registry of standard biological parts and experimental techniques are introduced at first. Then these biological components are characterized by a standard modeling method and collected in the component libraries, which can be efficiently reused in engineering synthetic gene networks. Based on the system theory, some design specifications are provided to engineer the synthetic gene networks to robustly track the desired trajectory by employing the component libraries.

CRC Press

**TEXTBOOK**

**Statistical Methods in Biology**

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S.J. Welham, Rothamsted Research, UK, S.A. Gezan, School of Forest Resources & Conservation, University of Florida, USA, S.J. Clark, Rothamsted Research, UK and A. Mead, Horticultural Research Institute, University of Warwick, UK

Written in simple language with relevant examples, this illustrative introductory book presents best practices in experimental design and simple data analysis. Taking a practical and intuitive approach, it only uses mathematical formulae to formalize the methods where necessary and appropriate. The text features extended discussions of examples that include real data sets arising from research. The authors analyze data in detail to illustrate the use of basic formulae for simple examples while using the GenStat® statistical package for more complex examples. Each chapter offers instructions on how to obtain the example analyses in GenStat and R.

Chapman and Hall/CRC

**Stochastic Dynamics for Systems Biology**

Christian Mazza, University of Fribourg, Switzerland and Michel Benaim

*Series: Chapman & Hall/CRC Mathematical and Computational Biology*

This is one of the first books to provide a systematic study of the many stochastic models used in systems biology. The book shows how the mathematical models are used as technical tools for simulating biological processes and how the models lead to conceptual insights on the functioning of the cellular processing system. Examples cover the phage lambda genetic switch, eukaryotic gene expression, noise propagation in gene networks, and more. Most of the text should be accessible to scientists with basic knowledge in calculus and probability theory.

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Acoustical Sensing and Imaging

Hua Lee, University of California, Santa Barbara, USA

A focused treatment of acoustical sensing and imaging covering the foundational aspects related to the major applications of underwater sensing, sonar imaging, tomographic acoustic microscopy, geophysical exploration, and medical ultrasound imaging is presented in this book. The theoretical framework and commonality of operating modalities is covered through a solid foundation of mathematical analysis and physical modeling. The concepts and techniques highlighted can be applied to many other sensing and imaging applications in the optical, microwave, terahertz, and ultrasound domains.

CRC Press

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Agent-Based Modeling and Simulation with FLAME

Mariam Kiran

Series: Chapman & Hall/CRC Computer and Information Science Series

This book discusses various aspects of agent-based modeling and simulation using FLAME (Flexible Large-scale Agent-Based Modeling Environment) which is a popular agent-based modeling environment that enables automatic parallelization of models. Along with a focus on the software engineering principles in building agent-based models, the book comprehensively discusses how models can be written for various domains including biology, economics and social networks. The book also includes examples to guide readers on how to write their own models.

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Edited by Eli Grushka, Hebrew University of Jerusalem, Israel and Nelu Grinberg, Boehringer-Ingelheim Pharmaceuticals Inc., Ridgefield, Connecticut, USA

Series: Advances in Chromatography

For more than four decades, scientists and researchers have relied on the Advances in Chromatography series for the most up-to-date information on a wide range of developments in chromatographic methods and applications. For Volume 52, well-known chemists offer cutting-edge reviews of chromatographic methods with applications in the life sciences—from aerosol-based detectors to protein biomarker assays. The clear presentation of topics and vivid illustrations for which this series has become known makes the material accessible and engaging to chemists at all levels of technical skill.

CRC Press

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* For full contents and more information, visit: www.crcpress.com/9781482233507

Advances in Imaging and Sensing

Edited by Shuo Tang, Saeedkia Daryoosh and Krzysztof Iniewski, Emerging Technologies CMOS Inc., Vancouver, British Columbia, Canada

Series: Devices, Circuits, and Systems

Electronic imaging and sensing systems are used for medical diagnosis. In recent years, for example, dental offices have been switching to digital X-ray imaging systems. Another growing application area is the use of digital infrared imaging systems for home inspections which can spot invisible water damage. Of course, electronic imaging and sensing systems are ubiquitous in cellphone, tablet and digital cameras. This book explains the physical principles of optical electronic imaging and provides information relative to its design and operation.

CRC Press

Market: Engineering - Electrical
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Analysis and Analyzers

Edited by Bela G. Liptak, Liptak Associates, Stamford, Connecticut, USA and Kriszta Venczel

Now available in two volumes sold separately and together, this completely updated and expanded new edition of the Instrumentation and Automation Handbook, Fifth Edition is strategically split to provide the latest chapters from leading experts around the globe on both Analysis and Analyzers as well as Measurement and Safety.

CRC Press

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Hb: 978-1-466-58591-1 £177.00  
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**Data Fusion Mathematics**

*Theory and Practice*

Jitendra R. Raol, MS Ramaiah Institute of Technology, Dept. of Electronics and Communications Engineering, Bangalore, India

In a focused, in-depth study, this book explores the mathematical tools used in this increasingly widespread and important technical field. It includes the theory, methods, and tools used for creating a synergy of the information acquired from multiple sources, sensors, databases, and direct information by humans. Researchers, scientists, and engineers working in the multi-sensor/data fusion area will find this book to be a valuable tool for design and analysis, especially in areas like aerospace engineering, defense systems, and environmental monitoring, where data fusion is critically important.

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*Edited by Charles Catanese, Chief Medical Examiner, Orange County, New York, USA*

The second edition of this bestseller is an easy-to-read reference covering forensic pathology principles from basic through advanced concepts relating to all manners of death. Featuring over 1600 full-color images, this book provides unparalleled photographic illustration to enhance understanding for medical and non-medically trained personnel. The text uses specific, detailed language to describe what is represented in each photo and to make side-by-side comparisons of similar but distinct pathologies. It also includes an entirely new section on histopathology.

CRC Press  
February 2016: 279 x 216: 634pp  
Hb: 978-1-466-58590-4 £199.00  
ebook: 978-1-482-25907-3  
* For full contents and more information, visit: www.crcpress.com/9781466585904

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**Distributed Control Applications**

*Guidelines, Design Patterns, and Application Examples with the IEC 61499*

*Edited by Alois Zoitl, fortiss GmbH, Munich, Germany and Thomas Strasser, Series: Industrial Information Technology*

This book discusses the IEC 61499 reference architecture for distributed and reconfigurable control, and its adoption by industry. The text provides design patterns, application guidelines, and rules for designing distributed control applications based on the IEC 61499 model. Examples from various industrial domains and laboratory environments are introduced and explored. Featuring chapters authored by subject-matter experts from Austria, Czech Republic, Germany, Greece, Finland, Portugal, Spain, Sweden, China, Canada, New Zealand, and the US, the book offers a global overview of IEC 61499 application domains. It also aids in implementing current automation solutions.

CRC Press  
**Market:** Engineering - Electrical  
January 2016: 235 x 156: 512pp  
Hb: 978-1-482-25906-5 £99.00  
ebook: 978-1-482-25906-3  
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**Color Atlas of Forensic Medicine and Pathology, Second Edition DVD**

*Edited by Charles Catanese, Chief Medical Examiner, Orange County, New York, USA*

Featuring twice the number of images as any other forensic pathology atlas, this DVD version demonstrates visually the postmortem changes of the human body and the different kinds of patterns produced in deaths caused by natural causes, diagnostic or therapeutic procedures, substance abuse, poisoning, child abuse, firearms, blunt instruments sharp instruments, burns and asphyxia. New to this edition will be an additional 400 photographs including a complete new section covering histopathology.

CRC Press  
December 2015  
Dvd: 978-1-466-58603-1 $127.00  
* For full contents and more information, visit: www.crcpress.com/9781466586031

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**Forensic DNA Evidence Interpretation, Second Edition**

*Edited by John S. Buckleton, Jo-Anne Bright, Institute of Environmental Science and Research, New Zealand and Duncan Taylor,*

Now in its second edition, this book is still the only one which covers the subject of forensic DNA interpretation from the standpoint of statistical analysis which is critical to supporting a legal claim. All chapters have been updated to reflect changes occurring in this fast-moving field, with special attention to PCR processes, worldwide values and the addition of internationally renowned scientists such as Peter Gill who is the father of DNA analysis.

CRC Press  
**Market:** Forensics  
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TEXTBOOK

Introduction to Optical Metrology

Rajpal S. Sirohi, Tezpur University, India
Series: Optical Sciences and Applications of Light
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CRC Press
Market: Engineering - Electrical
August 2015: 235 x 156: 449pp
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ebook: 978-1-466-55315-6
* For full contents and more information, visit: www.crcpress.com/9781482236101

Introduction to RF Power Amplifier Design and Simulation

Abdullah Eroglu, Indiana University–Purdue University, Fort Wayne, USA
This book provides step-by-step guidance for the design of radio frequency (RF) power amplifiers, from analytical formulation to simulation, implementation, and measurement. Demonstrating the use of computer-aided design (CAD) tools, the text explores active device modeling techniques for transistors, p-n junction diode characteristics, and extraction methods for active devices, network and scattering parameters, resonators, power-sensing devices, and RF filter designs for power amplifiers. Featuring numerous illustrations and examples of real-world engineering applications, this book is a valuable resource for the creation of efficient, better-performing, low-profile, high-power RF amplifiers.

CRC Press
Market: Engineering - Electrical
July 2015: 235 x 156: 449pp
Hb: 978-1-482-23164-9: £89.00
ebook: 978-1-482-23165-6
* For full contents and more information, visit: www.crcpress.com/9781482231649

LABORATORY PROTOCOLS IN APPLIED LIFE SCIENCES

Prakash Singh Bisen, Defense Research & Development Establishment, Gwalior, India
This manual includes details of research methodologies used in diverse disciplines of life sciences, including biotechnology, pharmaceutical sciences, medical sciences, and related fields. It provides the comprehensive information required to build a firm foundation in the life sciences. Due emphasis is given to techniques encountered both in practical classes, as well as techniques currently used for commercialization and product inventories. This book covers both basic techniques and also new, advanced techniques that continue to evolve and change.

CRC Press
Market: Life Sciences
February 2014: 254 x 178: 180pp
Hb: 978-1-466-55314-9: £114.00
ebook: 978-1-466-55315-6
* For full contents and more information, visit: www.crcpress.com/9781466553149

INTRODUCTION TO OPTICAL DETECTION OF EXPLOSIVES

Edited by Paul M. Pellegrino, United States Army Research Laboratory, Adelphi, Maryland, Ellen L. Hothoff, United States Army Research Laboratory, Adelphi, Maryland and Mikella E. Farrell, United States Army Research Laboratory, Adelphi, Maryland
Series: Devices, Circuits, and Systems
This book reviews past, present, and emerging optical laser-based technologies for the detection of explosives. Each chapter is authored by a leading expert on the respective technology, and is structured to offer historical perspective, address current advantages and challenges, and discuss novel research and applications. With the ultimate goal of aiding military and security forces in increasing speed and accuracy of explosive detection and identification, the text covers terahertz, laser-induced breakdown, ultraviolet, cavity ringdown, Raman, and reflectance spectroscopy, photodissociation laser-induced fluorescence, hyperspectral imaging, and more.

CRC Press
Market: Engineering - Electrical
March 2015: 235 x 156: 489pp
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ebook: 978-1-482-23329-2
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LABORATORY PROTOCOLS IN APPLIED LIFE SCIENCES

Prakash Singh Bisen, Defense Research & Development Establishment, Gwalior, India
This manual includes details of research methodologies used in diverse disciplines of life sciences, including biotechnology, pharmaceutical sciences, medical sciences, and related fields. It provides the comprehensive information required to build a firm foundation in the life sciences. Due emphasis is given to techniques encountered both in practical classes, as well as techniques currently used for commercialization and product inventories. This book covers both basic techniques and also new, advanced techniques that continue to evolve and change.

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Laser-Based Optical Detection of Explosives

Edited by Paul M. Pellegrino, United States Army Research Laboratory, Adelphi, Maryland, Ellen L. Hothoff, United States Army Research Laboratory, Adelphi, Maryland and Mikella E. Farrell, United States Army Research Laboratory, Adelphi, Maryland
Series: Devices, Circuits, and Systems
This book reviews past, present, and emerging optical laser-based technologies for the detection of explosives. Each chapter is authored by a leading expert on the respective technology, and is structured to offer historical perspective, address current advantages and challenges, and discuss novel research and applications. With the ultimate goal of aiding military and security forces in increasing speed and accuracy of explosive detection and identification, the text covers terahertz, laser-induced breakdown, ultraviolet, cavity ringdown, Raman, and reflectance spectroscopy, photodissociation laser-induced fluorescence, hyperspectral imaging, and more.

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CRC Press
Market: Engineering - Electrical
April 2016: 279 x 216: 364pp
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Introduction to Plasmonics
Advances and Applications
Edited by Sabine Szunerits, University of Lille, Villeneuve d'Ascq Cédex, France and Rabah Boukherroub, CNRS, Interdisciplinary Research Institute, France
Plasmonics is a highly dynamic field, and a number of researchers and scientists from other disciplines have become involved in it. This book presents the most widely employed approaches to plasmonics and the numerous applications associated with it. There are several underlying elements in plasmonics research. Advances in nanoscience and nanotechnology have made possible the fabrication of plasmonic nanostructures, deposition of thin films, and development of highly sensitive optical characterization techniques. The different approaches to nanostructuring metals have led to interesting optical properties and functionality via manipulation of the plasmon modes that such structures support.
Pan Stanford
Market: Physics
March 2015: 229 x 152: 378pp
Hb: 978-9-814-61312-5: £95.00
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* For full contents and more information, visit: www.crcpress.com/9789814613125
Measurement and Data Analysis for Engineering and Science, Third Edition

Patrick F. Dunn, University of Notre Dame, Indiana, USA

Based on instructor feedback, this third edition is a modular work, allowing greater flexibility in adoption. For the first time in such a text, experiments and demonstrations using smart phones and other handheld devices are included, along with more traditional technologies. Coverage of sensors and computer-based techniques for data collection and analysis has increased, as has the number of MATLAB® and Simulink® applications. A solutions manual, PowerPoint® lecture notes, and a website with laboratory exercises, and Arduino codes are available with qualifying course adoption.

Market: Engineering - Mechanical
May 2014: 235 x 156: 632pp
Hb: 978-1-466-55578-5: £254.00
• Market: Engineering - Electrical

CRC Press

MEMS and Nanotechnology for Gas Sensors

Sunipa Roy, Jadavpur University, Kolkata, India and Chandan Kumar Sarkar

Solid-state gas sensors based on semiconducting sensing materials represent a viable solution for an increasing number of applications, ranging from health care and safety to quality control in industrial processes. Enhancing the sensitivity of the sensor requires an elevated temperature with uniform temperature distribution throughout the sensing layer, which can be accomplished through the use of the MEMS micro-heater. This book covers the different fabrication procedures and sensor applications pertaining to gas sensors with respect to MEMS and nanotechnology.

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October 2015: 235 x 156: 234pp
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* For full contents and more information, visit: www.crcpress.com/9781498700122

CRC Press

Measurement and Safety

Edited by Bela G. Liptak, Liptak Associates, Stamford, Connecticut, USA and Kriszta Venczel

Now available in two volumes sold separately and together, this completely updated and expanded new edition of the Instrumentation and Automation Handbook, Fifth Edition is strategically split to provide the latest chapters from leading experts around the globe on both Measurement and Safety as well as Analyses and Analyzers.

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Hb: 978-1-482-23135-9: £254.00
ebook: 978-1-482-23136-6: £246.99
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CRC Press

Modern Electric Power System Operation

An Introduction

Guangya Yang, Technical University of Denmark, Kgs. Lyngby

Focusing on current practices in power system operations, this book provides the principles as well as the methodologies on modern power systems from the operational perspective. Intended for a one-semester course, it provides students with the necessary foundations so they can further seek and develop their skills in this field as required.

Market: Electrical Engineering
June 2016: 235 x 156: 400pp
Hb: 978-1-466-55578-5: £169.99
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* For full contents and more information, visit: www.crcpress.com/9781466555785

CRC Press

Measurement in Ultrasound, Second Edition

Edited by Paul Sidhu, Kings College Hospital, London, UK and Wui K. Chong, University of North Carolina, Chapel Hill, USA and Kesthra Satchitananda, King’s College Hospital, London, UK

This user-friendly handbook is designed for frequent use in everyday clinical practice. Over 150 high-quality ultrasound images are annotated with all key measurements and are accompanied by a concise companion text. The book follows a consistent format throughout for ease of reference and features useful information on the preparation and positioning of the patient for ultrasound, the type of probe and method to be used, the appearance of the resulting ultrasound images and the measurements to be taken from them.

Market: Medicine/Ultrasoundography
April 2016: 229 x 152: 416pp
Hb: 978-1-482-23135-9: £164.99
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CRC Press

Multisensor Data Fusion

From Algorithms and Architectural Design to Applications

Edited by Hassen Fourati, University Grenoble Alpes, France

Series: Devices, Circuits, and Systems

This book covers the theory and practice of multisensor data fusion, from fundamental concepts to cutting-edge techniques drawn from a broad array of disciplines. Featuring contributions from data fusion researchers and academicians, the text discusses the advantages and challenges associated with multisensor data fusion, from extended spatial and temporal coverage to imperfection and diversity in sensor technologies. It presents state-of-the-art advances in the design of data fusion algorithms and architectures, as well as showcases applications in fields such as medicine, transportation’s traffic, defense, and navigation.

Market: Electrical Engineering
August 2015: 254 x 178: 630pp
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* For full contents and more information, visit: www.crcpress.com/9781482263749

CRC Press
Multisensor Systems for Chemical Analysis
Materials and Sensors
Edited by Larisa Lvova, University of Rome Tor Vergata, Italy, Dmitry Kirsanov, St. Petersburg State University, Russia, Corrado Di Natale, University of Rome Tor Vergata, Italy and Audrey Legin, St. Petersburg State University, Russia
This book explores recent advances in the development of artificial sensory systems, widely known as electronic tongues (ET). Each of the book’s nine chapters is devoted to a particular research direction in modern ET, highlighting up-to-date ET technologies and applications. Prominent authors from around the world discuss various designs, sensor materials, and transduction principles. Helping readers understand the principles and development of reliable analytical instruments, the book will inspire fruitful new ideas and significant practical advances.

Pan Stanford
Market: Materials Science
February 2015: 229 x 152: 408pp
Hb: 978-9-814-41115-8: £95.00
ebook: 978-1-498-71101-2
* For full contents and more information, visit: www.crcpress.com/9789814411158

Optical Fiber Sensors
Advanced Techniques and Applications
Edited by Ginu Rajan, The University of New South Wales, Australia

Series: Devices, Circuits, and Systems
This book provides a fundamental understanding of the design, operation, and practical applications of fiber optic sensing systems. It describes the physical principles of, and latest developments in, optical fiber sensors, supplying detailed examples of various technologies in use. Chapters address state-of-the-art topics and emerging areas of research including photonic crystal fiber sensors, micro- and nanofiber sensing, and liquid crystal photonics. The text draws upon the extensive academic and industrial experience of its contributing authors to deliver a comprehensive introduction with a strong practical focus.

CRC Press
Market: Engineering - Electrical
March 2015: 254 x 178: 575pp
Hb: 978-1-482-22825-0: £95.00
ebook: 978-1-498-71103-6
* For full contents and more information, visit: www.crcpress.com/9781482228250

Optical Imaging Devices
New Technologies and Applications
Edited by Ajit Khosla, Lab17 Inc., Chatham, Ontario, Canada and Yamagata University, Japan and Dongsoo Kim, Samsung Electronics, Suwon, Korea

Series: Devices, Circuits, and Systems
This book delivers a comprehensive introduction to optical imaging and sensing, from devices to system-level applications. Drawing upon the extensive academic and industrial experience of its eminent editors and renowned chapter authors, this authoritative text explains the physical principles of optical imaging and sensing, providing an essential understanding of the design, operation, and practical applications of optical imaging and sensing systems. It covers topics such as silicon-based imaging characteristics, nanophotonic phased arrays, thin-film sensors, label-free DNA sensors, and in vivo flow cytometry.

CRC Press
Market: Engineering - Electrical
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NMR Spectroscopy in Liquids and Solids
Vladimir I. Bakhmutov

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CRC Press
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Pathogen removal using saturated sand columns supplemented with hydrochar
Jae Wook Chung, UNESCO-IHE Institute for Water Education, Delft, The Netherlands

Hydrothermal carbonization (HTC), also known as wet pyrolysis, has proven to be one of the simplest and most inexpensive technologies to produce a variety of carbonaceous materials from biowastes. This research is the first investigation on the use of hydrochar (solid product of HTC) as a pathogen adsorbent in wastewater treatment. This study demonstrates the promise of phage display in drug discovery and biotechnology.

CRC Press
Market: Water Science, Technology and Engineering
December 2015: 240 x 170: 175pp
Pb: 978-1-138-02929-3: £44.99
* For full contents and more information, visit: www.crcpress.com/9781138029293

2nd Edition
Phage Display In Biotechnology and Drug Discovery, Second Edition
Edited by Sachdev S. Sidhu, University of Toronto, Ontario, Canada and Clarence Ronald Geyer, University of Saskatchewan, Saskatoon, Canada

Series: Drug Discovery Series
This book provides a comprehensive view of the impact and promise of phage display in drug discovery and biotechnology. Building on the success of its previous edition, the book discusses current theories, principles, and methods in the field and demonstrates applications for peptide phage display, protein phage display, and the development of novel antibodies. Also covered are applications of phage display for protein characterization and drug discovery. The book provides readers with an overview of the amazing breadth of the impact that phage display technology has had on the study of proteins in general as well as the development of drugs.

CRC Press
Market: Medicinal Chemistry
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Pharmaceutical Industry Practices on Genotoxic Impurities

Edited by Heewon Lee, Boehringer Ingelheim Pharmaceuticals, Inc., Ridgefield, Connecticut, USA

Series: Chromatographic Science Series

A great deal of confusion and uncertainty over genotoxic impurity (GTI) identification, assessment, and control exists. This book strives to facilitate scientific and systematic consensus on GTI management by presenting rationales, strategies, practices, and case studies from the pharmaceutical industry. Exploring the safety, quality, and regulatory aspects of GTIs, the text explains the how and why of various GTI control tactics and practices, including GTI control examples in drug substance and drug product development processes from large and small pharmaceutical firms in multiple geographical regions.

CRC Press
Market: Analytical Chemistry
August 2014: 235 x 156: 536pp
Hb: 978-1-4398-7420-2: £99.00
ebook: 978-1-4398-7421-9
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Power System SCADA and Smart Grids

Mini S. Thomas, Jamia Millia Islamia, New Delhi, India and John Douglas McDonald, GE Energy Management - Digital Energy, Atlanta, Georgia, USA

This book brings together the fundamentals and possible application functions of power system supervisory control and data acquisition (SCADA). It assists electrical engineering students, researchers, and practitioners in acquiring a solid understanding of SCADA systems and application functions in generation, transmission, and distribution systems, which are evolving day by day, to help them adapt to new challenges effortlessly. The book reveals the inner secrets of SCADA systems, unmasks the potential of the smart grid, and inspires more minds to get involved in the development process.

CRC Press
Market: Engineering - Electrical
April 2015: 235 x 156: 335pp
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The Quantum Physics of Atomic Frequency Standards

Recent Developments

Jacques Vanier, Université de Montréal, Quebec, Canada and Cipriana Tomescu, Université de Montréal, Quebec, Canada

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CRC Press
Market: Physics
August 2015: 235 x 156: 486pp
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* For full contents and more information, visit: www.crcpress.com/9781466576971

Silicon on Insulator System Design

Edited by Bastien Giraud, CEA, LETI, MINATEC Campus, Grenoble, USA

Series: Devices, Circuits, and Systems

Covers all aspects of silicon system development including circuit and system design, new process development, application of novel materials for SOI systems and understanding the thermal challenges to restrict power dissipation in SCI systems. A detailed overview and their impact on the efficiency of SCI systems is included. The book will thus be a single and most complete source of information for readers in the area of SCI system design. Contributions from around the globe are included reporting the latest scientific research by experts from industry and academia.

CRC Press
Market: Engineering - Electrical
April 2016: 235 x 156: 272pp
Hb: 978-1-466-56654-2: £195.00
ebook: 978-1-466-56655-9
* For full contents and more information, visit: www.crcpress.com/9781466566542

Sensors and Actuators

Engineering System Instrumentation, Second Edition

Clarence W. de Silva, University of British Columbia, Vancouver, Canada

This introductory textbook on engineering system instrumentation emphasizes sensors, transducers, actuators, and devices for component interconnection. The book deals with “instrumenting” an engineering system through the incorporation of suitable sensors, actuators, and associated interface hardware including filters, amplifiers and other signal modifiers. In view of the practical considerations, design issues, and industrial techniques that are presented throughout the book, and in view of the simplified and snap-shot style presentation of more advanced theory and concepts, it also serves as a useful reference for engineers, technicians, project managers, and other practicing professionals in industry and in research laboratories.

CRC Press
Market: Automotive Engineering
July 2015: 254 x 178: 847pp
Hb: 978-1-466-50681-7: £82.00
ebook: 978-1-466-50682-4
Prev. Ed Hb: 978-1-4200-4483-6
* For full contents and more information, visit: www.crcpress.com/9781466506817

Sensors for Safety and Process Control in Hydrogen Technologies


Suitable for both technical and non-technical personnel, this book provides practical, expert-driven information on modern sensors for hydrogen and other gases as well as physical parameters essential for safety and process control in hydrogen technologies. It illustrates how sensing technologies can ensure the safe and efficient implementation of the emerging global hydrogen market. The authors also offer guidance on the development of new sensors based on the analysis of the capabilities and limitations of existing sensors with respect to current performance requirements.

CRC Press
Market: Electrical Engineering
December 2015: 254 x 178: 387pp
Hb: 978-1-466-50656-5: £55.00
ebook: 978-1-466-50655-8
* For full contents and more information, visit: www.crcpress.com/9781466506565

Methods & Instrumentation 89
Structural Health Monitoring Technologies and Next-Generation Smart Composite Structures
Edited by Jayantha Ananda Epaarachchi, University of Southern Queensland, Toowoomba, Australia and Gayan Chanaka Kahandawa, University of Southern Queensland, Toowoomba, Australia
Series: Composite Materials
Increased use of composite materials in engineering fields such as aerospace, energy, and civil infrastructures has led to concerns over composite material failures, leading to a need for smart/intelligent composite structures that are able to self-diagnose and self-heal. Advances in applied research in structural health management and smart composite structure fields are illustrated along with long-term health of composite structures, principles of health monitoring, damage evaluation, data analysis, and decision-making algorithms, implementation of health monitoring systems, present and future challenges.
CRC Press
Market: Materials Science/Structural Engineering
May 2016: 235 x 156: 576pp
Hb: 978-1-482-22691-1: £127.00
eBook: 978-1-482-22692-8
* For full contents and more information, visit: www.crcpress.com/9781482226911

Using Forensic DNA Evidence at Trial
A Case Study Approach
Jane Moira Taupin, Greensboro, Victoria, Australia
Forensic DNA analysis is more important than ever, and a trial case study approach is the best way for attorneys to understand its application in the courtroom. The cases presented are chosen carefully to specifically highlight each of the concepts, methods, and interpretations used in DNA analysis, including the strengths and limitations of DNA evidence. The text is designed for the criminal lawyer but written in an accessible manner for the non-scientific reader while providing lively and sometimes bizarre cases.
CRC Press
Market: Forensics & Criminal Justice
March 2016: 235 x 156: 184pp
Pb: 978-1-482-25581-2: £38.99
eBook: 978-1-482-25582-9
* For full contents and more information, visit: www.crcpress.com/9781482255812

Wireless Medical Systems and Algorithms
Design and Applications
Edited by Pietro Salvo, University of Pisa, Italy and Miguel Hernandez-Silveira
Series: Devices, Circuits, and Systems
The new trend in medicine is to minimize the hospitalization of patients while providing them with quality care and timely treatments. A possible solution to reduce the healthcare costs while keeping constant the level of medical services and patient care is the use of implantable devices for wirelessly monitoring physiological parameters in real time. This book describes new technologies for the continuous monitoring of patient health conditions by implantable wireless devices and topics such as biocompatibility concerns and micro-electro-mechanical systems (MEMS).
CRC Press
Market: Electrical Engineering
February 2016: 235 x 156: 287pp
Hb: 978-1-498-70076-4: £127.00
eBook: 978-1-498-70078-8
* For full contents and more information, visit: www.crcpress.com/9781498700764
Advances in Biodegradation and Bioremediation of Industrial Waste

Edited by Ram Chandra, Indian Institute of Toxicology Research, Lucknow
This book reviews pollutants generated by agriculturally contaminated soil and plastic waste from a variety of industries. The author details rhizobacteria, describes the latest knowledge regarding the biodegradation of tannery and textile waste, and reviews the role of microbes in plastic degradation, bioremediation and recycling of urban waste. The book will certainly help readers who have an interest in the fields of environment, microbiology, industrial engineering, biotechnology, botany, and agricultural sciences.

CRC Press
Market: Environmental Engineering
March 2015: 235 x 156: 477pp
Hb: 978-1-498-70054-2: £108.00
ebook: 978-1-498-70055-9
* For full contents and more information, visit: www.crcpress.com/9781498700542

Antimicrobials
Synthetic and Natural Compounds

Edited by Dharumadurai Dhanasekaran, Bharathidasan University, Tiruchirapalli, Tamil Nadu, India, Nooruddin Thajuddin, Bharathidasan University, Tiruchirapalli, Tamil Nadu, India, and A. Panneerselvam, A.V.V.M. Sri Pushpam college, Poonodi, Tamil Nadu, India
This book explores an important topic: finding and applying alternative means of pathogenic control and treatment via natural sources in the face of increasing numbers of drug-resistant bacteria. It summarizes latest research regarding natural antimicrobial compounds derived from various plant, sponge, and other microbial sources. With collected contributions from international subject experts, it focuses primarily on natural products as a source of bioactive compounds that may be active against multidrug-resistant pathogens, providing an alternative to established antibiotics in controlling infectious diseases.

CRC Press
Market: Life Science
December 2015: 254 x 178: 524pp
Hb: 978-1-498-71562-1: £99.00
ebook: 978-1-498-71563-8
* For full contents and more information, visit: www.crcpress.com/9781498715621

Antibiotics and Antibiotic Resistance in the Environment

Carlos F. Amábile-Cuevas, Fundacion Lusara, Mexico City, Mexico
The presence of antibiotics, antibiotic resistance genes, and antibiotic resistant bacteria in the environment is a cause of growing worldwide concern, as it reveals the extensive impact of antibiotic abuse and other human-related pressures upon microbes. The field of detecting and measuring resistance in the environment has rapidly evolved to a systematic search of organisms and genes. This book will review the available evidence and hypotheses on where antibiotic resistance is coming from and for how long it has been there. Further, it will discuss involved maintenance pressures, resistance spread, traits and laboratory and in-silico strategies to further investigate antibiotic resistance.

CRC Press
Market: Water Science, Technology and Engineering
January 2016: 246x174: 126pp
Hb: 978-1-138-02839-5: £63.99
ebook: 978-1-315-67941-9
* For full contents and more information, visit: www.crcpress.com/9781138028395

Biofilm Control and Antimicrobial Agents

Edited by S. M. Abu Sayen, Shahjalal University of Science and Technology, Sylhet, Bangladesh
This new book highlights some of the exciting research that has recently been done in the important and far-ranging field of biofilms and microbial agents. It discusses antimicrobial agents in relation to biofilm control and resistance. The book also introduces biofilm formation and mitigation strategies. It helps explores long-term solutions to the challenges imposed by biofilms.

Apple Academic Press
Market: Biological Sciences
February 2014: 229 x 152: 416pp
Hb: 978-1-7718-8002-2: £82.00
ebook: 978-1-482-23949-2
* For full contents and more information, visit: www.crcpress.com/9781771880022

Bioluminescent Microbial Biosensors
Design, Construction, and Implementation

Edited by Gerald Thouand, University of Nantes, La Roche-sur-Yon, France and Robert S. Marks
Series: Pan Stanford Series on the High-Tech of Biotechnology
This book describes the design and the use of bioluminescent biosensors. It introduces beginners and experienced researchers starting in the microbiological biosensor domain to the practical aspects of building a luminescent microbial biosensor. It is also a source of information about applications that use microbial cells. Each chapter focuses as far as possible on the technological conception of the presented biosensor with a clear demonstration of the issues in the design and how to reach the proof of concept. The book is divided into three practical sections facilitating the reader to easily access the information.

Pan Stanford
Market: Life Sciences
November 2015: 229 x 152: 236pp
Hb: 978-9-814-61366-8: £95.00
ebook: 978-9-814-61366-8
* For full contents and more information, visit: www.crcpress.com/9789814613661
**Biosurfactants**

**Production and Utilization—Processes, Technologies, and Economics**

Edited by Naim Kosaric, University of Western Ontario, London, Canada and Fazilet Vardar Sukan, Ege University, Izmir, Turkey

Biosurfactants can successfully replace and augment the properties of chemically synthesized surfactant-active agents. This book contains specialty chapters dealing with methods for production of biosurfactants on a laboratory and industrial/commercial scale. It presents novel and proven applications of biosurfactants. The new edition is aimed at actual production and applications of biosurfactants in modern biotechnology, reflecting the advances made since the publication of the first edition. A special chapter is devoted to the overview and evaluation of specific selected patents relating to biosurfactants.

CRC Press
Market: Biotechnology
November 2014: 254 x 178: 389pp
Hb: 978-1-466-59468-5: £127.00
ebook: 978-1-466-59469-2

* For full contents and more information, visit: www.crcpress.com/9781466594685

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**Dairy Microbiology and Biochemistry**

**Recent Developments**

Edited by Barbaros Ozer, Ankara University, Turkey and Gulsun Akdemir-Evrendilek, Abant Izzet Baysal University, Bolu, Turkey

This book covers recent developments in types, classifications, and genetic traits of indigenous milk microorganisms and dairy starter cultures. It also discusses biochemical reactions taking place in different dairy products and microorganisms involved in such reactions. The text provides strategies for rapid detection of pathogenic and non-pathogenic organisms in milk and milk products and safety systems for dairy processing. It concludes with a discussion of the effects of non-thermal processing technologies on milk microorganisms and biochemical reactions in milk products.

CRC Press
Market: Food Microbiology
July 2014: 235 x 156: 464pp
Hb: 978-1-482-23502-9: £111.00
ebook: 978-1-482-23504-3

* For full contents and more information, visit: www.crcpress.com/9781482235029

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**Dairy Microbiology**

**A Practical Approach**

Edited by Photis Papademas, Cyprus University of Technology, Limassol

The objective of this book is to provide a scientific background to dairy microbiology by re-examining the basic concepts of general food microbiology and the microbiology of raw milk while offering a practical approach to the following aspects: well-known and newfound pathogens that are of major concern to the dairy industry. The book will provide dairy professionals and students alike the latest information on this vast topic.

CRC Press
Market: Food Science & Technology
December 2014: 235 x 156: 254pp
Hb: 978-1-482-29867-3: £79.99
ebook: 978-1-482-29868-0

* For full contents and more information, visit: www.crcpress.com/9781482298673

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**Ectomycorrhizal Symbioses in Tropical and Neotropical Forests**

Edited by Amadou M. Bâ, Krista L. McGuire and Abdala G. Diédhiou

Ectomycorrhizal symbiosis plays a major role in biodiversity and stability of ecosystems in tropical forests. It is a research imperative in tropical and neotropical forest ecosystems because they contain ecologically and economically important tree species. This book provides an overview of the knowledge of ECM symbioses in tropical and neotropical ecosystem forests. The contents address diversity and function of ectomycorrhiza associated with forest plants, impacts of ectomycorrhiza on plant diversity and composition, regeneration and dynamics of ecosystems, biomass production in forestry, and adaptation of ectomycorrhiza.

CRC Press
Market: Environmental Science
February 2014: 235 x 156: 300pp
Hb: 978-1-466-59669-6: £121.00
ebook: 978-1-466-59670-2

* For full contents and more information, visit: www.crcpress.com/9781466596696

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**Entrepreneurship in Chemistry and the Life Sciences**

Edited by Henry Lutz Ehrlich, Rensselaer Polytechnic Institute, Troy, New York, USA, Dianne K. Newman, California Institute of Technology, Pasadena, USA and Andreas Kappler, Eberhard-Karls-University Tuebingen, Center for Applied Geosciences (ZAG), Germany

This new edition surveys various aspects of geomicrobiology, including the microbial role in elemental cycling and in the formation and degradation of minerals and fossil fuels. Unlike the previous edition, many expert contributors besides the editors have been included, providing added depth to topics and broadening the overall insights. The new breadth of scope and possible applications in agriculture, forestry, aquaculture, marine science, the metals industry, and more that this book presents make it a must-have source in geomicrobiology.

CRC Press
Market: Life Science
October 2015: 254 x 178: 635pp
Hb: 978-1-466-59240-7: £121.00
ebook: 978-1-466-59241-4

* For full contents and more information, visit: www.crcpress.com/9781466592407
2nd Edition • TEXTBOOK • NEW EDITION

Environmental Microbiology for Engineers, Second Edition

Volodymyr Ivanov, Iowa State University, Ames, USA; Nanyang Technological University, Singapore

This book enables engineering students to understand how microbiology can be applied to environmental and civil engineering research and practical applications. Written specifically for senior undergraduate to graduate-level civil and environmental engineering students, the textbook encompasses both fundamental and applied principles and covers topics such as the microbiology of water, wastewater, soil and air biotreatment systems used in environmental and civil engineering. This new, updated edition adds a new chapter on construction biotechnology, as well as a new quiz and tutorial questions.

CRC Press
Market: Environmental Science
November 2015: 235 x 156: 471pp
Hb: 978-1-498-70123-5: £82.00
ebook: 978-1-498-70124-2
* For full contents and more information, visit: www.crcpress.com/9781498701235

Health and the Gut

The Emerging Role of Intestinal Microbiota in Disease and Therapeutics

Edited by William Olds, Yale University, New Haven, Connecticut, USA

The study of the intestinal ecosystem of bacteria in the human gut—the gut microbiome—is a new field that is rapidly evolving. This book serves as an introduction to some of the new and exciting research that is being done in this field. Edited by a researcher from Yale University, Health and the Gut: The Emerging Role of Intestinal Microbiota in Disease and Therapeutics is an authoritative and easy-to-use reference for both researchers in the field and those who wish to gain more information about the impact of gut microbiota on human health.

Apple Academic Press
Market: Medicine
August 2014: 229 x 152: 410pp
Hb: 978-1-771-88072-5: £95.00
ebook: 978-1-498-70126-6
* For full contents and more information, visit: www.crcpress.com/9781771880725

Holistic Approaches to Infectious Diseases

Edited by Joshy K. S., Mahatma Gandhi University, Kottayam, Kerala, India; Ann George, Government Medical College, Kottayam, India; Mathew Sebastian, Elisabethinen Hospital, Klagenfurt, Austria; Oluwatosi Samuel Oluwafemi, University of Johannesburg, South Africa and Sabu Thomas, Mahatma Gandhi University, Kottayam, India

This book takes a holistic approach to the prevention and control of infectious diseases from enteric pathogens, covering different concepts and approaches to address these challenging diseases, with special emphasis on HIV and AIDS. It examines several different approaches, such as ayurvedic, bioinformatic, and fungal- and metal-based treatment of diseases in the first section. The remaining chapters focus on various approaches specifically to HIV and AIDS, one of the most challenging infectious disease known to mankind. The book also discusses recent trends in HIV and AIDS research, ongoing treatments, case studies, and major achievements.

Apple Academic Press
Market: Healthcare
January 2016: 235 x 156: 285pp
Hb: 978-1-771-88312-2: £89.00
ebook: 978-1-771-88313-9
* For full contents and more information, visit: www.crcpress.com/9781771883122

Human Respiratory Viral Infections

Edited by Sunit K. Singh, Molecular Biology Unit, Faculty of Medicine, Institute of Medical Sciences, Banaras Hindu University (BHU), Varanasi, India

Using a multidisciplinary approach, this book sets the level between the definitive reference work and an essential clinical manual. Exploring recent advances in human respiratory viral research, the text builds on the basic sciences of epidemiology, virology, and immunology to cover clinical diagnosis, mechanism of pathogenesis, manifestations of disease, impact, treatment, and management strategies. It reviews all the major human respiratory viral infections and describes the anatomy of the respiratory system. It also discusses risk factors associated with incidence of respiratory viral infections in different occupational and environmental settings.

CRC Press
Market: Infectious Diseases
June 2014: 254 x 178: 698pp
Hb: 978-1-466-58321-4: £108.00
ebook: 978-1-466-58322-1
* For full contents and more information, visit: www.crcpress.com/9781466583207

Integrated Virus Detection

Charles H. Wick, Edgewood Chemical Biological Center, Aberdeen Proving Ground, Maryland, USA

This book describes a technology capable of detecting many viruses at the same time using the Integrated Virus Detection System. The book describes this technology and provides many examples including a chapter on viruses found in honeybees with examples of seasonal variation. This straightforward technology detects known, unknown, and mutated viruses collected from environmental and other complex biological samples. It is especially useful to virologists and microbiologists interested in virus detection, especially in situations where many viral types may coexist.

CRC Press
Market: Life Science
November 2014: 235 x 156: 255pp
Hb: 978-1-482-20005-5: £72.99
ebook: 978-1-482-20007-9
* For full contents and more information, visit: www.crcpress.com/9781482200055

Intestinal Microbiota in Health and Disease

Modern Concepts

Edited by Eduardo J. Schifffrin, Nestle Research Center, Vevey, Switzerland; Philippe Marteau, Denis Diderot Paris 7 University, France and Dominique Brassart, Nestlé Nutrition, Vaud, Switzerland

Now considered an organ with defensive and metabolic capabilities, the intestinal microbiota plays a major role in the local host immune system development and education. It contributes to the generation of a homeostatic balance characterized by the capacity to react against pathogens while remaining hyperresponsive/tolerant against commensals. This homeostatic response depends on bacteria and bacterial product sensing by innate immune cells and their molecular asset at the intestinal mucosa. This book captures the enormous progress that has been accomplished in this field in recent years.

CRC Press
Market: Nutraceuticals and Functional Foods
February 2014: 235 x 156: 344pp
Hb: 978-1-482-22676-8: £111.00
ebook: 978-1-482-22677-5
* For full contents and more information, visit: www.crcpress.com/9781482226768
**Laboratory Biorisk Management**  
Biosafety and Biosecurity  
Edited by Reynolds M. Salerno, Sandia National Labs, Albuquerque, New Mexico, USA and Jennifer Gaudioso, Sandia National Laboratories, Albuquerque, New Mexico, USA  
Setting the stage for a substantively different approach for managing the risks of working with biological agents in laboratories, this book defines biorisk management and explains how to implement it. The basis for this new paradigm is a three-pronged, multidisciplinary model of assessment, mitigation, and performance (the AMP model). The application of the methodologies, criteria, and guidance outlined in this book will reduce the risk of laboratories becoming the sources of infectious disease outbreaks. It will also significantly improve the safety and security of laboratories that work with infectious diseases.

CRC Press  
Market: Life Science  
May 2015: 235 x 156: 264pp  
Hb: 978-1-466-55396-5, £82.00  
ebook: 978-1-466-59365-7  
* For full contents and more information, visit: www.crcpress.com/9781466553965

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**Life Chemistry Research**  
Biological Systems  
Edited by Roman Joswik, Military Institute of Chemistry and Radiometry, Warsaw, Poland, Gennady E. Zaikov, Kazan National Research Technological University, Russia and A. K. Haghi, University of Ottawa, Canada  
This volume contains a collection of topical chapters that promote interdisciplinary approaches to biological systems, focusing on fundamental and relevant connections between chemistry and life. Included are studies and experiments as well as invited lectures and notes by prominent leaders on a wide variety of topics in biology and biochemistry. By describing the complementary nature of chemistry and biology, the book presents the biological processes in detailed chemical terms, providing a fascinating look into the emerging field of chemical biology.

Apple Academic Press  
Market: Life Sciences  
May 2015: 235 x 156: 350pp  
Hb: 978-1-771-88068-8, £95.00  
ebook: 978-1-498-71422-8  
* For full contents and more information, visit: www.crcpress.com/9781771880688

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**Manual of Security Sensitive Microbes and Toxins**  
Edited by Dongyou Liu, RCPA Biosafety QAP, New South Wales, Australia  
This book is an authoritative and comprehensive review of security sensitive microbes (viruses, bacteria, fungi, and parasites) and toxins, with an emphasis on the state of the art in the field. Written by experts in the field, the chapters present authoritative reviews, each one covering a single microbe or toxin with respect to its classification, biology, epidemiology, pathogenesis, identification, diagnosis, treatment, and prevention. The chapters also discuss the limitations of our current knowledge and challenges relating to improved detection and control of the microbe or toxin.

CRC Press  
Market: Biological Sciences  
April 2014: 279 x 216: 884pp  
Hb: 978-1-466-55396-5, £159.00  
ebook: 978-1-466-55339-6  
* For full contents and more information, visit: www.crcpress.com/9781466553965

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**Medical Mycology**  
Current Trends and Future Prospects  
Edited by Mehdi Razaghi-Abyaneh, Pasteur Institute of Iran, Tehran, Masoomeh Shams-Ghaforkhil, Tarbiat Modares University, Tehran, Iran and Mahendra Rai, SGB Amravati University, Maharashtra, India  
The identification of medically important fungi is an important area of study that warrants further research. The use of traditional and molecular methods of identification provides new insights into differentiation of species and ultimately the line of treatment can be determined. This book covers a diverse group of medically important fungi and diseases, including common dermatophytes, onychomycoses, Coccidiomycosis, Paracoccidiomycosis, Mycotic keratitis, Sporotrichosis, Histoplasmosis and determination of identity of medically important fungi by using modern techniques such as PCH and the use of MALDI-TOF as a rapid and new approach in fungal diagnosis and differentiation.

CRC Press  
Market: Medicine  
August 2015: 235 x 156: 442pp  
Hb: 978-1-498-71421-1, £89.00  
ebook: 978-1-498-71422-8  
* For full contents and more information, visit: www.crcpress.com/9781498714211

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**Microbiology for Minerals, Metals, Materials and the Environment**  
Edited by Abhilash, CSIR - National Metallurgical Lab, India, B. D. Pandey, CSIR - National Metallurgical Lab, India and K. A. Natarajan, Indian Institute of Technology, India  
This book disseminates the interdisciplinary relationship, some explored and some yet to be, among microbiology and the inorganic world. It studies the genesis of microbiology in the metal world, the various physiological aspects behind their existence in such a turbulent environment, their applications in the mineral sector, metal extraction, and material synthesis. A major part of this book emphasizes the importance of microbes in environmental remediation in the mining industries from core deep ground sample processing to utilization of discarded raw materials, and synthesizing products.

CRC Press  
Market: Environmental Engineering  
February 2015: 235 x 156: 608pp  
Hb: 978-1-482-25729-8, £127.00  
ebook: 978-1-482-25730-4  
* For full contents and more information, visit: www.crcpress.com/9781482257298

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**Microbial Biotechnology**  
Technological Challenges and Developmental Trends  
Edited by Bhima Bhukya, Osmania University, Hyderabad, India and Anjana Devi Tangutur, Council of Scientific and Industrial Research-Indian Institute of Chemical Technology (CSIR-IICT), Hyderabad, India  
This book takes an interdisciplinary look at technical challenges and recent developmental trends in microbial biotechnology. It covers an avalanche of new information available through research by focusing on a broad spectrum of issues on different microorganisms and their recent applications and implications in agriculture, soil science and forestry, industry, and public health and medicine. Topics include organic chemistry, biomass conversion, optimal production processes for different microbes, screening methods, and application of omics approaches to provide a deeper understanding of the microbial-based new and emerging products, trends, processes, and technologies.

Apple Academic Press  
Market: Life Sciences  
February 2016: 235 x 156: 450pp  
Hb: 978-1-771-88332-0, £99.00  
ebook: 978-1-771-88333-7  
* For full contents and more information, visit: www.crcpress.com/9781771883320
Phage Therapy

Oleg Tolmachov, Imperial College, London, UK and Tanya Tolmachova, Imperial College, London, UK

Phage therapy is the treatment of diseases caused by bacterial infections, employing bacteriophages as anti-bacterial agents. This healing strategy is getting its second wind driven by advances in robotic screening and nanotechnology. The book provides comprehensive coverage of the topic with the currently available data exposed and critically evaluated. It examines bacterial receptors and phage anti-receptors from the point of view of development of effective therapeutic phage cocktails, and considers the cytotoxicity of phages and immune reaction issues. The book also discusses possible avenues for the commercialization of phage therapy technology and its ethical and legal aspects.

CRC Press
Market: Clinical Pharmacology
December 2015: 235 x 156: 150pp
Hb: 978-1-466-59009-0: £49.99
* For full contents and more information, visit: www.crcpress.com/9781466590090

Sarcocystosis of Animals and Humans, Second Edition

J. P. Dubey, USDA/ARS, Beltsville, Maryland, USA, R. Calero-Bernal, Postdoctoral Fellow, Animal Parasitic Diseases Laboratory, USDA/ARS, Beltsville, MD, USA, R. B. Fayer, Environmental Microbial and Food Safety Laboratory, USDA/ARS, Beltsville, MD, USA

Written by the authors who pioneered studies of Sarcocystosis of domestic animals, this new edition provides a current and comprehensive review of Sarcocystis and the infections it causes in animals and humans. Sarcocystis is one of the most prevalent parasites of livestock and also infects many wild mammals, birds and humans. The book reviews the history, structure, life cycle, pathogenesis, lesions, clinical signs, diagnosis, immunity, epidemiology, treatment, prevention, and control of Sarcocystosis.

CRC Press
Market: Life Science
October 2015: 254 x 178: 481pp
Hb: 978-1-498-71012-1: £89.00
* For full contents and more information, visit: www.crcpress.com/9781498710121

Probiotic Bacteria

Fundamentals, Therapy, and Technological Aspects

Edited by J. Paulo Sousa e Silva and Ana Cristina Freitas, Instituto Piaget – ISET, Viseu, Portugal

Compiled by an expert editorial team with noteworthy and remarkable experience, this book covers technological aspects related to probiotics, not only in terms of delivery modes but also in terms of protection technologies. It includes discussions of their therapeutic and physiologic implications and benefits, and provides a contemporary update and a holistic review of the topic. It focuses on the technological aspects of probiotic products, brings together the information needed for their successful development, and examines the international picture regarding regulatory issues.

Pan Stanford
Market: Microbiology
April 2014: 229 x 152: 320pp
Hb: 978-9-814-41162-2: £95.00
ebook: 978-9-814-41163-9
* For full contents and more information, visit: www.crcpress.com/9789814411622
Optical Nanoscopy and Novel Microscopy Techniques

Edited by Peng Xi, Peking University Hospital, Beijing, China

Many new methods in light and super-resolution microscopy have been developed over the last few years. This edited volume overviews the latest advances in microscopy, complete with experimental methods and data analysis of the results. Each chapter begins with a brief description of the principles of the technique for clarity and concludes with a set of problems. Cutting-edge microscopy techniques presented include STED, PALM/STORM, and light sheet microscopy.

Physics of Schottky Electron Sources

Theory and Optimum Operation

Merijntje Bronsgeest

This book comprehensively covers the theoretical and practical aspects of the Schottky electron emitter. The main questions that will be addressed in this book are: What is the Schottky electron emitter? How does it work? and How do its properties affect the performance of electron beam equipment? The author focuses on the direct link between the operating conditions of the source and the properties of the beam at the target level.
Big Data Analysis for Bioinformatics and Biomedical Discoveries

Edited by Shui Qing Ye, University of Missouri–Kansas City and The Children’s Mercy Hospital, USA
Series: Chapman & Hall/CRC Mathematical and Computational Biology

This book is a practical guide to the nuts and bolts of Big Data, enabling readers to quickly and effectively harness the power of Big Data to make groundbreaking biological discoveries, carry out translational medical research, and implement personalized genomic medicine. Contributing to the NIH Big Data to Knowledge (BD2K) initiative, the book enhances readers’ computational and quantitative skills so that they can exploit the Big Data being generated in the current omics era.

Chapman and Hall/CRC
Market: Computer Science & Engineering
January 2016: 235 x 156: 276pp
Hb: 978-1-49872452-4: £76.99
eBook: 978-1-46657191-4
* For full contents and more information, visit: www.crcpress.com/9781498724524

4th Edition
Chemical Reagents for Protein Modification, Fourth Edition

Roger L. Lundblad, Lundblad Biotechnology, Chapel Hill, North Carolina, USA

A comprehensive review of reagents used for the chemical modification of proteins, the fourth edition represents a major revision. The completely updated text is substantially larger and includes five new chapters: Alkylating Agents, Acylating Agents, Nitration and Nitrosylation, Oxidation, and Modification of Proteins with Reducing Agents. The format has been markedly revised, presenting information based on the chemical nature of the modifying material and on the amino acid residue modified. Much of the information is in tabular form to enable the rapid location of cited material.

CRC Press
Market: Chemistry
July 2014: 254 x 178: 684pp
Hb: 978-1-46657190-7: £123.99
eBook: 978-1-466-57951-4
* For full contents and more information, visit: www.crcpress.com/9781466571907

Cyclic Nucleotide Signaling

Edited by Xiaodong Cheng, University of Texas Health Science Center, Houston, USA
Series: Methods in Signal Transduction Series

Showcasing the recent progresses of the field, Cyclic Nucleotide Signaling covers the major tools and methodologies used in various areas of research. The majority of the chapters are protocol oriented, with the goal of providing clear directions for laboratory use. Students and investigators new to the field will find this book particularly informative, as will scientists already actively researching nucleotide signaling.

CRC Press
Market: Life Science
May 2015: 235 x 156: 288pp
Hb: 978-1-48223556-2: £95.00
eBook: 978-1-48223557-9
* For full contents and more information, visit: www.crcpress.com/9781482235562

Diversity of Selenium Functions in Health and Disease

Edited by Regina Brigelius-Flohe, German Institute of Human Nutrition, Nuthetal and Helmut Sies
Series: Oxidative Stress and Disease

This book brings together the accumulated evidence regarding selenium biochemistry and trace element caused carcinogenesis. After the introduction to be written by Gerry Combs, five sections are planned. The first section is devoted to how selenium is integrated into selenoproteins. Next is a section on selenium compounds with individual functions. Dual functions are dealt with next followed by a section devoted to unexpected links to selenium such as with diabetes. The final section deals with polymorphisms and mutations in gene of selenoproteins. The book should appeal to biochemists, physiologists, nutritionists, and clinical researchers, especially those planning clinical trials.

CRC Press
Market: Chemistry
August 2015: 235 x 156: 430pp
Hb: 978-1-46657190-7: £165.00
eBook: 978-1-466-57951-4
* For full contents and more information, visit: www.crcpress.com/9781466579507

Foodborne Viral Pathogens

Grant Hansman and Peter White
Series: Food/Microbiology

Unlike foodborne pathogenic bacteria, little is published on food viruses and their research. This book is devoted to the study of molecular biology of foodborne viral pathogens and is divided into two sections. The first section outlines key molecular biological techniques that have been applied to foodborne viral pathogens research. The second section covers individual foodborne viral pathogens in relation to their classification, morphology, genome structures, biology, epidemiology, clinical features, pathogenesis, diagnosis, treatment, and prevention, among others.

CRC Press
Market: Food & Culinary Science
August 2016: 254 x 178: 800pp
Hb: 978-1-46657950-7: £165.00
eBook: 978-1-466-57951-4
* For full contents and more information, visit: www.crcpress.com/9781466579507

2nd Edition - TEXTBOOK
Forensic Biology, Second Edition

Richard LI, John Jay College of Criminal Justice, New York, New York, USA

Focusing on forensic serology and forensic DNA analysis, this book introduces students to the methods and techniques utilized by forensic biology laboratories. Using schematic illustrations to clarify concepts, this second edition explores the latest DNA profiling tools, contains three new chapters, and provides 200 new images. It also includes new tables for many chapters. Covering the full scope of forensic biology, the book uses an accessible style designed to enhance students’ education and training so they are prepared, both in the laboratory and in the field.

CRC Press
Market: Forensic Science/Biology
March 2015: 254 x 178: 567pp
Hb: 978-1-43988970-1: £57.99
eBook: 978-1-439-88972-5
* For full contents and more information, visit: www.crcpress.com/9781439889701
Glutamine
Biochemistry, Physiology, and Clinical Applications
Edited by Dominique Meynil-Denis, Unité de Nutrition Humaine, St Genès Champanelle, France

Glutamine is a non-essential amino acid that fulfills many key roles in metabolism and cell/tissue function. This book examines recent advances in our understanding of the biochemistry of glutamine as well as molecular and cellular aspects of glutamine metabolism and action. It also reviews the various functions of this amino acid other than its function as an energy substrate. Finally, the importance of glutamine in critical illness and its role in almost 100 color illustrations.

CRC Press
June 2016: 235 x 156: 320pp
Hb: 978-1-482-23429-9: £82.00
ebook: 978-1-466-58023-7
* For full contents and more information, visit: www.crcpress.com/9781466580220

Interactive Probiotics
Edited by Enrica Pessione, Università di Torino, Italy

This book underlines the importance of reciprocal interactions between probiotics and humans in terms of stress induction, epigenetic control of cellular responses, oxidative status, bioactive molecules biosynthesis, moonlighting proteins secretion, endogenous toxin neutralization, and several other biological functions. It explores how these responses can affect metabolism and metabolic-related disorders, gutbrain axis balance, mood, inflammatory, allergic and anti-infective reactions, cancer, and ageing. The book explores how probiotics create a dynamic and "fluid" network of signals able to control the balance between healthy and altered human status.

CRC Press
Market: Nutrition
February 2014: 235 x 156: 274pp
Hb: 978-1-466-57555-4: £159.00
ebook: 978-1-466-57556-1
* For full contents and more information, visit: www.crcpress.com/9781466575554

Human Longevity
Omega-3 Fatty Acids, Bioenergetics, Molecular Biology, and Evolution
Raymond C. Valentine, Professor Emeritus, University of California at Davis, USA and David L. Valentine

Human cells are protected from the ravages of aging by membrane oxidation introduced in this book. The book proposes a unified concept in which aging cells faced with declining energy production by mitochondria and the relatively high cost of protecting membranes against oxidation are triggered by energy stress to activate programmed cellular death. It includes case histories illustrating the duality of polyunsaturated membranes in aging and longevity. It also explains the relationship between membrane unsaturation and longevity leading to a unified concept of aging.

CRC Press
Market: Biochemistry
September 2014: 235 x 156: 259pp
Hb: 978-1-466-59486-9: £111.00
ebook: 978-1-466-59487-6
* For full contents and more information, visit: www.crcpress.com/9781466594869

In Search of Vikings
Interdisciplinary Approaches to the Scandinavian Heritage of North-West England
Edited by Stephen E. Harding, University of Nottingham, UK, David Griffiths, University of Oxford, UK and Elizabeth Royles, Grosvenor Museum, Cheshire West and Chester, UK

This book presents a collection of papers from experts in a broad range of disciplines, including history, archaeology, genetics, and linguistics, to provide a detailed understanding of the Vikings in peace and in war. It focuses on one particularly exciting area of the Viking world, namely the north-west section of England, where they are known to have settled in large numbers. The 12 integrated studies in this book are designed to reinvigorate the search for Vikings in this crucial region and to provide must-reading for anyone interested in Viking history.

CRC Press
Market: Biological Science
December 2014: 254 x 178: 204pp
Hb: 978-1-466-58022-0: £119.00
ebook: 978-1-482-20757-6
* For full contents and more information, visit: www.crcpress.com/9781482207576

TEXTBOOK
Introduction to Experimental Biophysics - A Laboratory Guide
Jay L. Nadeau, McGill University, Montreal, Canada

A companion to the author’s highly praised textbook, this manual presents wet lab methods for courses in biophysics or molecular biology. Tested in a pedagogical setting, the experiments follow a logical progression beginning with a DNA construct. The book starts with the basics of molecular cloning: amplifying and purifying plasmid, plasmid mapping, and using restriction enzymes. Later experiments deal with more advanced techniques, such as the synthesis and characterization of quantum dots and gold nanoparticles, protein crystalization, and spectroscopic techniques.

CRC Press
Market: Biochemistry / Biophysics
April 2015: 218 x 140: 197pp
Hb: 978-1-466-55766-6: £119.00
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TEXTBOOK

Introduction to Experimental Biophysics (Set)
Textbook and Lab Manual

Jay Nadeau, McGill University, Montreal, Quebec, Canada
A practical companion for physical scientists seeking to move into wet laboratory experiments and biological research areas, this set provides a firm footing in basic terminology and concepts. The text begins with the simpler, essential methods and then builds gradually to more advanced techniques. Written at a level that assumes no previous background in biology, the book is organized to follow a logical experimental progression. This structure allows readers to follow the steps involved in the production of nucleic acids and proteins and the different levels of purification required for each type of analysis.

CRC Press
Market: Biophysics
May 2015: 254 x 178: 872pp
Hb: 978-1-498-73972-6: £82.00
* For full contents and more information, visit: www.crcpress.com/9781498739726

Investigations in Yeast Functional Genomics and Molecular Biology

Edited by Matthew Eckwahl, Yale University, New Haven, Connecticut, USA
This book examines conserved pathways mediating cell cycle progression and cell polarity establishment. It includes examples of yeast, regulatory circuits, and feedback regulation, with emphasis on system-wide approaches. It also covers protein interaction networks and trait locus analysis and presents methods and challenges in comparative genomics analysis and evolutionary genetics.

Apple Academic Press
Market: Molecular Biology
February 2014: 229 x 152: 412pp
Hb: 978-1-771-88010-7: £69.00
ebook: 978-1-482-24096-2
* For full contents and more information, visit: www.crcpress.com/9781771880107

Lipid Oxidation in Health and Disease

Edited by Corinne M. Spickett and Henry Jay Forman, University of Southern California, Los Angeles, USA
Series: Oxidative Stress and Disease
Lipid oxidation has long been regarded as a deleterious process responsible for lipid rancidity, loss of function, and generation of toxic products. However in recent years, research has also focused on the non-detrimental physiological and pathological effects of these chemical reactions. This book provides an up-to-date review of the role of oxidized lipid products in physiological and pathophysiological processes. Topics include the mechanisms of lipid oxidation, antioxidant defenses, lipid oxidation products, cell signaling, and the roles of oxidized lipids in specific diseases. The book also discusses drug targeting and the therapeutic potential of oxidized lipids.

CRC Press
Market: Life Science
March 2015: 235 x 156: 440pp
Hb: 978-1-482-20285-4: £89.00
ebook: 978-1-482-20286-1
* For full contents and more information, visit: www.crcpress.com/9781482202854

Living Matter
Algebra of Molecules

Valery V. Stcherbic and Leonid P. Buchatsky
This book provides a review of biochemistry as an algebra of molecules of living matter and utilizes Clifford algebras to discuss the basic biochemical processes of DNA replication, DNA transcription, RNA splicing and translation. Viral carcinogenesis is discussed in depth, specific attention is paid to the structural features of biomolecules that define a particular Clifford algebra, and useful examples of genetic information being transformed into Clifford algebras are provided.

CRC Press
Market: Computer Science & Engineering
December 2015: 235 x 156: 160pp
Hb: 978-1-482-21420-8: £76.99
ebook: 978-1-482-21422-2
* For full contents and more information, visit: www.crcpress.com/9781482214208

Molecular Mechanisms for Repair of Genetic Instabilities

Ishita S. Mehta, Ta Ta Institute of Fundamental Research, Mumbai, India and Basuthkar J. Rao, Tata Institute of Fundamental Research, Mumbai, India
This book is designed not only for the expert audience in DNA repair/recombination, but also for those curious about chromosomal dynamics and regulation in the context of cellular functions. It covers chromosomal damage and instabilities and chromosomal repair in relation to cell signaling, metabolism, developmental biology; chromosomal disorders, and diseases.

CRC Press
Market: Life Science
June 2016: 235 x 156: 300pp
Hb: 978-1-482-21422-2: £121.00
ebook: 978-1-482-21422-2
* For full contents and more information, visit: www.crcpress.com/9781482214208

Molecular Mechanisms of Skin Aging and Age-Related Diseases

Edited by Taihao Quan, University of Michigan Medical School, Ann Arbor, USA
Our skin changes as we age. It becomes thinner and loses fat, making it less plump and smooth. Clinically, aged skin is characterized by wrinkles, sagging, age spots and dryness. Emphasizing laboratory and clinical research, this book comprehensively describes the molecular mechanisms of human skin-aging and age-related skin diseases. This includes molecular understanding of the development of aging skin and its prevention as well as mechanisms-based clinical rejuvenation. The book also focuses on research to develop mechanisms-based anti-skin-aging products.

CRC Press
Market: Clinical Medicine
May 2016: 235 x 156: 380pp
Hb: 978-1-498-70466-4: £127.00
ebook: 978-1-498-70465-6
* For full contents and more information, visit: www.crcpress.com/9781498704649
**NanoCellBiology**

Multimodal Imaging in Biology and Medicine

Edited by Bhanu P. Jena and Douglas J. Taatjes

This book provides a comprehensive understanding of the discovery of a new cellular structure the “porosome,” which is the universal secretory machinery in cells; the protein assembly, biomineralization, and biomolecular interactions; the molecular evolution of protein structure; the use of magnetic nanoparticles for transformative application in medicine and therapy, and the new and novel imaging approach of electrical impedance spectroscopy in biology. It be used for college courses in nanomedicine, nano cell biology, advanced nanotechnology, and biotechnology at the undergraduate and graduate level.

Pan Stanford

**Reactive Oxygen Species in Biology and Human Health**

Edited by Shamim I. Ahmad, Nottingham Trent University, United Kingdom

Reactive oxygen species are highly reactive chemical elements that include among others, oxygen as a core species. A variety of ROS have been identified in biological systems. They are ubiquitously produced in the human body especially in mitochondria via a number of biochemical reactions. On one hand they play positive biological roles; but if high levels of ROS prevail, they can induce significant damage (also known as oxidative stress). Damage to cellular components plays significant roles in causing a variety of human diseases. This book will be a comprehensive review of reactive oxygen species, the mechanisms by which they are produced, and the role they play in various diseases.

CRC Press

**Viral Nanotechnology**

Edited by Yury Khudyakov and Paul Pumpens

This book presents a review of a rapidly developing field of viral nanotechnology in the context of immunology, virology, microbiology, chemistry, physics, and mathematical modeling. Viral nanotechnology is founded on the unexpected properties of viral nanoparticles. It emphasizes applications of viral nanotechnology to improving health and advancing material technologies. These applications include developing vaccines for prevention of disease, developing drugs and genetic therapies for treatment of disease, and developing diagnostic reagents and novel imaging technologies for detecting disease and infectious agents.

CRC Press

**Structural and Mediator Lipidomics**

Michel Lagarde, Nathalie Bernoud-Hubac, Celine Costaz, Frederic Carriere and Michel Guichardant

In this book, the authors present lipid molecular species, which have been well defined for their biological activities, whatever the biological system involves, with reference to the closely related structural lipids. The emphasize bioactive lipids issued from membrane lipids, especially polyunsaturated fatty acid derivatives produced through various oxygenation processes. They also cover enzymes associated with the production of these bioactive lipids and receptor proteins relating to their action.

EPFL Press

**Viking DNA**

The Wirral and West Lancashire Project

Stephen E. Harding, University of Nottingham, UK, Mark Jobling, University of Leicester, UK and Turi King

This book details a genetic survey that has taken place focusing on men from old families from Wirral and West Lancashire. These “Viking hot spots” in North West England exhibit many archaeological and historical features proving them to have had a clear Viking presence. The book explains—with the help of full color illustrations—what DNA is and how DNA methods can be used to probe both individual and population ancestry, and how information such as Henry VIII’s tax rolls can be used to help establish the volunteer base for specific regions of northern England.

CRC Press

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**Greenfield's Neuropathology, Ninth Edition - Two Volume Set**

Edited by Seth Love, MBChB PhD FRCP FRCPATH Professor of Neuropathology, Institute of Clinical Neurosciences, School of Clinical Sciences, University of Bristol, Southmead Hospital, Bristol, UK, Arie Perry, MD Professor of Pathology and Neurological Surgery, Director of Neuropathology Fellowship Training Program, University of California, San Francisco, USA, James Ironside, Western General Hospital, Edinburgh, UK and Herbert Budka, MD, Professor of Neuropathology, Consultant, Institute of Neurology, University Hospital Zurich, Zurich, Switzerland

The world’s leading neuropathology reference, this book comprehensively describes the pathological findings in neurological disease, their biological basis, and clinical manifestations. The book’s detailed advice on assessment and interpretation is based on clear descriptions of normal and abnormal molecular and cellular processes and function. The information is presented in an accessible way to readers in the clinical neurosciences and neuropathological findings are placed within the context of a broader diagnostic process. Readers have, over many decades, dipped into this standard-bearer of neuropathology, seeking definitive advice and instruction on all matters neuropathological.

CRC Press
April 2015: 279 x 216
Hb: 978-1-466-55341-5: £100.00
eBook: 978-1-466-55342-2: £100.00

* For full contents and more information, visit: www.crcpress.com/9781466553415

**Humanoid Robotics and Neuroscience**

Science, Engineering and Society

Edited by Gordon Cheng

Series: Frontiers in Neuroengineering Series

With contributions from prominent scientists, this volume presents a scientific understanding of humans with a view towards developing better-engineered systems and machines for society. It covers dexterous robotic hand control, humanoid vision and locomotion, motor control and learning of motor skills, and cognitive aspects of the humanoid robot. The book also discusses the impact of robotic systems and devices on society as a whole.

CRC Press
Market: Neurotechnology
December 2014: 235 x 156
Hb: 978-1-420-09366-7: £66.99
eBook: 978-1-482-22826-7: £44.99

* For full contents and more information, visit: www.crcpress.com/9781420093667

**Neurobiology of Chemical Communication**

Edited by Carla Mucignat-Caretta, University of Padova, Italy

Series: Frontiers in Neuroscience

Exploring the role of the chemical senses in mediating intraspecifuc communication, this volume examines the structure, anatomy, electrophysiology, and molecular biology of pheromones. It discusses how chemical signals work on different mammalian and non-mammalian species and includes chapters on insects, Drosophila honey bees, amphibians, mice, cats, and cattle. It also explores the controversial topic of human pheromones. An essential reference for students and researchers in the field of pheromones, this is also an ideal resource for those working on behavioral phenotyping of animal models and persons interested in the biology/ecology of the different species.

CRC Press
Market: Biological Sciences
February 2014: 235 x 156
Hb: 978-1-466-55341-5: £100.00
eBook: 978-1-466-55342-2: £100.00

* For full contents and more information, visit: www.crcpress.com/9781466553415

**Neurocine:**

When Film Meets Neurology

Elco F. M. Wijdicks, Mayo Clinic, Rochester, Minnesota, USA

This book summarizes the portrayal of major neurologic syndromes and clinical signs in cinema. More than 100 blockbuster and classic films are reviewed including Rain Man, My Left Foot, Million Dollar Baby, Awakenings, Pi, and Memento, as well as documentaries. Each chapter includes text boxes with film dialogue chosen to draw in the reader and highlight key themes. Rating each film’s accuracy, the book discusses nearly 50 neurology topics, explains them, and places them in a broader context. The book is accessible for all health care workers as well as the general public.

CRC Press
Market: Neurology
November 2014: 229 x 152
Hb: 978-1-482-22824-3: £25.99
eBook: 978-1-482-22827-4: £25.99

* For full contents and more information, visit: www.crcpress.com/9781482228267

**TEXTBOOK**

**Traumatic Brain Injury Rehabilitation**

The Lefaivre Rainbow Effect

Christine Lefaivre, Rainbow Rehabilitation Inc., Peachland, Canada

The Lefaivre Rainbow Effect is a groundbreaking treatment for those suffering from a traumatic brain injury. This textbook is the culmination of more than 25 years of successfully implementing this transformative treatment pioneered by the author. The book demonstrates how rehabilitation professionals, including occupational therapists, doctors, nurses, social workers, speech pathologists, and neuropsychologists, can use the Lefaivre Rainbow Effect in their practices to improve the therapeutic outcome for their clients. It discusses the dual role healthcare providers have of delivering care to maximize recovery, coupled with the necessity to submit medical legal reports to an adversarial system.

CRC Press
Market: Healthcare
August 2014: 235 x 156
Hb: 978-1-482-22824-3: £44.99
eBook: 978-1-482-22826-7: £44.99

* For full contents and more information, visit: www.crcpress.com/9781482228243

**Brain Neurotrauma**

Molecular, Neuropsychological, and Rehabilitation Aspects

Edited by Firas H. Kobieissy, University of Florida, Gainesville, USA

Series: Frontiers in Neuroengineering Series

With the contribution from more than one hundred CNS neurotrauma experts, this book provides a comprehensive and up-to-date account on the latest developments in the area of neurotrauma including biomarker studies, experimental models, diagnostic methods, and neurotherapeutic intervention strategies in brain injury research. It discusses neurotrauma mechanisms, biomarker discovery, and neurocognitive and neurobehavioral deficits. Also included are medical interventions and recent neurotherapeutics used in the area of brain injury that have been translated to the area of rehabilitation research. In addition, a section is devoted to models of milder CNS injury, including sports injuries.

CRC Press
Market: Biomedical Science
February 2015: 279 x 216
Hb: 978-1-466-56598-2: £146.00
eBook: 978-1-466-56599-9: £146.00

* For full contents and more information, visit: www.crcpress.com/9781466565982

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**Cellular Therapy for Neurological Injury**
Edited by Charles S., Jr. Cox, University of Texas, Houston
*Series: Gene and Cell Therapy*

This book describes the current status of the field of cellular therapy for neurological injuries, with primary areas of concentration on traumatic brain injury, stroke, (ischemic and hemorrhagic) as well as spinal cord injury. The book explores mechanisms of injury, the influence of the mechanism on the type of cell used, and the route of delivery/dosing regimen.

CRC Press
Market: Biomedical Science
March 2016: 235 x 156: 286pp
Hb: 978-1-482-29952-6: €114.00
* For full contents and more information, visit: www.crcpress.com/9781482299526

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**Mapping of Nervous System Diseases via MicroRNAs**
Edited by Christian Barbatò and Francesca Ruberti
*Series: Frontiers in Neurotherapeutics Series*

This book provides an up-to-date review of the function of microRNA (miRNA) in neurological diseases as well as advancements in technology for therapeutic modulation of miRNA activity. It covers general concepts and novel insights on brain function in relation to miRNA and also examines the role of miRNAs in various neurological diseases. Covering the full range of relevant concepts and giving a look into present and future possibilities, it is a necessary cutting-edge reference for neurologists, neuropathologists, and researchers and practitioners in a wide range of related fields.

CRC Press
Market: Biomedical Science
January 2016: 235 x 156: 262pp
Hb: 978-1-482-26352-7: £99.00
* For full contents and more information, visit: www.crcpress.com/9781482263527

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**Endothelial Cell Plasticity in the Normal and Injured Central Nervous System**
Edited by Esperanza Meléndez Herrera, Universidad Michoacana de San Nicolás de Hidalgo (UMSNH), México, Bryan V. Phillips-Farfán, Instituto Nacional de Pediatría, México and Gabriel Gutiérrez Ospina, Universidad Nacional Autónoma de México (UNAM), Coyoacán, México

This book is designed to highlight the importance of endothelial cells as key players in the functioning of the nervous system under both normal and pathological conditions. The book demonstrates that endothelial cells are an essential and dynamic cell population in the central nervous system, with multiple and complex roles, not only in the maintenance of homeostasis, but also in the regulation of important processes. These include neurogenesis, neural control of reproduction, aging, neurodegeneration, and tumor invasion. The book exhaustively reviews the newest findings in this exciting new area of investigation.

CRC Press
Market: Life Science
January 2015: 235 x 156: 270pp
Hb: 978-1-466-59921-5: £82.00
* For full contents and more information, visit: www.crcpress.com/9781466599215

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**Neurological Rehabilitation**
Spasticity and Contractures in Clinical Practice and Research
Edited by Anand D Pandyan, Keele University, Newcastle, UK, Hermie J. Hermens, University of Twente, Enschede-Noord, Netherlands and Bernard A. Conway, University of Strathclyde, Glasgow, UK
*Series: Rehabilitation Science in Practice Series*

This work combines coverage of both spasticity and contractures as these two phenomena are often closely interrelated. Current researchers do not differentiate between these individual impairments and, as a result, there is significant confusion in the literature. This book discusses both conditions and then separates them into their respective components. If these two conditions co-exist (which is generally the case), then the management of a patient will need to be customized to individual clinical presentation. This book covers this approach in detail.

CRC Press
Market: Biomedical Science
July 2016: 235 x 156: 400pp
Hb: 978-1-466-56544-9: £99.00
* For full contents and more information, visit: www.crcpress.com/9781466565449

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**Handbook of Neurosurgery, Neurology, and Spinal Medicine for Nurses and Advanced Practice Health Professionals**
Edited by Michael Wang, University of Miami, Miller School of Medicine, Florida, USA, Andrea Strayer, Odette Harris, Cathy Rosenberg and Praveen Mummamani

This practical handbook allows nurses, physician assistants, and allied health professionals practicing in the fields of neurosurgery, neurology, and spinal care to quickly review essentials while in the work environment. It emphasizes procedural steps and critical elements in patient management, including intensive care, the neurological examination, differential diagnoses, and pain management. Written by a multidisciplinary team of experts, the handbook is expected to become a well-worn companion and essential aid to the busy practitioner.

CRC Press
Market: Healthcare
September 2016: 235 x 156: 384pp
Pb: 978-1-498-71943-8: £82.00
eBook: 978-1-498-71943-8
* For full contents and more information, visit: www.crcpress.com/9781498719438

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**Spasticity Management**
Edited by Valerie L. Stevenson and Louise Jarrett, Royal Devon and Exeter Foundation Trust, UK

This text incorporates key elements fundamental to the management of chronic conditions. These include a multidisciplinary approach that includes physiology, nursing, and occupational therapy; a management plan, and continuing care to monitor both the spasticity and the underlying condition causing it. Spasticity is a poorly recognized but common symptom that has major impact on those affected, much of which is preventable. The combination of lack of awareness and inadequate management often results in spasticity having a greater impact than necessary.

CRC Press
Market: Neurology
April 2016: 254 x 178: 376pp
Pb: 978-1-482-29952-6: £57.99
* For full contents and more information, visit: www.crcpress.com/9781482299526

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Statistical Techniques for Neuroscientists
Edited by Young K. Truong, The University of North Carolina at Chapel Hill, USA

Series: Frontiers in Neuroscience
An ideal introduction to statistical neurocomputing, this book examines current statistical methods for solving emerging problems in neuroscience. These methods have been applied to data involving multichannel neural spike train, spike sorting, blind source separation, functional and effective neural connectivity, spatiotemporal modeling, and multimodal neuroimaging technique. It provides an overview of various methods being applied to specific research area of neuroscience. The book emphasizes statistical principles and their software. It includes example and experimental data so that readers can understand the principles and master the methods.

CRC Press

Market: Biomedical Science
May 2016: 235 x 156: 450pp
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Advances in Chromatography, Volume 53
Edited by Eli Grushka, Hebrew University of Jerusalem, Israel and Nelu Grinberg, Boehringer-Ingeheim Pharmaceuticals Inc., Ridgefield, Connecticut, USA
Series: Advances in Chromatography
For more than four decades, scientists and researchers have relied on the Advances in Chromatography series for the most up-to-date information on a wide range of developments in chromatographic methods and applications. For Volume 53, the series editors have invited established, well-known chemists to offer cutting-edge reviews of chromatographic methods with applications in the life sciences. The clear presentation of topics and vivid illustrations for which this series has become known makes the material accessible and engaging to analytical, biochemical, organic, polymer, and pharmaceutical chemists at all levels of technical skill.

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Market: Chemistry
June 2016: 235 x 156: 304pp
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* For full contents and more information, visit: www.crcpress.com/9781498726788

Personalized Medicine
Promises and Pitfalls
Gloria Gronowicz, University of Connecticut Health Center, Farmington, USA
Personalized Medicine: Promises and Pitfalls is an accessible introduction for all health professionals interested in the scientific basis and practical implications of this complex field of practice. Chapters cover a diverse range of topics, including genomics, proteomics, epigenetics, integrative medicine, stem cells, the factors that influence personal health, and the repercussions of a personalized medical approach on our medical institutions.

CRC Press
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Regulatory and Pharmacological Issues of Ayurvedic Formulations
Amritpal Singh
Regulatory affairs and pharmacological drug safety issues of Ayurvedic medicine have been overlooked by practitioners for many years. Research in Ayurveda is now a world-wide phenomenon, and several large pharmaceutical corporations are investing money for novel drug discovery from Ayurvedic sources. This book examines the regulatory and pharmacological aspects and includes extensive data on scientific evaluation carried out on Ayurvedic formulations. It will also serve as a reference book on standardization, pre-clinical studies, and clinical and toxicological studies on Ayurvedic formulations.

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Market: Healthcare
May 2016: 235 x 156: 220pp
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Amphibian and Reptile Adaptations and Environment
Interplay between Physiology and Behavior
Edited by Denis Otávio Vieira de Andrade, Instituto de Biotecnologias, UNESP - Univ Estadual Paulista, Departamento de Zoologia, Rio Claro, SP, Brazil
Despite their diversity, amphibians and reptiles (ARs) share many physiological traits of pivotal importance to their ability to cope with the physical environment, such as their dependence on external heat sources. Species distributed along a latitudinal or altitudinal gradient can exhibit considerable variation in their physiological capabilities as a function of changes in environmental parameters. This book provides a comprehensive and integrative view of the interplay between physiology and behavior in ARs, leading to a better understanding of the subject.
CRC Press
Market: Zoology
June 2016: 235 x 156: 320pp
Hb: 978-1-482-24022-1: £95.00
ebook: 978-1-482-22006-7
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Avian Cognition
Exploring the Intelligence, Behavior, and Individuality of Birds
Debra S. Herrmann, Biological Computing Initiative, North Bethesda, Maryland, USA
Unlike any other book, Avian Cognition thoroughly examines avian intelligence, behavior, and individuality. Preferences, choices, motivation, and habits of species, flocks, and individual birds are discussed and compared. This book investigates who birds are and why they do what they do. Daily, seasonal, and play activities, creativity, reasoning abilities, problem-solving skills, social interaction, life stages, and communication patterns are described, and a distinction is made between vocalizations that are learned and those that are inherited. The behavior and intelligence of both wild and pet birds is compared, and unlike other books, entire chapters are devoted to a single species.
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Market: Life Science
December 2015: 254 x 178: 535pp
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ebook: 978-1-498-73884-9
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Ecology and Conservation of Lesser Prairie-Chickens
Edited by David A. Haukos, Kansas State Univ, Manhattan, KS and Clint Boal
Series: Studies in Avian Biology
In Ecology and Conservation of Lesser Prairie-Chickens expert wildlife biologists, conservation biologists, and ornithologists cover the life history, genetics, ecology, and management strategies for lesser prairie-chickens. The volume also provides a detailed analysis of relative risks and conservation issues as well as potential conservation tools. It is a definitive reference for managers, researchers, and policymakers in the conservation of lesser prairie-chickens. The book can also be used as an authoritative source for individuals with an interest in bird biology, Great Plains ecology, or environmental science.
CRC Press
Market: Life Science
February 2016: 254 x 178: 360pp
Hb: 978-1-482-24022-1: £114.00
ebook: 978-1-482-24023-8
* For full contents and more information, visit: www.crcpress.com/9781482240221

Ecology and Conservation of North American Sea Ducks
Edited by Jean-Pierre L. Savard, Dirk V. Derksen, U.S. Geological Survey, Alaska Science Center, Anchorage, USA, Dan Esler, U.S. Geological Survey, Alaska Science Center, Anchorage, USA and John M. Eadie, University of California, Davis, USA
Series: Studies in Avian Biology
The past decade has seen a huge increase in the interest directed toward sea ducks. This has been inspired, in large part, by the conservation concerns associated with numerical declines in several sea duck species and populations, as well as a growing appreciation for their interesting ecological attributes. Reflecting the considerable research recently conducted, this book examines the 15 extant species of sea ducks that populate North America. It provides a benchmark for where we are in conservation efforts and suggests future directions for researchers, managers, students, conservationists, and avian enthusiasts.
CRC Press
Market: Life Science
April 2015: 254 x 178: 610pp
Hb: 978-1-482-24897-5: £95.00
ebook: 978-1-482-24898-2
* For full contents and more information, visit: www.crcpress.com/9781482248975

Golden-winged Warbler Ecology, Conservation and Habitat Management
Edited by Henry M. Streby, University of California at Berkeley, USA, David Buehler and David E. Andersen
Series: Studies in Avian Biology
The Golden-winged Warbler is a migratory songbird that breeds in the temperate upper midwestern US (Wisconsin & Minnesota) and Canada (Manitoba) and winters in Central and northern South America. Its small breeding range has been shrinking due to habitat loss, competition and interbreeding. As a result of this disturbing trend, Golden-winged Warblers are being considered for listing as “threatened” or “endangered” under the Endangered Species Act. In preparation for potential listing, the book intends to bring together all the disparate sources information regarding this species.
CRC Press
Market: Life Science
July 2016: 254 x 178: 300pp
Hb: 978-1-482-24069-6: £114.00
ebook: 978-1-482-24069-6
* For full contents and more information, visit: www.crcpress.com/9781482240699

Mammalian Endocrinology and Male Reproductive Biology
Edited by Shio Kumar Singh
This book provides comprehensive and current coverage of the area of endocrinology and male reproductive biology, covering not just humans, but mammals in general. It covers the latest developments in genomics of androgen action and male infertility. Wherever necessary, tables and figures have been added for a better understanding. Each chapter is appropriately referenced and contains current information on the latest developments in the field.
CRC Press
Market: Biology
September 2015: 235 x 156: 331pp
Hb: 978-1-488-72735-8: £82.00
ebook: 978-1-488-72736-5
* For full contents and more information, visit: www.crcpress.com/9781488727358
The Origin of Snakes
Insights from Morphology and the Fossil Record
Michael Wayne Caldwell
This book presents perspectives on the past and present state of the understanding of snake origins. It reviews and critiques data and ideas from paleontology and neontology (herpetology), as well as ideas from morphological and molecular phylogenetics. The author reviews the anatomy and morphology of extant snakes. Methods are also critiqued, including those empirical and theoretical methods employed to hypothesize ancestral ecologies for snakes. The modern debate on squamate phylogeny and snake ingroup phylogeny using molecules and morphology is examined critically to provide insights on origins and evolution.

CRC Press
Market: Life Science
July 2016: 235 x 156: 250pp
Hb: 978-1-482-25134-0: £49.99
ebook: 978-1-482-25135-7
* For full contents and more information, visit: www.crcpress.com/9781482251340

Phenological Synchrony and Bird Migration
Changing Climate and Seasonal Resources in North America
Edited by Eric M. Wood, University of Wisconsin, Madison, USA and Jherime L. Kellermann, Oregon Institute of Technology, Klamath Falls, USA
Series: Studies in Avian Biology
Exploring critical linkages between migratory birds, their seasonal resources, and shifts in climate change and weather events, this book brings together research on the current state of bird migration and phenology research in North America. It discusses the relation of the climate on wintering grounds to spring migration, the relationships of migratory birds and their seasonal resources, and the nature of these relationships in the face of climate change or extreme weather events. It also examines USA-National Phenology Network’s Nature’s Notebook program, and ways in which these data can be incorporated into conservation research.

CRC Press
Market: Life Science
January 2015: 254 x 178: 246pp
Hb: 978-1-482-24030-6: £82.00
ebook: 978-1-482-24031-3
* For full contents and more information, visit: www.crcpress.com/9781482240306

Vultures
Their Evolution, Ecology and Conservation
Michael O’Neal Campbell, Simon Fraser University, Burnaby, Canada
This book examines current knowledge on the evolution, ecology, and conservation biology of both New World vultures (Cathartidae) and Old World vultures (Accipitridae). Extinct species of both families are examined, as well as the disputed evidence for familial similarities and differences currently under review by geneticists and ornithologists. The book also discusses conservation issues related to recent land cover change (deforestation, urbanization, and desertification), wildlife depletions, and pollution, which affect scavenging vultures.

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Steve Hart, English Language Editor and Resource Writer, Cambridge, UK

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Milos Jenicek, McMaster University, Hamilton, Ontario, Canada

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