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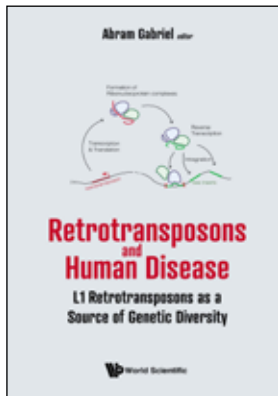
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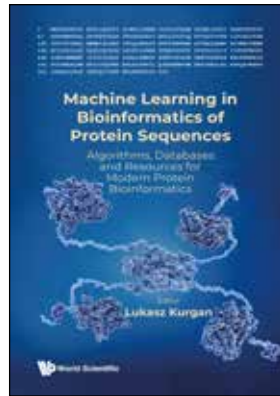
Life Sciences Catalogue 2023

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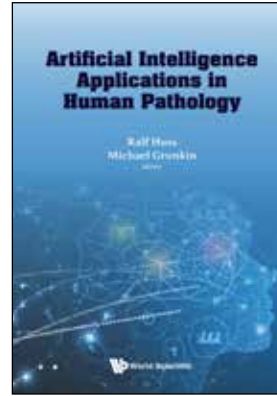
edited by **Abram Gabriel**
(Rutgers University, USA)

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edited by **Lukasz Kurgan**
(Virginia Commonwealth University, USA)

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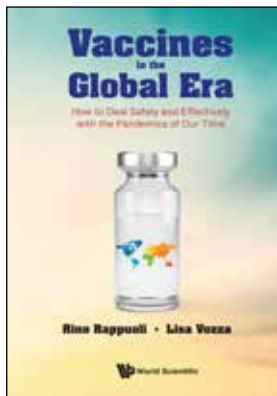
edited by **Ralf Huss**
(University Hospital Augsburg, Germany)
& **Michael Grunkin**
(Visiopharm, Denmark)

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Editor-in-chief:
Utkan Demirci
(Stanford University, USA)

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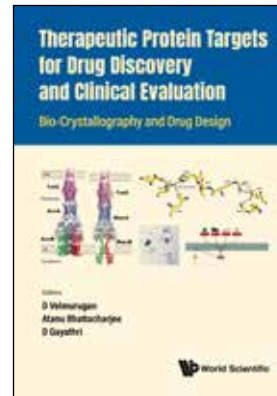
by **Rino Rappuoli**
(GlaxoSmithKline Vaccines, Italy) & **Lisa Vozza**
(AIRC Foundation for Cancer Research, Italy)

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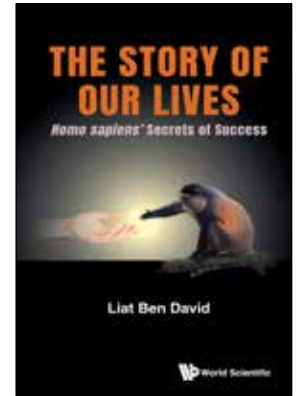
by **Conrad B Quintyn**
(Bloomsburg University, USA)

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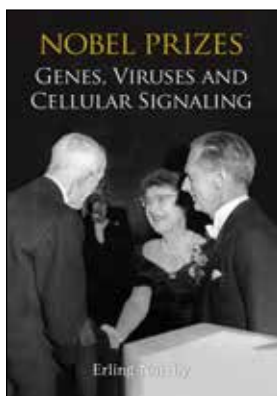
edited by **D Velmurugan**
(SRM University, India),
Atanu Bhattacharjee
(North Eastern Hill University, India)
& **D Gayathri**
(University of Madras, India)

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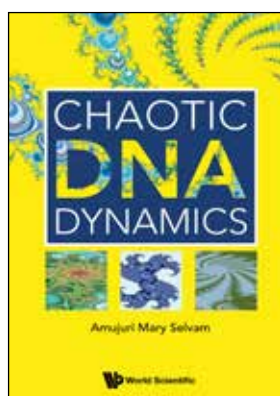
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(The Davidson Institute - the Educational Arm of the Weizmann Institute of Science, Israel)

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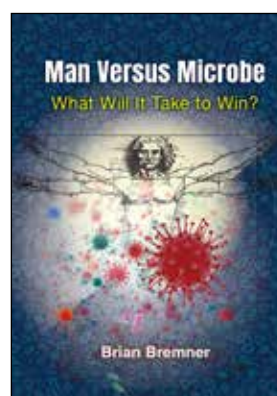
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(The Royal Swedish Academy of Sciences, Sweden)

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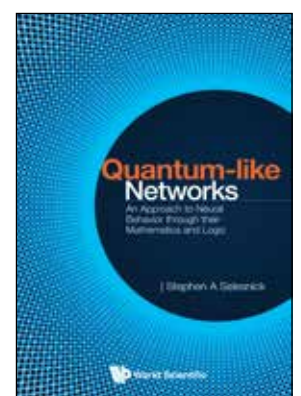
by **Amujuri Mary Selvam**
(Indian Institute of Tropical Meteorology, India)

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by **Brian Bremner**
(Bloomberg LP, UK)

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by **Stephen A Selesnick**
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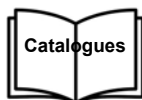
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Life Sciences



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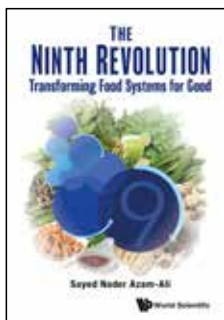


AGRICULTURAL / CROP SCIENCE

THE NINTH REVOLUTION

Transforming Food Systems for Good by **Sayed Nader Azam-Ali** (*Crops for the Future, UK*)

"Azam-Ali (Univ. of Nottingham) combines an overall history of agriculture with a proposal for radical changes in the current global agri-food system, so as to increase the world food supply and provide a greater public good. This text is written by an agri-food expert who has published prolifically on the topic, providing a wealth of knowledge to the discussion of food systems and agriculture, but mainly in the form of journal articles. Some of his prior output has been included in this logically organized volume, which is divided into eight lengthy chapters, each filled with subheadings and organizational features that break the reading into digestible portions. The prose is written in an easy-to-follow style with vocabulary that most college-level readers will be able to understand. Endnotes are heavy throughout the work, lending credibility to the concepts discussed. This volume is suitable for libraries with a food studies or agriculture collection. Summing Up: Recommended." **CHOICE**



400pp	Jun 2021	
978-981-125-010-1(pbk)	US\$34.95	£30
978-981-123-644-0	US\$128	£115
978-981-123-645-7(ebook)	US\$205	£185

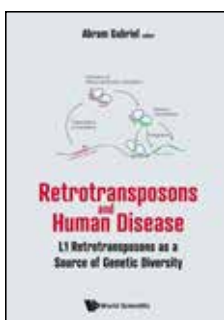
BIOCHEMISTRY

RETROTRANSPOSONS AND HUMAN DISEASE

L1 Retrotransposons as a Source of Genetic Diversity

edited by **Abram Gabriel** (*Rutgers University, USA*)

This volume explores an array of diseases in humans associated with L1 retrotransposon movement within the human genome, including some cancers such as colon cancer and neuropsychiatric disorders such as schizophrenia. The chapters explore the diversity of retrotransposons, their different biological mechanisms, the role of L1 in their movement, and their contribution to human diseases.



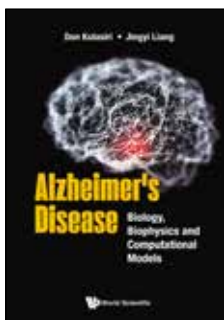
300pp	Jul 2022	
978-981-124-921-1	US\$108	£95
978-981-124-922-8(ebook)	US\$173	£140

ALZHEIMER'S DISEASE

Biology, Biophysics and Computational Models

by **Don Kulasiri** (*Lincoln University, New Zealand*) & **Jingyi Liang** (*UiT The Arctic University of Norway, Norway*)

Starting with the broader picture from a biological perspective, this book takes the reader through fascinating dynamics within and outside of neurons in the brain. The book helps the reader to understand AD from mechanistic and biochemical perspectives at intra- and inter-cellular levels. It focuses on biochemical pathways and modeling associated with AD. Some of the recent research on biophysics and computational models related to AD are explained using context-driven computational and mathematical modeling and essential biology is discussed to understand the modeling research.



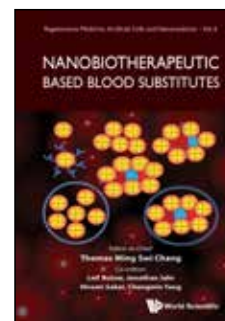
416pp	Feb 2022	
978-1-80061-011-8	US\$158	£140
978-1-80061-012-5(ebook)	US\$253	£225

Regenerative Medicine, Artificial Cells and Nanomedicine - Vol 6

NANOBIO-THERAPEUTIC BASED BLOOD SUBSTITUTES

Others : **Leif Bülow** (*Lund University, Sweden*), **Jonathan Jahr** (*University of California at Los Angeles, USA*), **Hiromi Sakai** (*Nara Medical University, Japan*) & **Chengmin Yang** (*Chinese Academy of Medical Sciences, China*)

Editor-in-chief: **Thomas Ming Swi Chang** (*McGill University, Canada*)



This definitive volume will provide the reader with up to date information and the most recent science of the fast-evolving area of nanobiotherapeutic-based blood substitutes. Long studied, there are recent updates that make their use in patients more promising, and with one product approved for human use, many more in the pipeline. These include 2nd generations and even third generation ones, the later with enhancement of red blood cell functions. In addition, there are carefully written and referenced updates on the recent history and products in the field, complete with pathophysiologic and pharmacologic studies to validate and verify the efficacy and safety of many of these new products.

1044pp	Jan 2022	
978-981-122-868-1	US\$248	£220

PEPTIDE AND PROTEIN ENGINEERING FOR BIOTECHNOLOGICAL AND THERAPEUTIC APPLICATIONS

edited by **Pierre Rousselot-Pailley** (*Aix Marseille Université, France*) & **Olga Iranzo** (*Aix Marseille Université, France*)

This book aims to give an overview of the last developments in the field of peptide and protein engineering. It comprises a collection of chapters that span from the production of simple non-proteinogenic building blocks and peptidic scaffolds of different sizes and structures to more complex systems including peptide-based nanomaterials, enzymes and artificial metalloenzymes. Different strategies are described where chemical and biological tools have been developed and combined to attain the desired properties and sought functionalities.

350pp	Sep 2022	
978-981-126-165-7	US\$128	£100
978-981-126-166-4(ebook)	US\$205	£165

HISTOPATHOLOGY OF GLYCAN DIVERSITY

Lectin Histochemistry

by **Nissi Varki** (*University of California, San Diego*) & **Pascal Gagneux** (*University of California, San Diego*)

This book is an educational endeavor in the unique field of Glycobiology, which has an impact on cell development, differentiation, tumor formation, cancer progression and metastasis, as well as pathogen recognition and binding in infectious diseases. Cell surface glycoconjugates are crucial for cell-cell interaction, are finely regulated during embryonic development and cell differentiation, and are the first receptors encountered during pathogen recognition. Much of the histologic work with lectins involves examination of specific tissues but there is no book so far that compiles the results of lectin histochemistry from different organs in one volume. The first of its kind to catalog the patterns of lectin binding to different tissues of organs in humans and mice, this highly illustrated book will be an important reference in the field of glycobiology.

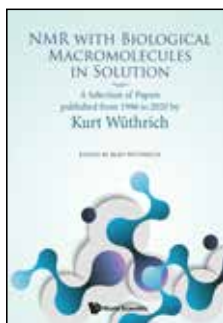
250pp	Jun 2023	
978-1-84816-639-4	US\$106	£88
978-1-84816-641-7(ebook)	US\$170	£135

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Title by Nobel Laureate**NMR WITH BIOLOGICAL MACROMOLECULES IN SOLUTION**

A Selection of Papers Published from 1996 to 2020 by Kurt Wüthrich edited by **Kurt Wüthrich** (*ETH Zürich, Switzerland & The Scripps Research Institute, USA*)



"This is a book that is highly relevant for those working in the biomolecular field using NMR, but also for those interested in recent historical developments in this field. I can strongly recommend the book as a good and interesting read."

Ruth Astrid Olivia Gräslund

Professor in Biophysics, Stockholm University, Sweden

The book provides insights into the research of the Kurt Wüthrich laboratories from 1996 – 2020. During this time period, the technique of nuclear magnetic resonance (NMR) spectroscopy in solution went through several breakthroughs, while maturing into a standard method of structural biology. With the introduction of TROSY (transverse relaxation-optimized spectroscopy), the range of accessible molecular sizes was extended about thirty-fold, and efficient protein structure determination resulted from the demands of the structural genomics initiative. Applications in fundamental biology and biomedicine include studies of prion proteins and prion diseases (TSEs), the SARS-Corona virus proteome, trans-membrane signalling by G protein-coupled receptors (GPCRs), and signal transfer by pheromones.

264pp	Nov 2021	
978-981-123-913-7(pbk)	US\$58	£50
978-981-123-578-8	US\$108	£95
978-981-123-579-5(ebook)	US\$173	£150

METALLOPROTEINS AND METALLOENZYMES

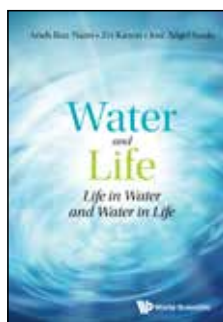
Roles and Mechanisms of Metals in Functional Proteins edited by **Xiangshi Tan** (*Fudan Univ., China*)

Metalloproteins, which contain metal atoms at their active sites, are involved in many biological processes. Nearly half of all proteins require the presence of a metal atom to function, and thus, the metalloprotein is a new hot focus of chemical biology and biomedical science. This review volume addresses the most exciting current research on metalloproteins & metalloenzymes, according to their functional category. It hereby thoroughly devotes developments on substance synthesis, signal transduction, gene regulation, drug metabolism, redox catalysis, catalytic hydrolysis, metal trafficking, metal sensing, rational metalloprotein design, and current approaches for metalloprotein studies. Every functional metalloprotein chapter highlights a series of metalloproteins with structural, functional and mechanical aspects.

400pp	Feb 2023	
978-981-4635-25-7	US\$178	£148
978-981-4635-26-4(ebook)	US\$285	£230

WATER AND LIFE

Life in Water and Water in Life by **Arieh Ben-Naim** (*The Hebrew University of Jerusalem, Israel*), **Zvi Kirson** (*The Hebrew University of Jerusalem, Israel*) & **José Angel Sordo** (*University of Oviedo, Spain*)



This book is unique in presenting all aspects of water. It includes discussion of the theory of a water molecule, its properties, both in the pure state and as a solvent. In particular, it emphasizes the relevance of water to life. Water is the most important liquid. It is also a vital component of all living systems. It has very unusual properties which makes it the most interesting for research and study.

284pp	Mar 2021	
978-981-122-628-1(pbk)	US\$38	£35
978-981-122-550-5	US\$88	£75

Series in Structural Biology

TEXTBOOK OF METALLOPROTEIN STRUCTURAL CHEMISTRY

Metal Ion Routes Between Organisms and the Inorganic World by **Stefano Mangani** (*University of Siena, Italy*)

The book provides a synthetic and exhaustive view of how proteins have evolved their structure to accommodate a variety of metal ions in order to accomplish the most demanding chemical reactions that sustain life. This book may be the subject of a monographic course on its own or may complement bioinorganic chemistry textbooks to obtain a comprehensive view of the structural aspects of this subject. It is directed at advanced undergraduate and graduate students, researchers, instructors, and professors teaching in protein science, biochemistry, cell biology.

This is the first textbook focused on 3D-structures of metalloproteins. It is also a tool for a monographic course on one or more biogeochemical cycles of metal ions. It provides a comprehensive overview of the structural chemistry of metal ions in proteins.

400pp	Feb 2023	
978-981-4460-21-7(pbk)	US\$43	£36
978-981-4460-20-0	US\$78	£65

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JOURNAL OF COMPUTATIONAL BIOPHYSICS AND CHEMISTRY (JCBC)

Formerly known as *Journal of Theoretical and Computational Chemistry*

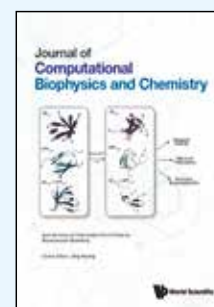
<https://www.worldscientific.com/jcbc>



Near 300% increase in readership in 2021

Impact Factor: 2.44

The journal publishes original contributions on broad aspects: from both the development of fundamental theoretical methodology and computational algorithm to extensive numerical applications to specific scientific problems ranging from gas-phase to condensed phase, and to biological systems. It covers general research areas broadly defined as quantum chemistry, chemical dynamics, statistical mechanics, and chemical biology.

**JOURNAL OF PORPHYRINS AND PHTHALOCYANINES (JPP)**

<https://www.worldscientific.com/jpp>

Impact Factor: 1.914



This journal covers research in the chemistry, physics, biology and technology of porphyrins, phthalocyanines and related macrocycles. Research papers, review articles and short communications deal with the synthesis, spectroscopy, processing and applications of these compounds.



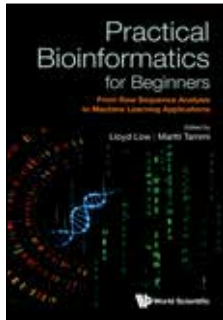
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BIOINFORMATICS

PRACTICAL BIOINFORMATICS FOR BEGINNERS

From Raw Sequence Analysis to Machine Learning Applications
 edited by **Lloyd Low** (*University of Adelaide, Australia*) & **Martti Tammi** (*Tanalink Sdn Bhd, Malaysia*)

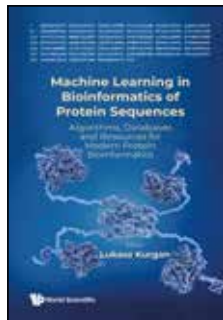


Next-Generation Sequencing (NGS) is increasingly common and has applications in various fields such as clinical diagnosis, animal and plant breeding, and conservation of species. This invaluable book provides step-by-step guides to complex topics that make it easy for readers to perform specific analyses, from raw sequenced data to answer important biological questions using machine learning methods. It is an excellent hands-on material for lecturers who conduct courses in bioinformatics and as reference material for professionals. The chapters are standalone recipes making them suitable for readers who wish to self-learn selected topics.

250pp Dec 2022
 978-981-125-898-5 US\$98 £80
 978-981-125-899-2(ebook) US\$157 £125

MACHINE LEARNING IN BIOINFORMATICS OF PROTEIN SEQUENCES

Algorithms, Databases and Resources for Modern Protein Bioinformatics
 edited by **Lukasz Kurgan** (*Virginia Commonwealth University, USA*)



This book provides a holistic view of the structural bioinformatics by covering a broad spectrum of algorithms, databases and software resources. It spotlights key advances which include deep neural networks, natural language processing-based sequence embedding and covers a wide range of predictions which comprise of tertiary structure, secondary structure, residue contacts, intrinsic disorder, protein, peptide and nucleic acids-binding sites, hotspots, post-translational modification sites, and protein function. This volume is loaded with practical information that identifies and describes leading predictive tools, useful databases, webservers, and modern software platforms for the development of novel predictive tools.

350pp Nov 2022
 978-981-125-857-2 US\$118 £95
 978-981-125-858-9(ebook) US\$189 £150

THE COMPACT KERNEL OF A METABOLIC FLUX BALANCE SOLUTION SPACE

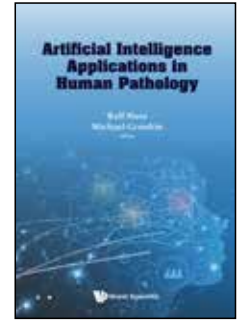
Concepts, Algorithms and Implementation
 by **Wynand S Verwoerd** (*Lincoln University, New Zealand*)

This monograph offers a fundamentally new approach to facilitate the study of metabolic networks in cells. It aims to overcome the limitations of either just a single FBA solution, or an overwhelming number of extreme pathways in a realistic network. Instead it focusses on the FBA solution space and describes it in a simplified way by extracting just a bounded subspace: the Solution Space Kernel or SSK. The book emphasizes the details of implementation in computational code and applications to realistic models are demonstrated.

250pp Sep 2022
 978-981-125-583-0 US\$88 £70
 978-981-125-584-7(ebook) US\$141 £115

ARTIFICIAL INTELLIGENCE APPLICATIONS IN HUMAN PATHOLOGY

edited by **Ralf Huss** (*University Hospital Augsburg, Germany*) & **Michael Grunkin** (*Visiopharm, Denmark*)



“As a cancer doctor, nothing is more foundational for making decisions about treatment than review of the pathology. The wealth of actionable knowledge that can be captured using the powerful techniques collectively referred to as artificial intelligence is beautifully exhibited in this book. These tools will undoubtedly drive critical understanding that will result in better treatment options for patients.”

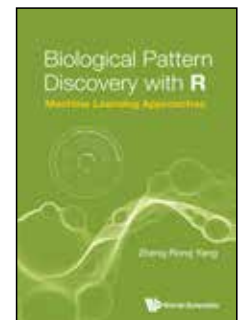
James L Guiley, MD, PhD, FACP
 Chief, Genitourinary Malignancies Branch
 Head, Immunotherapy Group, GMB
 Director, Medical Oncology Service
 Deputy Director, Center for Cancer Research
 National Cancer Institute, NIH

With chapters provided by true international experts in the field, this book gives real examples of the implementation of AI and machine learning in human pathology.

336pp Mar 2022
 978-1-80061-138-2 US\$118 £95
 978-1-80061-139-9(ebook) US\$189 £150

BIOLOGICAL PATTERN DISCOVERY WITH R

Machine Learning Approaches
 by **Zheng Rong Yang** (*University of Exeter, UK*)



This book provides the research directions for new or junior researchers who are going to use machine learning approaches for biological pattern discovery. The chapters are organised to address individual biological pattern discovery problems. For each subject, the research methodologies and the machine learning algorithms which can be employed are introduced and compared. Importantly, each chapter was written with the aim to help the readers to transfer their knowledge in theory to practical implementation smoothly. Therefore, the R programming environment was used for each subject in the chapters.

464pp Oct 2021
 978-981-124-011-9 US\$148 £130
 978-981-124-012-6(ebook) US\$237 £210

Series on Advances in Bioinformatics and Computational Biology - Vol 12

NETWORK-BASED PROTEOMICS

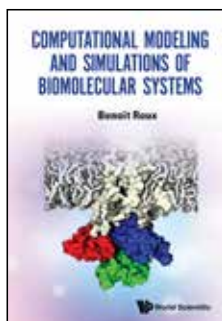
by **Wilson Wen Bin Goh** (*Tianjin University, China*) & **Limsoon Wong** (*National University of Singapore, Singapore*)

The study of network-based proteomics provides a wealth of direct information not inferable from indirect transcriptional measurements. This means that direct protein observations could yield deeper biological insight and the increased development of novel medical interventions.

This timely book offers insights into the technological developments in proteomics and introduces the reader to the issues in proteomic data and their origins. For each issue, key instances of network-based techniques are described alongside their shortcomings and comparative performance-based analysis. Just as proteomic technologies are evolving, so too are the data challenges and possibilities that emerge.

300pp Feb 2023
 978-1-78326-901-3 US\$132 £110
 978-1-78326-902-0(ebook) US\$211 £170



COMPUTATIONAL MODELING AND SIMULATIONS OF BIOMOLECULAR SYSTEMSby **Benoît Roux** (The University of Chicago, USA)

"Written by one of the world's leading computational biophysicists, this textbook presents the theoretical underpinnings of the main approaches used to compute properties of biological molecular systems at atomic detail. It will be invaluable for students and researchers looking for a description from first principles of the mathematical foundations of the computation of such properties as potential surfaces, molecular dynamics and statistical mechanical representations of free energy changes. A unique contribution, the book will be an invaluable component of the libraries of young people who are contemplating performing biomolecular simulations and who are serious about understanding what they are doing."

Jeremy C Smith

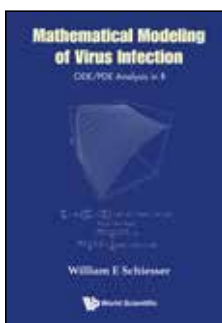
Governor's Chair and Director

University of Tennessee/Oak Ridge National Laboratory

208pp Sep 2021
978-981-123-275-6 US\$78 £70
978-981-123-276-3(ebook) US\$125 £110

MATHEMATICAL MODELING OF VIRUS INFECTION

ODE/PDE Analysis in R

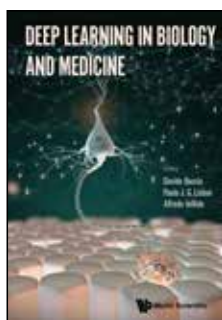
by **William E Schiesser** (Lehigh University, USA)

Two models for the spread and control of a virus are detailed in this book: The Lung/Respiratory System Model (LSM) and the SVIR (Susceptible-Vaccinated-Infected-Recovered) Model. The coding of the models is in R, an open-source scientific computing system, and can be executed on modest computers. The R routines are available from a download link so that the example models can be executed without having to first study numerical methods and computer coding. The routines can then be applied to variations and extensions of the ODE/PDE models, such as changes in the parameters and the form of the model equations.

180pp Apr 2021
978-981-123-663-1 US\$78 £70
978-981-123-664-8(ebook) US\$125 £110

DEEP LEARNING IN BIOLOGY AND MEDICINE

edited by **Davide Bacciu** (University of Pisa, Italy), **Paulo J G Lisboa** (Liverpool John Moores University, UK) & **Alfredo Vellido** (Universitat Politècnica de Catalunya, Spain)

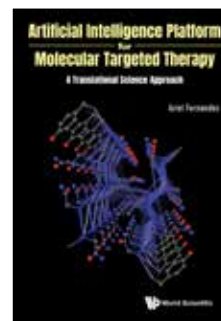


With contributions from internationally renowned experts, the book covers foundational methodologies in a wide spectrum of life sciences applications, including electronic health record processing, diagnostic imaging, text processing, as well as omics-data processing. This survey of consolidated problems is complemented by a selection of advanced applications, including cheminformatics and biomedical interaction network analysis. A modern and mindful approach to the use of data-driven methodologies in the life sciences also requires careful consideration of the associated societal, ethical, legal and transparency challenges, which are covered in the concluding chapters of this book.

332pp Feb 2022
978-1-80061-093-4 US\$118 £95
978-1-80061-094-1(ebook) US\$189 £150

ARTIFICIAL INTELLIGENCE PLATFORM FOR MOLECULAR TARGETED THERAPY

A Translational Science Approach
by **Ariel Fernández** (Former Hasselmann Professor of Bioengineering, Rice University, USA & CONICET, National Research Council, Argentina)



"These problems reach beyond the classical sequence-structure conundrum but are essential for structure-based drug development. This book addresses these problems and opens avenues of research and discovery for structural biologists who may find it very rewarding and of assistance in solving their problems."

Robert Huber
Nobel Laureate

This book focuses precisely on dynamic drug/target interfaces and argues that the true game change in pharmaceutical discovery will come as AI is enabled to solve core problems in molecular biophysics that are intimately related to rational drug design and drug discovery.

468pp Apr 2021
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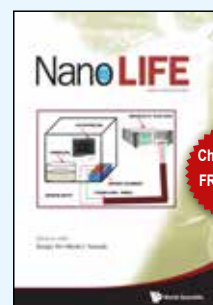
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Volume 2: Emerging Technologies for Fertility

Volume 3: Emerging Technologies for Diagnostics

edited by **Utkan Demirci** (Stanford University, USA), **Rami El Assal** (Stanford University, USA), **Pu Chen** (Wuhan University, China), **Waseem Asghar** (Florida Atlantic University, USA), **Fatih Inci** (Bilkent University-UNAM, Turkey & Stanford University, USA) & **Shuqi Wang** (Sichuan University, China)

Editor-in-chief: **Utkan Demirci** (Stanford University, USA)

Volume 1:

In this volume, notable experts in the field of biofabrication and biomanufacturing summarizes recent rapid progress in this field from multifaceted aspects covering biofabrication techniques and building materials such as scaffold and living cells. A focus is placed on a variety of techniques derived from 3D bioprinting and bioassembly strategies.



Volume 2:

Advanced reproductive technologies (ARTs) are being developed to treat infertility. This handbook explores significant development of ARTs for fertility testing, selection of sperm, oocyte and embryo, reproductive monitors, automation in embryology, and fertility preservation. This volume provides a comprehensive overview of the myriad of emerging technologies and systems that are being utilized or will be utilized in near future in reproductive clinics.

Volume 3:

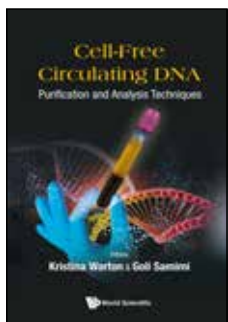
The unprecedented and admirable characteristics of biosensing strategies have expanded our knowledge on medicine and biology by harmonizing materials science, chemistry, physics, and engineering. Biosensors applied in disease diagnostics not only garner more attention in clinical research to decipher disease biology and mechanism also, stimulate innovative perspectives in artificial intelligence and internet of things (IoT) synergistically, thereby their more facile adaptation to daily-use.

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978-981-122-568-0(Set)(ebook)	US\$1920 £1690

CELL-FREE CIRCULATING DNA

Purification and Analysis Techniques edited by **Kristina Warton** (University of New South Wales, Australia) & **Goli Samimi** (National Cancer Institute, USA)

Circulating cell-free DNA is poised to transform cancer diagnosis and care; however, it carries technical challenges such as low abundance, fragmentation and sensitivity to biospecimen handling. Development of clinically useful assays hinges on understanding the unique technical aspects of working with cell-free DNA as a substrate. This book provides an in-depth summary of the technical issues impacting cell-free DNA purification from blood plasma and analysis in a cancer context, including design of PCR assays, sequencing library preparation and methylation analysis. Emerging fields such as extracellular vesicles and blood nucleases are also covered, as well as basic biology and considerations pertinent to biobanking.

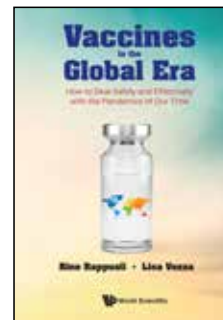


300pp	Aug 2022
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VACCINES IN THE GLOBAL ERA

How to Deal Safely and Effectively with the Pandemics of Our Time

by **Rino Rappuoli** (GlaxoSmithKline Vaccines, Italy) & **Lisa Vozza** (AIRC Foundation for Cancer Research, Italy)

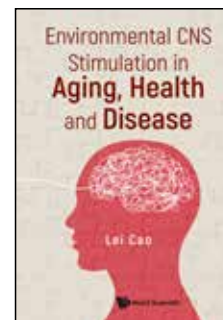


Outbreaks of preventable diseases have prompted the health authorities of several countries to make childhood vaccinations mandatory again. Much remains to be done, but a public capable of distinguishing authoritative voices from misleading ones will be able to enjoy the vaccines of tomorrow more widely. This is an easy-to-read book that can be read by virtually anyone who wants to learn about the importance, effectiveness and safety of vaccines in preventing infectious diseases. Vaccines are cheap, save countless lives, and are more effective than the best medicines.

230pp	Jul 2022
978-1-80061-204-4(pbk)	US\$28 £20
978-1-80061-193-1	US\$48 £40
978-1-80061-194-8(ebook)	US\$98 £80

ENVIRONMENTAL CNS STIMULATION IN AGING, HEALTH AND DISEASE

by **Lei Cao** (The Ohio State University, USA)



Each year, hundreds of millions of animals are used in biomedical research. Yet many experimental studies utilize animals housed in standard conditions conferring minimal physical, social, and mental stimulation. This book summarizes our work on environmental enrichment, a housing condition for laboratory animals, recapitulating an active lifestyle by providing a complex physical, social, and cognitive stimulations. Environmental enrichment exerts a wide range of benefits on energy balance, cancer, immunity, stress, behavior, and healthy aging. One underlying mechanism is the activation of a specific neuroendocrine brain-adipocyte axis with brain-derived neurotrophic factor as the key brain mediator. This book integrates recent discoveries regarding mechanisms, mediators, and biomarkers of environmental enrichment.

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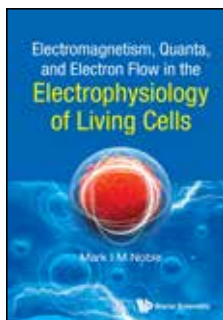
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"It is remarkable that any electron flow through the cellular gels is largely ignored in classical texts on cell physiology, which also incorrectly treat the intracellular milieu as a fluid. Dr Noble offers a novelty and tantalizing challenge to the aspiring physiologist by suggesting the incorporation of electron distribution on the cellular gel proteins in the physiology of electrical and contractile properties. The book, by doing so, brings cell physiology indeed closer to the realm of modern physics."

**Henk E D J ter Keurs**

Professor Emeritus, University of Calgary, Canada

220pp Sep 2021
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BIOTECHNOLOGY**BIOTECHNOLOGY**

Scientific Advancement versus Public Safety

by **Conrad B Quintyn** (Bloomsburg University, USA)

This book is unique as it encompasses many biotechnologies within the definition of biotechnology. It gives a balanced view of biotechnology: its promise as evidenced in repairing mutations (i.e., genetic editing) and its dangers evidenced in creating (unintentionally) dangerous microbes or unregulated germline editing and cloning. Additionally, this book includes animals in biotechnological research because the success, advances, techniques, and science of genetic engineering could not have occurred without using animals (and microorganisms, insects, plants) as model organisms. A comprehensive description of the CRISPR system in bacteria and the exploitation of this knowledge in creating the CRISPR/Cas9 technology is also incorporated in this read.

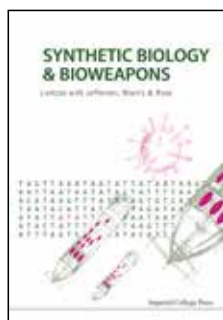


480pp Nov 2022
 978-981-125-925-8 US\$148 £120
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SYNTHETIC BIOLOGY AND BIOWEAPONSby **Filippa Lentzos, Catherine Jefferson, Claire Marris & Nikolas Rose** (King's College London, UK)

Developments in synthetic biology are raising significant security concerns: Will they enable the creation of dangerous viruses from scratch? Will scientific advances enable radically new pathogens not found in nature to be designed? Is synthetic biology breaking down the boundary between experts and non-experts to such an extent that anyone will be able to develop a biological weapon?

Drawing on years of experience working with synthetic biologists, the established team of social scientists behind this book tackle these questions head on in their assessment of whether the misuse potential of synthetic biology is realistic or exaggerated.



180pp Feb 2023
 978-1-78326-766-8(pbk) US\$39 £32
 978-1-78326-765-1 US\$78 £65

AUTHENTICATION OF CHINESE MEDICINAL MATERIALS BY DNA TECHNOLOGY

Techniques and Applications (2nd Edition)

edited by **Pang-Chui Shaw** (The Chinese University of Hong Kong, China), **Hui Cao** (Jinan University, China) & **Yat-Tung Lo** (The Chinese University of Hong Kong, China)**Review of the First Edition:**

"Overall it is a useful book for anyone involved in the authentication and quality control of botanical drugs, but especially those of TCM origin."

Journal of Ethnopharmacology

This book is divided into 5 parts with 18 chapters. Part I reviews the current status of molecular authentication and introduces a wide range of DNA techniques. Part II lists the experimental procedures for molecular authentication. Part III describes the DNA fingerprinting-based techniques. Part IV describes the DNA sequencing-based techniques. Finally, Part V provides an account on the recent advancement in molecular authentication, including guidelines for setting up a proper DNA laboratory and concluding remarks.

345pp Aug 2022
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ORCHID BIOTECHNOLOGY IVedited by **Wen-Huei Chen & Hong-Hwa Chen** (National Cheng Kung University, Taiwan)

The book presents a series of recent work on both basic and applied researches in biotechnology progress for Phalaenopsis, Oncidium and Erycina pusilla orchids. These include breeding of Phalaenopsis orchids of black flower, big-white flower and small and floriferous flowers, physiology for shipping and photosynthesis, SSR markers and mitochondrial DNA markers, virus detection and antiviral immunity, embryogenesis and relationship with mycorrhiza symbiosis, transposon and retrotransposon, orchid genome and evolution, regulation of orchid floral scent, floral color modification, and abiotic stress tolerance. This book provides an up-to-date information on orchid breeding, orchid genome evolution, detection of virus in nanotechnology, molecular markers for cultivar identification for orchid lovers, researchers and industry growers.

452pp Apr 2021
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CANCER RESEARCH

TOBACCO AND CANCER

The Science and the Story
 edited by **Stephen S Hecht** (*University of Minnesota, Twin Cities, USA*) &
Dorothy K Hatsukami (*University of Minnesota, Twin Cities, USA*)



This book tells the fascinating story of the relationship of tobacco products to cancer, from the first discoveries to the present day cancer pandemic and regulatory activities.

In this book, with a primary focus on the United States, the editors bring together 24 renowned experts on the subject of tobacco and cancer to summarize specific aspects of this critical topic in relatively non-technical terms while also incorporating some personal insights related to the story of the discovery process. This highly authoritative book is also expected to be an excellent teaching tool and basis for a course on this important topic.

452pp **Feb 2022**
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CIRCULATING TUMOR CELLS

by **Gary A Clawson** (*Pennsylvania State University, USA*)

This book is designed to give a comprehensive overview of the field of Circulating Tumor Cells (CTCs), which are found in blood of patients with cancer. It includes descriptions of basic techniques used to capture and quantify CTCs, and methods employed to propagate them after capture for downstream study. An overview of various molecular approaches for CTC analysis and characterizations is provided, including their applicability as a "liquid biopsy" and their potential utility for predicting therapeutic response to treatments. A number of aspects involved in the metastatic spread of cancer are also discussed, as well as how quantitation and characteristics of CTCs relate to what is known about the metastatic cascade.

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OPTICAL SPECTROSCOPY AND IMAGING FOR CANCER DIAGNOSTICS

Fundamentals, Progress, and Challenges
 edited by **Noureddine Melikechi** (*University of Massachusetts Lowell, USA*)

This is an interdisciplinary book that presents the applications of novel laser spectroscopy and imaging techniques for the detection of cancers recently developed by some of the world's most renowned researchers. Each chapter is written by leading experts who are actively seeking to develop novel spectroscopic and analytical methods for cancer detection and diagnosis.

Part I presents fundamentals on optics, atoms and molecules, biophysics, cancer and machine learning. Part II presents key applications of various laser spectroscopic methods in cancer diagnosis. Part III discusses key developments in the applications of various laser imaging techniques for cancer detection.

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RNA-BASED MECHANISMS IN CANCER

edited by **Gary Brewer** (*Rutgers University, USA*) &
Gerald M Wilson (*University of Maryland, USA*)

This book presents our current understanding of selected posttranscriptional control mechanisms and the RNAs that they regulate. Each chapter provides an overview of a specific RNA-directed regulatory system and the RNA/protein factors involved, then discusses major findings in the field and their relationships to the development and/or treatment of cancer and associated diseases. Future questions serve to address "where do we go from here" and stimulate the reader's thinking about these important problems.

This compendium of chapters from experts in the field is essential reading for anyone interested in the myriad ways that RNAs contribute to tumorigenesis: from graduate students, researchers, and clinical scientists interested in mRNA processing and translation, RNA-binding proteins that promote turnover/stability of specific mRNAs, how small noncoding RNAs control inflammation and signaling, roles of the epitranscriptome, and future and emerging RNA-based, anti-tumor therapeutics.

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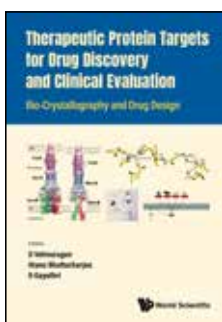
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THERAPEUTIC PROTEIN TARGETS FOR DRUG DISCOVERY AND CLINICAL EVALUATION

Bio-Crystallography and Drug Design
edited by **D Velmurugan** (*SRM University, India*), **Atanu Bhattacharjee** (*North Eastern Hill University, India*) & **D Gayathri** (*University of Madras, India*)



The book reviews the recent research advances and their outcomes in the areas of structural biology, bioinformatics, phytochemistry and drug discovery. Chapters in the book cover multidisciplinary research to understand the molecular mechanisms involved in protein-protein/ligand interactions. It employs an integrative approach to identify the therapeutic targets for HIV, and cancer, pathogen and viral infection pathways and the identification of their potential drug candidates. The book also provides examples of computational molecular dynamics simulations to understand the conformational changes in the molecules.

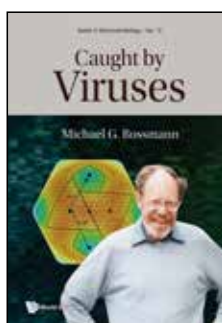
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John R Helliwell

Emeritus Professor of Chemistry, University of Manchester, UK
& DSc in Physics, University of York, UK

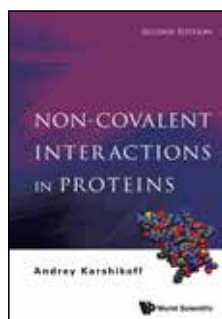
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Emil Alexov

Professor of Biophysics, Clemson University, USA
Editor-in-Chief, Journal of Computational Biophysics & Chemistry

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An Introduction to Epigenetic Mechanisms
by **Vincenzo Pirrotta** (*Rutgers University, USA*)

This book is an introduction to epigenetics, a controversial term that denotes the mechanisms that instruct the genome on how to express the purely genetic information that encodes proteins. Advances in epigenetics in the past 15 years have revealed how it lies at the heart of virtually every branch of biological and medical sciences and an understanding of its basic principles is therefore essential for every student in this field.

The present book has grown out of a course given for the past 13 years to advanced undergraduates at Rutgers University. In keeping with the experience in that course, the book is abundantly illustrated, presents a wealth of specific examples, and includes a chapter describing a number of methods and techniques that have driven the advances in the field.

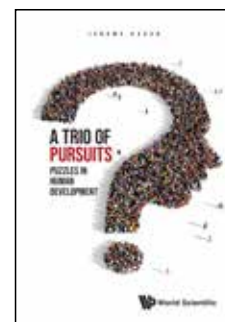
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Puzzles in Human Development
by **Jerome Kagan** (*Harvard University, USA*)

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Elizabeth J Kiel

Associate Professor of Psychology, Miami University, USA

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by **Kian Bee Ng** (*Society for Neuroscience*)

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Professor Kerry Lee

Associate Dean, Science of Learning
Office of Education Research, Psychological Studies
National Institute of Education, Singapore

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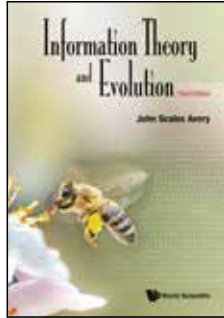
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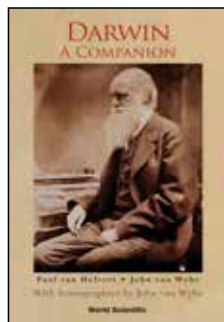
Prof Dudley Herschbach
Nobel Laureate in Chemistry, 1986
Harvard University, USA

328pp	Dec 2021	
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With Iconographies by John van Wyhe by **Paul van Helvert** (Wageningen University & Research in Wageningen, The Netherlands) & **John van Wyhe** (National University of Singapore, Singapore)

"The lengthy iconography (list of portraits) assembled by John van Wyhe is a great resource, perhaps the largest ever compiled for a scientist, including over 1000 works portraying Charles Darwin ... Whatever you want to know about Darwin is probably somewhere in this book, if you can locate the entry. This is a reference book and, at first glance, seems unsuitable for pleasure reading. However, it can be quite enjoyable in small bites, say five pages daily. In about three months, you will be much wiser about Darwin. Anyone who writes about Darwin needs this book at their fingertips."



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Genetic Data Analysis for the Evolutionary Biologist by **Mark Beaumont** (University of Bristol, UK)

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HUMAN CONSCIOUSNESS

The Evolution of Our Sensor of Society

by **Irving C Statler** (NASA Ames Research Center, USA)

This book is about the evolution of human consciousness, but the evolutionary path that the author describes is not precisely in accordance with Darwin's theory of evolution by natural selection of biological adaptation mechanisms. A biological adaptation entails the accumulation of a progression of genetic changes in multiple systems before the next step in an evolution of life forms. The book provides a consistent rationale for the evolutionary progression from the simple, primitive, isolated organism to the complex, intelligent, and social primates. A coherent explanation of why and how human consciousness evolved from elaboration of primary consciousness is given. The question, "What does human consciousness do and why does it do it?" is answered. The book also offers a solution to the dilemma, "How can anything material be conscious?" from my evolutionary approach to understanding human consciousness.

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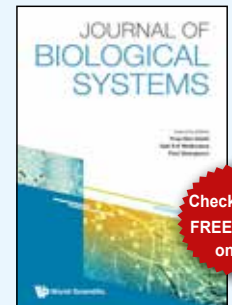
JOURNAL OF BIOLOGICAL SYSTEMS (JBS)

<https://www.worldscientific.com/jbs>

Impact Factor: 1.909

This Journal is published quarterly. The goal of the Journal is to promote interdisciplinary approaches in Biology and in Medicine, and the study of biological situations with a variety of tools, including mathematical and general systems methods. The Journal solicits original research papers and survey articles in areas that include (but are not limited to):

- Complex systems studies; isomorphies; nonlinear dynamics; entropy; mathematical tools and systems theories with applications in Biology and Medicine.
- Interdisciplinary approaches in Biology and Medicine; transfer of methods from one discipline to another; integration of biological levels, from atomic to molecular, macromolecular, cellular, and organic levels; animal biology; plant biology.
- Environmental studies; relationships between individuals, populations, communities and ecosystems; bioeconomics, management of renewable resources; hierarchy theory; integration of spatial and time scales.
- Evolutionary biology; co-evolutions; genetics and evolution; branching processes and phylotaxis.
- Medical systems; physiology; cardiac modeling; computer models in Medicine; cancer research; epidemiology.
- Numerical simulations and computations; numerical study and analysis of biological data.
- Epistemology; history of science.



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This journal covers biomechanics of all levels of biological systems, from cells, tissues, organs to systems, such as cardiovascular and respiratory, neural, muscular and skeletal systems, and from fundamental mechanisms to translational and clinical applications such as biofluids, orthopedics, prosthesis and implants, rehabilitation, prosthetics and orthotics, sports injuries and performance, and medical devices. Theoretical, modeling and experimental methodologies are included.

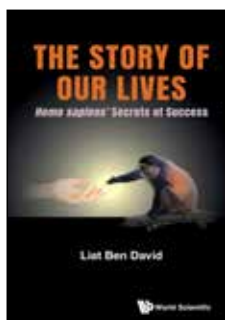


GENERAL LIFE SCIENCES

THE STORY OF OUR LIVES

Homo sapiens' Secrets of Success
by **Liat Ben David** (*The Davidson Institute - the Educational Arm of the Weizmann Institute of Science, Israel*)

"The Story of Our Lives is nothing short of stunning, taking the reader on a journey that is both deeply personal and grounded in close, insightful observation of the natural world. It is a book that brings new insight to one of our most enduring questions: Where did we come from, and how did we become who we are?"



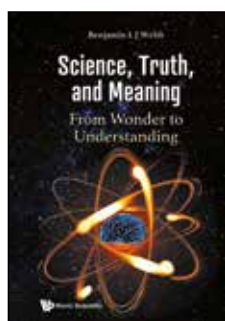
Dr Margaret Honey
President & CEO, New York Hall of Science

244pp	May 2022	
978-981-124-852-8(pbk)	US\$28	£25
978-981-124-734-7	US\$48	£40
978-981-124-735-4(ebook)	US\$98	£80

SCIENCE, TRUTH, AND MEANING

From Wonder to Understanding
by **Benjamin L J Webb** (*Genome Institute of Singapore, A*STAR, Singapore*)

"Science Truth and Meaning is a remarkable book. Ben Webb's synthesis of recent ideas about consciousness and the nature of reality is both brave and timely. While written for the general reader, it maintains a high level of scholarship, and is full of bold and original ideas."



Nicholas Humphrey
Emeritus Professor of Psychology,
London School of Economics
Visiting Professor of Philosophy, New College of the
Humanities, Darwin College Cambridge

720pp	May 2022	
978-981-123-189-6	US\$98	£80
978-981-123-190-2(ebook)	US\$237	£210

SCIENCE, POLITICS, STEM CELLS AND GENES

California's War on Chronic Disease
by **Don C Reed** (*Americans for Cures Foundation, USA*)

Could California afford to spend another \$5.5 billion on stem cell research? "We can't afford NOT to spend it," said Bob Klein, inventor of the program.

The Eiffel Tower was originally intended to be temporary: how tragic if it had been disassembled after a few short months! Similarly, the California stem cell program could have stopped after its original funding was gone; but California had other plans for this world-changing enterprise.

Imagine falling from the edge of space — into a lightning storm — and surviving? Miracles are possible, including the curing of incurable illness.

"There are those around whom the lightnings play, and, so long as their greatness lasts, the fates suspend their dull laws"— Edison Marshal might have been writing about Bob Klein, who dreamed great dreams, and made them real.



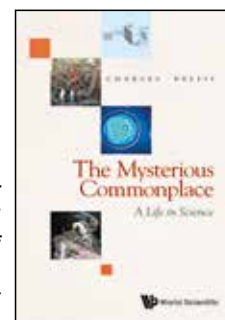
282pp	Sep 2022	
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978-981-126-142-8(ebook)	US\$157	£125

THE MYSTERIOUS COMMONPLACE

A Life in Science
by **Charles DeLisi** (*Boston University, USA*)

"Charles DeLisi's description of his life's meanderings within science makes for fascinating reading. Here is a true intellectual describing incidents within his life that many of us lesser mortals can immediately appreciate. Life's path is rarely smooth and whether dealing with mundane teachers or individuals of the highest intellect one can both learn and be humbled by the experience. ... I would recommend this to anyone looking for inspiration in their career choice and wondering when or if they should change direction."

Sir Richard J Roberts, PhD FRS
Nobel Laureate in Physiology or Medicine, 1993
Chief Scientific Officer, New England Biolabs
Massachusetts, USA



220pp	Nov 2021	
978-981-123-933-5(pbk)	US\$28	£25
978-981-123-845-1	US\$58	£50
978-981-123-846-8(ebook)	US\$98	£80

CORRUPT CULTURES

Cheating in Science and Society
by **Roy Yorke Calne**

This book is concerned with cheating in Science and the harm that it does, concentrating on three disasters in cell culture, which caused international concern and personal tragedy for the perpetrators. There is an overview of plant, animal and human cheating, providing a background to the focus on Science. This demands a special form of truth in that claims need to be substantiated by repetition in independent laboratories to confirm that the claims work. The nature of originality is examined in art and Science.

An attempt has been made to determine the background and motives for cheating in Science in the certain knowledge that it will be unmasked leading to scandal. Advice is given to the young Scientist and suggestions have been made as to how fraud in Science could be reduced by more regulated supervision.

120pp	Oct 2021	
978-1-78634-560-8	US\$38	£35
978-1-78634-561-5(ebook)	US\$98	£80

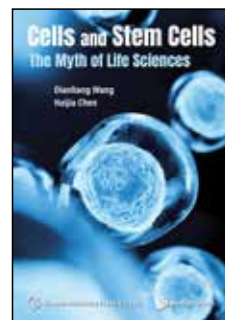
**CELLS AND STEM CELLS**

The Myth of Life Sciences
by **Dianliang Wang** (*China Association for Science and Technology, China*) & **Haijia Chen** (*Guangzhou Saliat Stem Cell Science and Technology Co., Ltd., China*)

"Cells and Stem Cells: The Myth of Life Sciences describes the basic concepts, theories and technologies of cells and stem cells. It's a really good book for children to get knowledge of life sciences, even for adults. In here, I love to recommend this illustrated book to my friends and their kids."

Christopher A Pissarides
Academician of the British Academy of Social Sciences,
Winner of the Nobel Prize in Economics in 2010

240pp	Nov 2021	
978-981-123-978-6(pbk)	US\$28	£25
978-981-123-877-2	US\$58	£50
978-981-123-878-9(ebook)	US\$98	£80

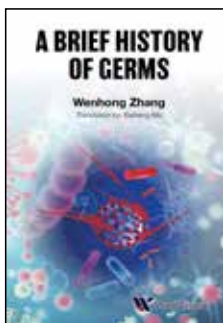


A BRIEF HISTORY OF GERMS

by **Wenhong Zhang** (*Huashan Hospital of Fudan University, China*)

Translated by **Bailiang Ma** (*Shanghai Ocean University, China*)

This book introduces readers to the history and discovery of viruses and bacteria, provides an accessible overview of how several major pandemics have influenced the society and how vaccines and antibiotics were developed. With colorful illustrations, it narrates the fascinating stories behind 17 common infectious diseases. From this book, you will learn about pathogenic characteristics, main symptoms, transmission routes, as well as prevention and control strategies. By highlighting the difficulties in the struggle against infectious diseases, the book pays homage to the efforts, the scientific spirit and the great contributions of scientists. With the pandemic still raging around the globe, it is hoped that this book will broaden people's horizon, arouse their interest and strengthen their confidence.

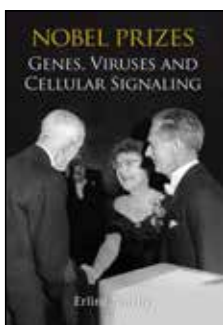


170pp **Oct 2022**
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978-1-945552-13-7(ebook) **US\$98** **£80**

NOBEL PRIZES

Genes, Viruses and Cellular Signaling
 by **Erling Norrby** (*The Royal Swedish Academy of Sciences, Sweden*)

"The fifth installment of Erling Norrby's history of the Nobel prizes is yet another fascinating look back in science history. Exploiting written records that become available 50 years after the committee's deliberations, Norrby brings to life the science and times, and the personal histories, of not only the laureates but also those who were nominated but never received the prize. A masterful job, once again."



Charles M Rice
 Nobel laureate in Physiology or Medicine, 2020

400pp **Sep 2022**
978-981-126-213-5(pbk) **US\$58** **£45**
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GENES, GERMS AND MEDICINE

The Life of Joshua Lederberg
 by **Jan Sapp** (*York University, Canada*)

"Sapp presents an engaging biography of Nobel laureate Joshua Lederberg whose prophetic insights into biological warfare, bioterrorism, and pandemic preparedness, were years ahead of his time. Sapp draws on a broad array of sources to interweave Lederberg's personal biography and professional life. The writing is very good throughout ... the text effectively portrays the life and work of one of the 20th century's most brilliant and effective scientists. Summing Up: Recommended."



CHOICE

The book explores the development of modern biomedical science in the United States through the life of one of the Twentieth Century's most influential scientists.

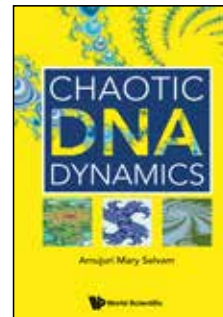
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978-981-122-548-2(ebook) **US\$157** **£135**

GENETICS AND GENOMICS

CHAOTIC DNA DYNAMICS

by **Amujuri Mary Selvam** (*Indian Institute of Tropical Meteorology, India*)

A general systems theory model predicts quasiperiodic Penrose tiling pattern for the nested coiled structure of the DNA molecule in the chromosome resulting in maximum packing efficiency and unified whole fuzzy logic network architecture with ordered two-way signal transmission between the coding and non-coding (junk DNA) regions.



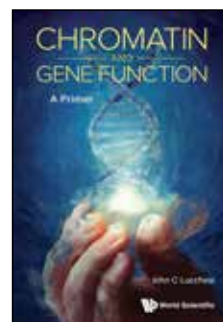
Junk DNA are not redundant. Modification of the DNA base sequence structure at any location may have significant noticeable effects on the function of the DNA molecule as a whole. This book helps us understand the cooperative existence of individual components for optimum performance of the system.

244pp **Jun 2022**
978-981-124-285-4 **US\$88** **£75**
978-981-124-286-1(ebook) **US\$141** **£115**

CHROMATIN AND GENE FUNCTION

A Primer
 by **John C Lucchesi** (*Emory University, USA*)

It is universally accepted that DNA is the carrier of the genetic information that is transmitted from parents to their offspring and that it is responsible for the anatomy, physiology and behavior of all individuals throughout development and adult life. Yet, how this information is retrieved and used selectively to allow a fertilized egg to become an organism made up of myriads of different cells and tissues is not as evident and easily understood.



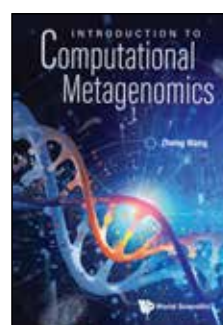
Dr Lucchesi, an internationally known researcher and teacher, provides an easily opened window into the role that the complex of proteins and nucleic acids that are associated with the DNA play in mediating gene expression and in responding to environmental circumstances.

200pp **Jan 2023**
978-981-125-893-0(pbk) **US\$48** **£40**
978-981-125-843-5 **US\$88** **£70**
978-981-125-844-2(ebook) **US\$141** **£115**

INTRODUCTION TO COMPUTATIONAL METAGENOMICS

by **Zhong Wang** (*DOE Joint Genome Institute, USA & Lawrence Berkeley National Lab, USA*)

"This book combines the fundamental knowledge of data science and microbiology. It clearly shows the research goals and obstacles of microbiomics, and accurately introduces the practical knowledge and tools of computational science. This book is the perfect "primer" for beginners in metagenomics. It is friendly for computer science background readers. You can understand and gain a lot from it even with minimal prior biologic knowledge."



Li Deng
 Associate Professor, Shanghai University

The book look through various intricate computational metagenomics problems and unravel their three distinctive aspects: metagenomics, data engineering, and algorithms.

212pp **May 2022**
978-981-124-246-5 **US\$88** **£70**
978-981-124-247-2(ebook) **US\$141** **£115**

MICROBIOLOGY

MAN VERSUS MICROBE

What Will It Take to Win?

by **Brian Bremner** (*Bloomberg LP, UK*)

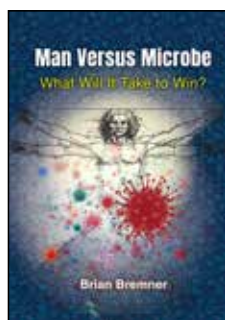
"Brian Bremner brilliantly captures the promise and peril of the biological revolution underway. Imagine a world where bad actors could write DNA for any deadly pathogen on a lab benchtop synthesizer. Soon this will be science fact, not fiction."

Andrew C Weber, former Assistant Secretary of Defense for Nuclear Chemical and Biological Defense Programs

"Man Versus Microbe is an inspiring exploration into biology and the unlimited opportunity it presents for our collective future. The technology to enable a brighter future with biology exists, now the world needs bold leadership; leadership that can bring together the best in science, business, and government to improve the climate and food security, and potentially avoid future pandemics. Brian Bremner successfully brings this struggle to life through this insightful book."

Ester Baiget

President and Chief Executive Officer of Novozymes A/S



324pp
 978-1-80061-120-7 (pbk) **May 2022**
 US\$28 £25
 978-1-80061-113-9
 US\$68 £55
 978-1-80061-114-6 (ebook) **US\$109 £85**

UNCOVERING THE SCIENCE OF COVID-19

edited by **Vincent T K Chow** (*National University of Singapore, Singapore*) & **Sunil K Lal** (*Monash University Malaysia, Malaysia*)

The COVID-19 pandemic has disrupted lives and livelihoods all over the world by its myriad of twists and turns. The causative SARS coronavirus 2 continues to defy the imagination by its rapid evolution from the Alpha to Delta to Omicron variants. This book aims to uncover the scientific basis underpinning the virus characteristics, as well as the clinical and public health management of COVID-19. The ten chapters address and discuss a broad range of key topics including viral evolution, clinical management, diagnostic methodologies, aerosol transmission, public health containment measures, vaccination, pathophysiology, and omics analyses.

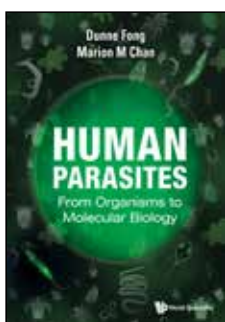


200pp
 978-981-125-432-1 **Sep 2022**
 US\$78 £60
 978-981-125-433-8 (ebook) **US\$125 £100**

HUMAN PARASITES

From Organisms to Molecular Biology
 by **Dunne Fong** (*Rutgers, The State University of New Jersey, USA*) & **Marion M Chan** (*Temple University, USA*)

The aim of this textbook is to introduce a modern synthesis on human parasites of medical importance. Species of parasitic protozoa and helminths are presented in detail, from history and discovery to aspects of genomes and molecular biology, together with life cycle, therapy, drug resistance, and case studies of parasitic diseases useful to the clinicians.



668pp
 978-981-123-626-6 **May 2022**
 US\$148 £120
 978-981-123-627-3 (ebook) **US\$237 £190**

INFLUENZA VIRUS

The Inevitable Enemy

by **Fu Gao** (*Chinese Center for Disease Control and Prevention, China*) & **Huan Liu** (*University of Science and Technology of China, China*)

This book will guide readers through the history of the flu. Influenza always seems to have endless topics. The flu virus, seemingly tiny, has brought on one disaster after another to human beings. 2018 is the 100th anniversary of the outbreak of the "1918 Flu" that swept the world. The flu, a century ago, claimed nearly one-twentieth of human life on the planet. Then it was the most deadly flu in human history.

This book introduces the past and present life of the influenza virus in a light-hearted way, leading the reader to review the past from the history of the flu, the development of the flu, human immunity and health, society and the country. Through touching stories, illustrations and diagrams, it tells the great discoveries and related advances in science and technology, introduces medical knowledge related to influenza, and reviews the medical effectiveness in preventing influenza, thus displaying the ongoing battle between humans and the flu virus.

260pp
 978-981-125-621-9 **Oct 2022**
 US\$88 £70
 978-981-125-622-6 (ebook) **US\$141 £115**

UNDERSTANDING THE ORIGIN AND GLOBAL SPREAD OF COVID-19

edited by **Nalin Chandra Wickramasinghe** (*University of Buckingham, UK*), **Reginald M Gorczyński** (*University of Toronto, Canada*) & **Edward J Steele** (*Melville Analytics Pty Ltd, Melbourne, Australia*)

This curated collection of scientific papers on the origin and global spread of COVID-19 is a unique project that offers explanations at odds with mainstream views as the theme mainly focuses on Panspermia (viruses, microorganisms and their spores, and cometary arrival of even more complex cellular organisms). No other scientific group has paid attention to the temporal unfolding scientific order at the many required levels of understanding — astrobiological and astrophysical, geographical and the temporal order of global proportions, yet regional epidemics, the immunologic dimensions to the infection and epidemic data, the genetics of the SARS-CoV-2 virus as it adapted, varied and appeared in different human populations in the crucial first few months of the pandemic.

300pp
 978-981-125-907-4 **Sep 2022**
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Articles contributed by Nobel laureates and winners of the Wolf Prize including Frances H. Arnold, Emmanuelle Charpentier, Jennifer Doudna, Robert Langer, Gerard 't Hooft, Jack W. Szostak, Arvid Carlsson, Richard N. Zare, Omar M. Yaghi, Paul Alivisatos, Yuan Tseh Lee.



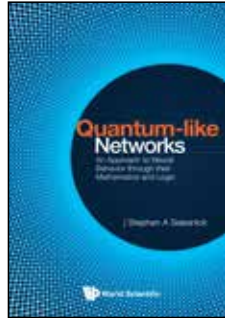
NEUROBIOLOGY / NEUROANATOMY

QUANTUM-LIKE NETWORKS

An Approach to Neural Behavior through their Mathematics and Logic by **Stephen A Selesnick** (*University of Missouri-St Louis, USA*)

"In this book, Stephen Selesnick extends his groundbreaking quantum-like model of neural dynamics, built from logical and physical first principles, to provide a novel, rigorous, and systematic treatment of neural computation.

Then he derives many fundamental properties of neural systems, such as Hebbian learning and Tsien's Power-of-Two Law of neural connectivity, shedding new light on them. A brilliant achievement."



Gualtiero Piccinini
Curators' Distinguished Professor of Philosophy, University of Missouri-St. Louis, USA

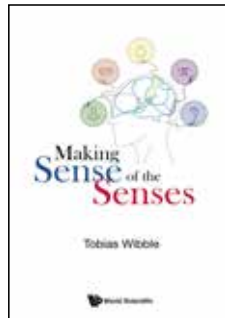
Do brains compute? How do they do it? The first part introduces the development of a model that simulates actual biological neurons more closely than do current standard models of neural networks. The second part presents a collection of applications of the model to memory formation and loss, a general syntax for memory retrieval, language itself, and certain forms of aphasia.

650pp **Oct 2022**
978-981-126-069-8 **US\$118** **£95**
978-981-126-070-4(ebook) **US\$189** **£150**

MAKING SENSE OF THE SENSES

by **Tobias Wibble** (*Karolinska Institutet, Sweden*)

The book provides an easily understandable and engaging overview of the senses. The book allows readers insights into how humans and other animals perceive the world, reflecting a level of knowledge similar to that acquired by studying neuroscience at an undergraduate level. In order to offer an accessible introduction to the science, it uses relatable examples to uncover the history, evolution, and biological principles of the way we see, smell, hear, taste, touch and more.



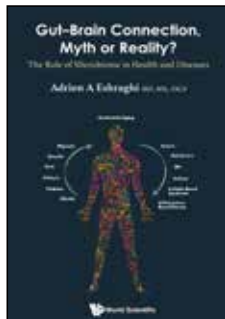
268pp **Jul 2022**
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GUT-BRAIN CONNECTION, MYTH OR REALITY?

Role of the Microbiome in Health and Diseases

edited by **Adrien A Eshraghi** (*University of Miami, USA*)

In this book the recent advancements in understanding the gut-brain interaction as well as gut microbiome and how this interaction plays a vital role in human health and disease are discussed. Each chapter gives an analysis of questions, research directions, and methods within the field of gut-brain axis. The readers will benefit from the latest knowledge about our understanding about how gut-brain axis and modulation of gut microbiome determines predisposition to neurological disorders. The multidisciplinary book is essential reading for anyone interested in the field of gut-brain axis and gut microbiome: from undergraduates to graduate students as well as scientists and physicians having an interest in the new exciting field of gut microbiome and its relationship with brain function.



396pp **Dec 2021**
978-981-122-114-9 **US\$128** **£115**
978-981-122-115-6(ebook) **US\$205** **£185**

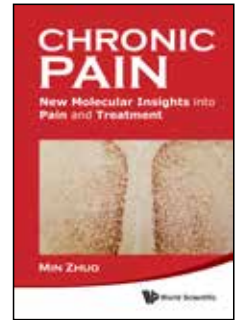
CHRONIC PAIN

New Molecular Insights into Pain and Treatment

by **Min Zhuo** (*University of Toronto, Canada*)

This book successfully explores cellular and molecular mechanisms of chronic pain based on recent basic neurobiological investigations. By focusing on major breakthroughs in basic neurosciences, it is believed to contain the promise for future new pain drug discovery.

The book provides a novel neuronal model that is believed to be the key target for treating chronic pain. In addition, it reviews and validates animal models developed for studying basic mechanisms of pain and chronic pain, and the current medicine used to treat chronic pain as well as alternative pain treatment.



400pp **Feb 2023**
978-981-4324-52-6 **US\$166** **£138**
978-981-4324-53-3(ebook) **US\$266** **£210**

ZOOLOGY

RAFFLES' BANDED LANGUR

The Elusive Monkey of Singapore and Malaysia

by **Andie Ang** (*Mandai Nature, Singapore & Raffles' Banded Langur Working Group, Singapore*) & **Sabrina Jabbar** (*Mandai Nature, Singapore & Raffles' Banded Langur Working Group, Singapore*)



This book is a one-stop resource for everything we know about the critically endangered primate that is only found in Singapore and Malaysia, including its distribution, diet, family structure, infant development, threats and conservation. Exclusive high-quality photographs of the langurs are featured with family trees illustrating individually-named langurs. This book showcases the diverse habitats of the Raffles' banded langurs, bringing us from the freshwater swamp forest in Singapore to the steep slopes of Gunung Lambak and the primary rainforests of Endau Rompin National Park in Johor, Malaysia.

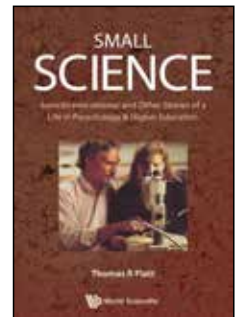
100pp **Mar 2022**
978-981-124-146-8 **US\$29.90** **£25**
978-981-124-147-5(ebook) **US\$98** **£80**

SMALL SCIENCE

Baracktrema obamai and Other Stories of a Life in Parasitology & Higher Education

by **Thomas R Platt** (*Saint Mary's College, Notre Dame, USA*)

"SMALL SCIENCE is a big book. A frank memoir of Tom Platt's life as a distinguished parasitologist committed to engaging undergraduates in real research, this book is both a detailed celebration of some amazing organisms and a tribute to the scientists and students who come alive in studying them. Platt's voice is intimate, reflective, thoughtful, funny, and focused; and his story will reward anyone interested in science, higher education, and the life of learning in our time."



Patrick E White
President Emeritus, Millikin University, USA

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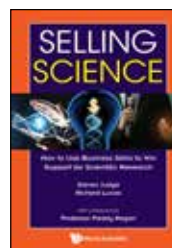
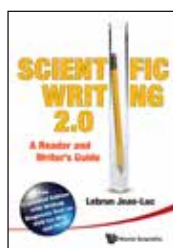
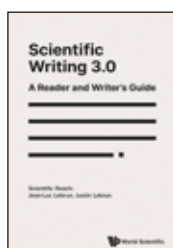
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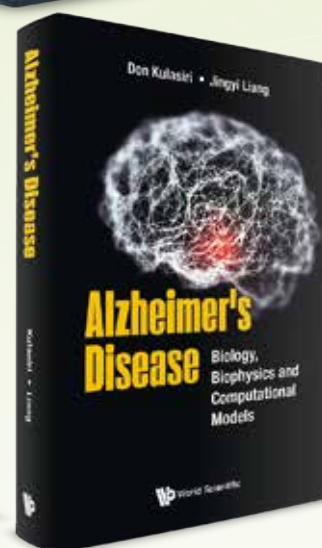
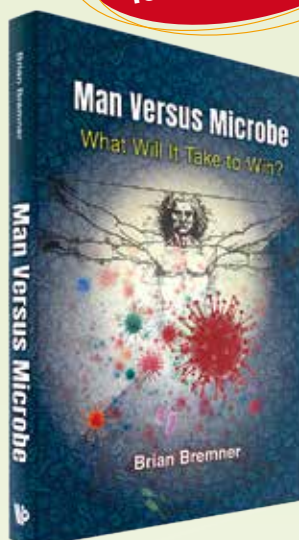
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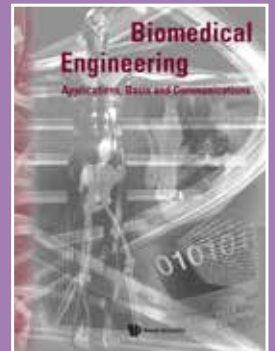
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