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Wireless Sensor Networks - Hossam

Mahmoud Ahmad Fahmy 2016-03-02

This book focuses on the principles of wireless sensor networks (WSNs), their applications, and their analysis tools, with meticulous attention paid to definitions and terminology. This book presents the adopted technologies and their manufacturers in detail, making WSNs tangible for the reader. In introductory computer networking books, chapter sequencing follows the bottom-up or top-down architecture of the 7-layer protocol. This book addresses subsequent steps in this process, both horizontally and vertically, thus fostering a clearer and deeper understanding through chapters that elaborate on WSN concepts and issues. With such depth, this book is intended for a wide audience; it is meant to be a helper and motivator for senior undergraduates, postgraduates, researchers, and practitioners. It lays out important concepts and WSN-relate applications; uses appropriate literature to back research and practical issues; and focuses on new trends. Senior undergraduate students can use it to familiarize themselves with conceptual foundations and practical project implementations. For graduate students and researchers, test beds and simulators provide vital insights into analysis methods and tools for WSNs. Lastly, in addition to applications and deployment, practitioners will be able to learn more about WSN manufacturers and components within several platforms and test beds.

Psoas Strength and Flexibility - Pamela

Ellgen 2015-02-24

A COMPLETE GUIDE TO PREVENTING BACK AND HIP INJURIES BY STRENGTHENING THE MUSCLE GROUP CONNECTING YOUR UPPER AND LOWER BODY Connecting the lower spine to the hips and legs, a strong and flexible psoas muscle is vital for everyday movements like walking, bending and reaching, as well as athletic endeavors like jumping for a ball, holding a yoga pose and swinging a golf club. With targeted information and exercises, this book's step-by-step program guarantees you'll transform this vulnerable muscle, including: Develop a powerful core End back pain Increase range of motion Improve posture Prevent strains and injuries Packed with 100s of step-by-step photos and clear, concise instructions, Psoas Strength and Flexibility features workouts for toning the muscle as well as rehabbing from injury. And each program is based on simple matwork exercises that require minimal or no equipment.

Natural Capital and Exploitation of the Deep Ocean - Maria Baker 2020-08-27

The deep ocean is the planet's largest biome and holds a wealth of potential natural assets. This book gives a comprehensive account of its geological and physical processes, ecology and biology, exploitation, management, and conservation.

[The Best Australian Science Writing 2014](#) -

Ashley Hay 2014-11-01

The annual collection celebrating the finest Australian science writing of the year. Why are

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Sydney's golden orb weaver spiders getting fatter and fitter? Could sociology explain the recent upsurge in prostate cancer diagnoses? Why were Darwinites craving a good storm during 'The Angry Summer'? Is it true that tuberculosis has become deadlier over time? And are jellyfish really taking over the world? Now in its fourth year, this popular and acclaimed anthology steps inside the nation's laboratories and its finest scientific and literary minds. Featuring prominent authors such as Tim Flannery, Jo Chandler, Frank Bowden and Iain McCalman, as well as many new voices, it covers topics as diverse and wondrous as our 'lumpy' universe, the creation of dragons and the frontiers of climate science.

Biology and Ecology of Toxic Pufferfish - Ramasamy Santhanam 2017-12-22

This is the first comprehensive book on the biology and ecology of pufferfish, also known as blowfish, swellfish, and globefish. Covering 197 species of pufferfish recorded so far from the marine, brackish, and freshwater ecosystems of the world, this important volume expounds on the toxins and associated poisonings of pufferfish. Importantly, the volume also explores the many uses of pufferfish, such as in aquariums, for their nutritional and culinary value, and for their emerging uses in the treatment of pain. Topics covered include: biology and ecology of pufferfish profiles of the world's marine, brackish, and freshwater pufferfish species characteristics of TTX (tetrodotoxin) and STX (saxitoxin) of pufferfish pufferfish poisoning and symptoms: treatment and management aquarium uses of pufferfish nutritional and pharmaceutical values of pufferfish diseases and parasites of pufferfish and their management

Microbia - Eugenia Bone 2018-04-03

From Eugenia Bone, the critically acclaimed author of *Mycophilia*, comes an approachable, highly personal look at our complex relationship with the microbial world. While researching her book about mushrooms, Eugenia Bone became fascinated with microbes—those life forms that are too small to see without a microscope. Specifically, she wanted to understand the microbes that lived inside other organisms like plants and people. But as she began reading books, scholarly articles, blogs, and even

attending an online course in an attempt to grasp the microbiology, she quickly realized she couldn't do it alone. That's why she enrolled at Columbia University to study Ecology, Evolution, and Environmental Biology. Her stories about being a middle-aged mom embedded in undergrad college life are spot-on and hilarious. But more profoundly, when Bone went back to school she learned that biology is a vast conspiracy of microbes. Microbes invented living and as a result they are part of every aspect of every living thing. This popular science book takes the layman on a broad survey of the role of microbes in nature and illustrates their importance to the existence of everything: atmosphere, soil, plants, and us.

Textiles for Sportswear - Roshan Shishoo 2015-05-28

Textiles for Sportswear is an important book that systematically covers key trends in design and materials, the use of novel and smart fabrics, and a range of specific applications. The book begins by surveying the principles of textile applications in sport, including design, materials, and production technology. The uses of smart textiles in sportswear are then examined, from intelligent materials to wearable technology. Final sections of the text explore comfort in sportswear, sportswear for protection, and recent advances in sportswear technology that are currently being applied to particular sports. Reviews the principles of textile applications in sport, including design, materials and production technology Examines the uses of smart textiles in sportswear Discusses how recent advances in sportswear technology are being applied to particular sports

Computational Learning Models and Methods Driven by Omics for Biology for "The Fifth China Computer Society Bioinformatics Conference" - Wang Guohua 2022-10-05

30 years of the Comet Assay: an overview with some new insights - Amaya Azqueta 2015-08-21

By means of this 'Frontiers in Genetics' research topic, we are celebrating 30 years of the Comet Assay. The first paper on this single-cell gel electrophoresis assay was published in 1984 by O. Ostling and K.J. Johanson (Biochem. Biophys.

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Res. Commun. Vol.123: 291-298). The comet assay is a versatile and sensitive method for measuring single - and double-strand breaks in DNA. By including lesion-specific enzymes in the assay, its range and sensitivity are greatly increased, but it is important to bear in mind that their specificity is not absolute. The comet assay (with and without inclusion of lesion-specific enzymes) is widely used as a biomarker assay in human population studies - primarily to measure DNA damage, but increasingly also to assess the capacity of cells for DNA repair. Ostling and Johanson (Biochem. Biophys. Res. Commun., 1984) were also the first to report experiments to measure DNA repair, by simply following the decrease of DNA damage over time after challenging cells with ionising radiation. However, this approach is time-consuming and laborious as it requires an extended period of cell culture and is therefore not ideal for biomonitoring studies, which typically require high-throughput processing of many samples. As an alternative approach, the in vitro comet-based repair assay was developed: a cell extract is incubated with a DNA substrate containing specific lesions, and DNA incisions accumulate. The in vitro comet-based repair assay has been modified and improved over the past decade: it was first devised to measure base excision repair of oxidised purines in lymphocytes (Collins et al., Mutagenesis, 2001), but has since been adapted for other lesions and thus other repair pathways, as well as being applied to tissue samples in addition to cell suspensions. Even after 30 years, the comet assay is still in a growth phase, with many new users each year. Many questions are repeatedly raised, which may seem to have self-evident answers, but clearly, it is necessary to reiterate them for the benefit of the new audience, and sometimes being forced to think again about old topics can shed new light. Different applications of the comet assay are discussed in this special issue, including: genotoxicity testing in different organisms, human biomonitoring, DNA repair studies, environmental biomonitoring and clinical studies. Furthermore, we consider and where possible answer questions, including the ones raised by Raymond Tice at the 8th International Comet Assay Workshop in Perugia (Italy 2009): What is the spectrum of DNA damage detected

by the various versions of the comet assay?; What are the limitations associated with each application?; What should be done to standardize the assay for biomonitoring studies?; Can the comet assay be used to monitor changes in global methylation status?; What cell types are suitable for detecting genotoxic substances and their effects in vivo and in vitro?; Can the assay be fully automated?; and more. So this 'Frontiers in Genetics' research topic is written for the beginner as well as for the experienced users of the comet assay. *The Ethics of Personalised Medicine* - Jochen Vollmann 2016-03-09

In recent times, the phrase 'personalised medicine' has become the symbol of medical progress and a label for better health care in the future. However, a controversial debate has developed around whether these promises of better, more personal and more cost-efficient medicine are realistic. This book brings together leading researchers from across Europe and North America, from both normative and empirical disciplines, who take a more critical view of the often encountered hype associated with personalised medicine. Partially drawing on a four year collaborative research project funded by the German Ministry for Education and Research, the book presents a multidisciplinary debate on the current state of research on the ethical, legal and social implications of personalised medicine. At a time when future health care is a topic of much discussion, this book provides valuable policy recommendations for the way forward. This study will be of interest to researchers from various disciplines including philosophy, bioethics, law and social sciences.

Data Integration in the Life Sciences - Sören Auer 2018-12-29

This book constitutes revised selected papers from the 13th International Conference on Data Integration in the Life Sciences, DILS 2018, held in Hannover, Germany, in November 2018. The 5 full, 8 short, 3 poster and 4 demo papers presented in this volume were carefully reviewed and selected from 22 submissions. The papers are organized in topical sections named: big biomedical data integration and management; data exploration in the life sciences; biomedical data analytics; and big

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biomedical applications.

A Survey of Voluntaristics - David Horton Smith 2015-11-24

This article provides a survey of the growth of research on Nonprofit Sector and Voluntary Action Research, now termed simply voluntaristics. The author founded the organized, global, interdisciplinary, socio-behavioral science field of voluntaristics in 1971, with his formation and establishment of the Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA; www.arnova.org). Voluntaristics, after more than 40 years of growth, now qualifies as a new, global, integrative, academic discipline in the socio-behavioral sciences and related social professions, not just as one of many interdisciplinary fields of research, according to six defining criteria for a discipline.

Genomics in Aquaculture to Better Understand Species Biology and Accelerate Genetic Progress - José Manuel Yáñez 2016-09-15

From a global perspective aquaculture is an activity related to food production with large potential for growth. Considering a continuously growing population, the efficiency and sustainability of this activity will be crucial to meet the needs of protein for human consumption in the near future. However, for continuous enhancement of the culture of both fish and shellfish there are still challenges to overcome, mostly related to the biology of the cultured species and their interaction with (increasingly changing) environmental factors. Examples of these challenges include early sexual maturation, feed meal replacement, immune response to infectious diseases and parasites, and temperature and salinity tolerance. Moreover, it is estimated that less than 10% of the total aquaculture production in the world is based on populations genetically improved by means of artificial selection. Thus, there is considerable room for implementing breeding schemes aimed at improving productive traits having significant economic impact. By far the most economically relevant trait is growth rate, which can be efficiently improved by conventional genetic selection (i.e. based on breeding values of selection candidates). However, there are other important

traits that cannot be measured directly on selection candidates, such as resistance against infectious and parasitic agents and carcass quality traits (e.g. fillet yield and meat color). However, these traits can be more efficiently improved using molecular tools to assist breeding programs by means of marker-assisted selection, using a few markers explaining a high proportion of the trait variation, or genomic selection, using thousands of markers to estimate genomic breeding values. The development and implementation of new technologies applied to molecular biology and genomics, such as next-generation sequencing methods and high-throughput genotyping platforms, are allowing the rapid increase of availability of genomic resources in aquaculture species. These resources will provide powerful tools to the research community and will aid in the determination of the genetic factors involved in several biological aspects of aquaculture species. In this regard, it is important to establish discussion in terms of which strategies will be more efficient to solve the primary challenges that are affecting aquaculture systems around the world. The main objective of this Research Topic is to provide a forum to communicate recent research and implementation strategies in the use of genomics in aquaculture species with emphasis on (1) a better understanding of fish and shellfish biological processes having considerable impact on aquaculture systems; and (2) the efficient incorporation of molecular information into breeding programs to accelerate genetic progress of economically relevant traits.

Advances on the Gametocyte Biology, Host Immunity and Vector Stages to interrupt the Transmission of Malaria - Linda Reiling 2022-06-14

Nitric Oxide in Plant Biology - Vijay Pratap Singh 2021-09-19

Nitric Oxide in Plant Biology: An Ancient Molecule with Emerging Roles is an extensive volume which provides a broad and detailed overview of Nitric Oxide (NO) in plant biology. The book covers the entirety of the crucial role NO plays in the plant lifecycle, from the regulation of seed germination and growth to

synthesis, nitrogen fixation and stress response. Beginning with NO production and NO homeostasis, Nitric Oxide in Plant Biology goes on to cover a variety of NO roles, with a focus on NO signalling, crosstalk and stress responses. Edited by leading experts in the field and featuring the latest research from laboratories from across the globe, it is a comprehensive resource of interest to students and researchers working in plant physiology, agriculture, biotechnology, and the pharmaceutical and food industries. Provides a broad and detailed overview on NO in plant biology, including NO production, NO signaling, NO homeostasis, crosstalk and stress responses Edited by leading experts in the field Features the latest research from laboratories from across the globe
Sociology in Our Times - Diana Kendall
2016-01-01

This best-selling comprehensive book conveys the relevance of sociology by presenting a timely collection of theories, research, and examples -- including its signature first-person accounts that open many chapters. These lived experiences are relevant to students and introduce themes that provide a framework for learning the chapter material. Kendall's vivid and inviting writing style, emphasis on applications, and eye for compelling current examples further highlight sociology's relevance to all students. Now in its eleventh edition, SOCIOLOGY IN OUR TIMES is acclaimed for being the first textbook to integrate race, class, and gender issues, and for its thorough presentation of sociological theory, including contemporary perspectives such as feminism and postmodernism. This edition focuses more on social/global change and on the contemporary world, presenting such current debates as bullying and social media abuse, digital-age methods to increase school attendance, food trucks and the spread of culture, modern slavery, and weight bias. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.
[Biology of Brain Disorders – Cellular substrates for disrupted synaptic function and experience-dependent plasticity](#) - Daniela Tropea
2022-09-26

Integrative Genomics and Network Biology

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in Livestock and other Domestic Animals - David E. MacHugh 2020-09-11

This eBook is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: frontiersin.org/about/contact.
Insights in Structural Biology: 2021 - Annalisa Pastore 2022-11-15

Evidence-Based Climate Science - Don Easterbrook 2016-09-16

Evidence-Based Climate Science: Data Opposing CO2 Emissions as the Primary Source of Global Warming, Second Edition, includes updated data related to the causes of global climate change from experts in meteorology, geology, atmospheric physics, solar physics, geophysics, climatology, and computer modeling. This book objectively gathers and analyzes scientific data concerning patterns of past climate changes, influences of changes in ocean temperatures, the effect of solar variation on global climate, and the effect of CO2 on global climate. This analysis is then presented as counter-evidence to the theory that CO2 is the primary cause behind global warming. Increasingly, scientists are pointing to data which suggests that climate changes are a result of natural cycles, which have been occurring for thousands of years. Unfortunately, global warming has moved into the political realm without enough peer-reviewed research to fully validate and exclude other, more natural, causes of climate change. For example, there is an absence of any physical evidence that CO2 causes global warming, so the only argument for CO2 as the cause of warming rests entirely in computer modeling. Thus, the question becomes, how accurate are the computer models in predicting climate? What other variables could be missing from the models? In order to understand modern climate

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changes, we need to look at the past history of climate changes. Vast amounts of physical evidence of climate change over the past centuries and millennia have been gathered by scientists. Significant climate changes have clearly been going on for many thousands of years, long before the recent rise in atmospheric CO2. Evidence-Based Climate Science, Data Opposing CO2 Emissions as the Primary Source of Global Warming, Second Edition, documents past climate changes and presents physical evidence for possible causes. Provides scientific evidence for issues related to global climate change that is not readily available elsewhere. Offers detailed analysis of temperature measurements with the goal of helping readers to understand conflicting claims about global warming heard every day in the news media. Presents real-time data on polar ice. Presents the real-time effect of CO2 on global warming, rather than forecasts based on computer models. *Advances in Systems Science* - Jerzy Świątek 2016-11-04

This book gathers the carefully reviewed proceedings of the 19th International Conference on Systems Science, presenting recent research findings in the areas of Artificial Intelligence, Machine Learning, Communication/Networking and Information Technology, Control Theory, Decision Support, Image Processing and Computer Vision, Optimization Techniques, Pattern Recognition, Robotics, Service Science, Web-based Services, Uncertain Systems and Transportation Systems. The International Conference on Systems Science was held in Wrocław, Poland from September 7 to 9, 2016, and addressed a range of topics, including systems theory, control theory, machine learning, artificial intelligence, signal processing, communication and information technologies, transportation systems, multi-robotic systems and uncertain systems, as well as their applications. The aim of the conference is to provide a platform for communication between young and established researchers and practitioners, fostering future joint research in systems science.

Beyond Wiping Noses - Stephen Lane 2020-09-30

Stephen Lane's *Beyond Wiping Noses: Building an informed approach to pastoral leadership in*

schools sets out the crucial role of pastoral care as part of the function and purpose of schooling - and shares practical insights on how schools can get it right. Within the current culture of interest in developing research-informed approaches to teaching, the focus has inevitably been focused around pedagogy. However, with the well-documented increase in pupil anxiety and mental ill-health in recent times, there is also a pressing need for schools and teachers to embrace a more rigorous approach to pastoral care. In this urgently needed book, teacher and Head of Year Stephen Lane (aka Sputnik Steve) presents a case for developing a research-informed approach to the pastoral aspect of teaching. This approach is the result of Stephen's own explorations of pastoral practice - and in *Beyond Wiping Noses* he offers helpful advice on how to design a knowledge-rich pastoral curriculum that encompasses both knowledge of the self and knowledge of the other. Stephen expertly surveys the field of pastoral provision and leadership and provides practical takeaways around how schools can build an integrated approach to taking care of their pupils. He considers how pastoral routines can be embedded in the curriculum and developed to take account of cognitive load theory and Rosenshine's principles of instruction. The book also includes chapters focused on key pastoral considerations - such as safeguarding, behaviour, bullying, and wellbeing and mental health. Suitable for teachers, school leaders and anyone with a pastoral role in any school setting. *Application of Antigen Cross-Presentation Research into Patient Care* - Marianne Boes 2017-05-16

The activation of adaptive immune responses requires the processing and presentation of protein antigens to lymphocytes. Especially dendritic cells are effective at display of antigen-derived peptides in the form of immunogenic peptide/MHC complexes to CD4 and CD8-positive T cells, and can stimulate even naive T cells to clonally expand. During the last 40 years, mechanisms that facilitate antigen processing and presentation were clarified, mostly from work in cell lines and mouse models. From mouse-based work, it is now clear that dendritic cells represent a collection of specialized cell subsets that are particularly well

endowed to stimulate antigen transport to distinct tissue locations, to transfer antigens between cellular subsets or to trigger T cell responses. Dendritic cell subsets hold great promise for therapeutic application, for example as dendritic cell-based vaccines to bolster immune responses against viruses or malignant growths. Hurdles remain that preclude the efficient application of high quality pre-clinical research into standardized patient care. In this research topic, efforts in dendritic cell research and dendritic cell-based vaccines are discussed, from both pre-clinical and application points of view.

Fractional Order Control and Synchronization of Chaotic Systems - Ahmad Taher Azar 2017-02-27

The book reports on the latest advances in and applications of fractional order control and synchronization of chaotic systems, explaining the concepts involved in a clear, matter-of-fact style. It consists of 30 original contributions written by eminent scientists and active researchers in the field that address theories, methods and applications in a number of research areas related to fractional order control and synchronization of chaotic systems, such as: fractional chaotic systems, hyperchaotic systems, complex systems, fractional order discrete chaotic systems, chaos control, chaos synchronization, jerk circuits, fractional chaotic systems with hidden attractors, neural network, fuzzy logic controllers, behavioral modeling, robust and adaptive control, sliding mode control, different types of synchronization, circuit realization of chaotic systems, etc. In addition to providing readers extensive information on chaos fundamentals, fractional calculus, fractional differential equations, fractional control and stability, the book also discusses key applications of fractional order chaotic systems, as well as multidisciplinary solutions developed via control modeling. As such, it offers the perfect reference guide for graduate students, researchers and practitioners in the areas of fractional order control systems and fractional order chaotic systems.

Novel Concepts in Cardiac Energy Metabolism: From Biology to Disease - Thomas Pulinilkunnil 2019-08-08

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Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: frontiersin.org/about/contact.

Molecular and Cellular Plant Reproduction - Dazhong Zhao 2017-07-21

Plant reproduction is essential not only for producing offspring but also for increasing crop quality and yield. Moreover, plant reproduction entails complex growth and developmental processes, which provide a variety of opportunities for elucidating fundamental principles in biology. The combinational employment of molecular genetic approaches and emerging technologies, such as fluorescence-based imaging techniques and next generation sequencing, has led to important progresses in plant reproduction using model plants, crops, and trees. This e-book compiles 31 articles, including 1 hypothesis and theory, 4 perspectives, 12 reviews, and 14 original research papers. We hope that this E-book will draw attention of all plant biologists to exciting advances in the field of plant reproduction and help solve remaining challenging questions in the future. We wish to express our appreciation to all the authors, reviewers, and the Frontiers editorial office for their excellent contributions that made the publication of this e-book possible.

Cerebrovascular and Neurodegenerative Diseases - New Insights into Molecular Cell Biology and Therapeutic Targets - Sikha Saha 2020-01-30

Cybercrime and its victims - Elena Martellozzo 2017-06-26

The last twenty years have seen an explosion in the development of information technology, to the point that people spend a major portion of waking life in online spaces. While there are enormous benefits associated with this technology, there are also risks that can affect

the most vulnerable in our society but also the most confident. Cybercrime and its victims explores the social construction of violence and victimisation in online spaces and brings together scholars from many areas of inquiry, including criminology, sociology, and cultural, media, and gender studies. The book is organised thematically into five parts. Part one addresses some broad conceptual and theoretical issues. Part two is concerned with issues relating to sexual violence, abuse, and exploitation, as well as to sexual expression online. Part three addresses issues related to race and culture. Part four addresses concerns around cyberbullying and online suicide, grouped together as 'social violence'. The final part argues that victims of cybercrime are, in general, neglected and not receiving the recognition and support they need and deserve. It concludes that in the volatile and complex world of cyberspace continued awareness-raising is essential for bringing attention to the plight of victims. It also argues that there needs to be more support of all kinds for victims, as well as an increase in the exposure and punishment of perpetrators. Drawing on a range of pressing contemporary issues such as online grooming, sexting, cyber-hate, cyber-bullying and online radicalization, this book examines how cyberspace makes us more vulnerable to crime and violence, how it gives rise to new forms of surveillance and social control and how cybercrime can be prevented.

China and Sustainable Development in Latin America - Rebecca Ray 2017-01-02

During Latin America's China-led commodity boom, governments turned a blind eye to the inherent flaws in the region's economic policy. Now that the commodity boom is coming to an end, those flaws cannot be ignored. High on the list of shortcomings is the fact that Latin American governments—and Chinese investors—largely fell short of mitigating the social and environmental impacts of commodity-led growth. The recent commodity boom exacerbated pressure on the region's waterways and forests, accentuating threats to human health, biodiversity, global climate change and local livelihoods. *China and Sustainable Development in Latin America* documents the social and environmental impact of the China-led

commodity boom in the region. It also highlights important areas of innovation, like Chile's solar energy sector, in which governments, communities and investors worked together to harness the commodity boom for the benefit of the people and the planet.

Orchid Genomics and Developmental Biology - Jen-Tsung Chen 2020-09-02

This eBook is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: frontiersin.org/about/contact. *Biology-Inspired Engineering and Engineering-Inspired Biology* - Jan-Matthias Braun 2021-01-04

Concepts, Applications, Experimentation and Analysis of Wireless Sensor Networks - Hossam Mahmoud Ahmad Fahmy 2020-11-24

The new edition of this popular book has been transformed into a hands-on textbook, focusing on the principles of wireless sensor networks (WSNs), their applications, their protocols and standards, and their analysis and test tools; a meticulous care has been accorded to the definitions and terminology. To make WSNs felt and seen, the adopted technologies as well as their manufacturers are presented in detail. In introductory computer networking books, chapters sequencing follows the bottom up or top down architecture of the seven layers protocol. This book starts some steps later, with chapters ordered based on a topic's significance to the elaboration of wireless sensor networks (WSNs) concepts and issues. With such a depth, this book is intended for a wide audience, it is meant to be a helper and motivator, for both the senior undergraduates, postgraduates, researchers, and practitioners; concepts and WSNs related applications are laid out, research and practical issues are backed by appropriate

literature, and new trends are put under focus. For senior undergraduate students, it familiarizes readers with conceptual foundations, applications, and practical project implementations. For graduate students and researchers, transport layer protocols and cross-layering protocols are presented and testbeds and simulators provide a must follow emphasis on the analysis methods and tools for WSNs. For practitioners, besides applications and deployment, the manufacturers and components of WSNs at several platforms and testbeds are fully explored.

Perspectives on Deep-Sea Mining - Rahul Sharma 2022-01-13

This book is a sequel to 'Deep-Sea Mining: Resource Potential, Technical and Environmental Considerations' (2017) and 'Environmental Issues of Deep-Sea Mining: Impacts, Consequences and Policy Perspectives' (2019), and aims to provide a comprehensive volume on different perspectives of deep-sea mining from specialists around the world. The work is timely, as deep-sea minerals continue to enthuse researchers involved in activities such as ascertaining their potential as alternative sources for critical metals for green energy and other industrial applications, as well as technology development for their sustainable exploration and exploitation, while addressing environmental concerns. With a steady increase in the number of contractors having exclusive rights over large tracts of seafloor in the 'Area', i.e. area beyond national jurisdictions, the International Seabed Authority, mandated with the responsibility of regulating such activities, is in the process of developing a code for exploitation of deep-sea minerals. These, coupled with growing interest among private entrepreneurs, investment companies and policy makers, underscore the need for updated information to be made available in one place on the subject of deep-sea mining. The book evaluates the potential and sustainability of mining for deep-sea minerals compared to other land-based deposits, the technologies needed for mining and processing of ores, the approach towards environmental monitoring and management, as well as the regulatory frameworks and legal challenges to manage deep-sea mining activities. The book is expected

to serve as an important reference for all stakeholders including researchers, contractors, mining companies, regulators and NGOs involved in deep-sea mining.

Myelin Repair: At the Crossing-Lines of Myelin Biology and Gene Therapy - Matthias Klugmann 2022-03-08

Vibrant Architecture - Rachel Armstrong 2015-08-17

This book sets out the conditions under which the need for a new approach to the production of architecture in the twenty-first century is established, where our homes and cities are facing increasing pressures from environmental challenges that are compromising our lives and well being. Vibrant architecture embodies a new kind of architectural design practice that explores how lively materials, or 'vibrant matter', may be incorporated into our buildings to confer on them some of the properties of living things, such as movement, growth, sensitivity and self-repair. The theoretical and practical implications of how this may occur are explored through the application of a new group of materials. Characteristically, these substances possess some of the properties of living systems but may not have the full status of being truly alive. They include forms of chemical artificial life such as 'dynamic droplets' or synthetically produced soils. As complex systems, they are able to communicate directly with the natural world using a shared language of chemistry and so, negotiate their continued survival in a restless world. Vibrant architecture may create new opportunities for architectural design practice that venture beyond top-down form-finding programs, by enabling architects to co-design in partnership with human and nonhuman collectives, which result from the production of post natural landscapes. Ultimately, vibrant architecture may operate as an ecological platform for human development that augments the liveliness of our planet, rather than diminishes it.

The Nexus of Law and Biology - Dr Barbara Hocking 2013-02-28

Although law and science have interacted for centuries, today their interactions pose enormous challenges. These challenges are reflected in issues ranging from reproductive

technology and resource conservation, to genetic technology and biological warfare. The emerging dialogue is complex and requires an ongoing re-thinking of general principles, such as expert biological evidence, which features in a wide range of legal contexts, and including medical law, torts, crime and intellectual property. Studying the many ways in which law and biology come together in many areas of contemporary life, *The Nexus of Law and Biology: New Ethical Challenges* explores the juridical uses of biological sciences to illuminate key issues and contemporary intersections, arguing that each of several disciplines must communicate with one another, recognizing a common ground in ethics. Featuring an impressive list of contributors, this book is an invaluable reference for legal scholars, students, practising lawyers and scientists engaged with the legal system.

Environmental Issues of Deep-Sea Mining - Rahul Sharma 2019-05-07

This volume discusses environmental issues associated with deep-sea mining, with an emphasis on potential impacts, their consequences and the policy perspectives. The book describes the methods and technologies to assess, monitor and mitigate mining impacts on marine environments, and also suggests various approaches for environmental management when conducting deep-sea mining. The volume brings together information and data for researchers, contractors, mining companies, regulators, and NGOs working in the field of deep-sea mining. Section 1 highlights the various environmental issues and discusses methods and approaches that can help in developing environmentally sustainable deep-sea mining. Section 2 details the results and outcomes of studies related to impact assessment of deep-sea mining, and proposes methods for monitoring. Section 3 discusses the need and means for developing data standards and their application to deep-sea mining. Section 4 discusses the policies, approaches, and practices related to deep-sea mining, suggests formats for developing environmental impact statements (EIS) and environmental management plans (EMP), and describes national and international regulations for environmental management. Section 5 concludes

the text by putting deep-sea economic activities into an environmental context and conducting techno-economic analyses of deep-sea mining and processing.

The Sleep Revolution - Arianna Huffington 2017-04-04

Co-founder and editor in chief of The Huffington Post Arianna Huffington shows how our cultural dismissal of sleep as time wasted compromises our health and our decision-making and undermines our work lives, our personal lives--and even our sex lives in this New York Times bestseller. We are in the midst of a sleep deprivation crisis, with profound consequences to our health, our job performance, our relationships and our happiness. What we need is nothing short of a sleep revolution: only by renewing our relationship with sleep can we take back control of our lives. In *The Sleep Revolution*, Arianna explores all the latest science on what exactly is going on while we sleep and dream. She takes on the sleeping pill industry, and all the ways our addiction to technology disrupts our sleep. She also offers a range of recommendations and tips from leading scientists on how we can get better and more restorative sleep, and harness its incredible power. The result is a sweeping, scientifically rigorous, and deeply personal exploration of sleep from all angles, from the history of sleep, to the role of dreams in our lives, to the consequences of sleep deprivation, and the new golden age of sleep science that reveals the vital role sleep plays in our every waking moment and every aspect of our health--from weight gain, diabetes, and heart disease to cancer and Alzheimer's. In today's fast-paced, always-connected, perpetually-harried and sleep-deprived world, our need for a good night's sleep is more important--and elusive--than ever. *The Sleep Revolution* both sounds the alarm on our worldwide sleep crisis and provides a detailed road map to the great sleep awakening that can help transform our lives, our communities, and our world.

Lost Sex - Isa Schön 2009-09-22

Sex is the queen of problems in evolutionary biology. Generations of researchers have investigated one of the last remaining evolutionary paradoxes: why sex exists at all.

Given that sexual reproduction is costly from an

evolutionary point of view, one could wonder why not all animals and plants reproduce asexually. Dozens of contemporary hypotheses attempt to explain the prevalence of sex and its advantages and predict the early extinction of fully asexual lineages. The major theme of this book is: what is the fate of animal and plant groups in which sex is lost? Initial chapters discuss theory behind asexual life: what major disadvantages do asexual groups have to face, what are the genetic and ecological consequences and what does this theory predict for more applied aspects of asexual life, for example in agricultural pests, diseases as well as in cultural crops such as grapes. Cases studies in many animals (focusing on both invertebrates and vertebrates) and plants reveal parallel, but

also singularly novel adaptations to the absence of meiosis and syngamy. And last but not least, are asexuals really doomed to early extinction or do genuine ancient asexuals exist? This book assembles contributions from the most important research groups dealing with asexual evolution in eukaryotes. It is a milestone in research on parthenogenesis and will be useful to undergraduate as well as graduate students and to senior researchers in all fields of evolutionary biology, as the paradox of sex remains its queen of problems.

World Ocean Assessment - Alan Simcock
2017-04-17

This United Nations report examines the current state of knowledge of the world's oceans, for policymakers, and provides a reference for marine science courses.