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### KEY=TOPOLOGY - GEORGE MCNEIL

**Principles of Medical Biochemistry E-Book** *Elsevier Health Sciences* For nearly 30 years, Principles of Medical Biochemistry has integrated medical biochemistry with molecular genetics, cell biology, and genetics to provide complete yet concise coverage that links biochemistry with clinical medicine. The 4th Edition of this award-winning text by Drs. Gerhard Meisenberg and William H. Simmons has been fully updated with new clinical examples, expanded coverage of recent changes in the field, and many new case studies online. A highly visual format helps readers retain complex information, and USMLE-style questions (in print and online) assist with exam preparation. Just the right amount of detail on biochemistry, cell biology, and genetics - in one easy-to-digest textbook. Full-color illustrations and tables throughout help students master challenging concepts more easily. Online case studies serve as a self-assessment and review tool before exams. Online access includes nearly 150 USMLE-style questions in addition to the questions that are in the book. Glossary of technical terms. Clinical Boxes and Clinical Content demonstrate the integration of basic sciences and clinical applications, helping readers make connections between the two. New clinical examples have been added throughout the text. **Modern Methods of Organic Synthesis South Asia Edition** *Cambridge University Press Textbook on modern methods of organic synthesis. Quantity and Quality in Social Research* *Routledge* First published in 1988. Routledge is an imprint of Taylor & Francis, an informa company. **Modern Carbonyl Olefination Methods and Applications** *John Wiley & Sons* While this important reaction class is among the most important and most widely used in organic chemistry, this is the first book to summarize the many different olefination methods, including: \* Wittig reaction \* Peterson reaction \* Julia olefination \* Utilizing the Tebbe and related reagents \* Low-valent chromium, zinc or titanium mediated olefination \* McMurry coupling plus the related reactions in each case and the application to asymmetric synthesis. It thus collates in one ready reference the current level of knowledge as well as new developments in this constantly evolving field -- information which until now has been dispersed throughout the literature. **151 Trading Strategies** *Springer* The book provides detailed descriptions, including more than 550 mathematical formulas, for more than 150 trading strategies across a host of asset classes and trading styles. These include stocks, options, fixed income, futures, ETFs, indexes, commodities, foreign exchange, convertibles, structured assets, volatility, real estate, distressed assets, cash, cryptocurrencies, weather, energy, inflation, global macro, infrastructure, and tax arbitrage. Some strategies are based on machine learning algorithms such as artificial neural networks, Bayes, and k-nearest neighbors. The book also includes source code for illustrating out-of-sample backtesting, around 2,000 bibliographic references, and more than 900 glossary, acronym and math definitions. The presentation is intended to be descriptive and pedagogical and of particular interest to finance practitioners, traders, researchers, academics, and business school and finance program students. **Accelerated Aging: Photochemical and Thermal Aspects** *Getty Publications* Accelerated Aging: Photochemical and Thermal Aspects represents the culmination of more than 40 years of research by noted scientist Robert L. Feller. The book focuses on the long-term performance of materials such as wool, dyes, and organic compounds; their resistance to change when exposed to environmental factors such as oxygen, ozone, moisture, heat, and light; and their physical durability with handling and use over time. Processes of deterioration are discussed based on speeded-up laboratory studies designed to clarify the chemical reactions involved and their physical consequences. **Ultra-High Performance Liquid Chromatography and Its Applications** *John Wiley & Sons* Explores both the benefits and limitations of new UHPLC technology High performance liquid chromatography (HPLC) has been widely used in analytical chemistry and biochemistry to separate, identify, and quantify compounds for decades. The science of liquid chromatography, however, was revolutionized a few years ago with the advent of ultra-high performance liquid chromatography (UHPLC), which made it possible for researchers to analyze sample compounds with greater speed, resolution, and sensitivity. Ultra-High Performance Liquid Chromatography and Its Applications enables readers to maximize the performance of UHPLC as well as develop UHPLC methods tailored to their particular research needs. Readers familiar with HPLC methods will learn how to transfer these methods to a UHPLC platform and vice versa. In addition, the book explores a variety of UHPLC applications designed to support research in such fields as pharmaceuticals, food safety, clinical medicine, and environmental science. The book begins with discussions of UHPLC method development and method transfer between HPLC and UHPLC platforms. It then examines practical aspects of UHPLC. Next, the book covers: Coupling UHPLC with mass spectrometry Potential of shell particles in fast liquid chromatography Determination of abused drugs in human biological matrices Analyses of isoflavones and flavonoids Therapeutic protein characterization Analysis of illicit drugs The final chapter of the book explores the use of UHPLC in drug metabolism and pharmacokinetics studies for traditional Chinese medicine. With its frank discussions of UHPLC's benefits and limitations, Ultra-High Performance Liquid Chromatography and Its Applications equips analytical scientists with the skills and knowledge needed to take full advantage of this new separation technology. **Markov Chains and Stochastic Stability** *Cambridge University Press* New up-to-date edition of this influential classic on Markov chains in general state spaces. Proofs are rigorous and concise, the range of applications is broad and knowledgeable, and key ideas are accessible to practitioners with limited mathematical background. New commentary by Sean Meyn, including updated references, reflects developments since 1996. **THE HUMAN SKELETON IN FORENSIC MEDICINE (3rd Ed.)** *Charles C Thomas Publisher* This classic in forensic anthropology has been thoroughly updated and greatly expanded for the new Third Edition. The result presents the state of the medicolegal art of investigating human skeletal remains. The third edition follows more than 25 years after the second edition. During this time, considerable changes occurred in the field and Forensic Anthropology became a distinct specialty in its own right. Included in the book are detailed discussions on crime scene investigation, including excavation techniques, time interval since death, human or animal remains, mass graves, and preparation of remains. Existing chapters, all dramatically revised, bring readers in line with the current concepts of skeletal age; determination of sex; assessment of ancestry; calculation of stature; factors of individualization; superimposition and restoration of physiognomy. There is also a section on dental analysis examining such topics as dental anatomy, nomenclature, estimation of age in subadults and adults, determination of sex and ancestry, and pathological conditions. New additions are chapters on skeletal pathology and trauma assessment. A new chapter has also been added on "Forensic Anthropology of the Living." Although all of the sections of the book have been updated significantly, the authors have retained some sense of history to recognize the many pioneers that have shaped the discipline. The text will assist forensic anthropologists and forensic pathologists who have to analyze skeletons found in forensic contexts. This book has a global perspective in order to make it usable to practitioners across the world. Where possible, short case studies have been added to illustrate the diverse aspects of the work. **Feedback Control in Systems Biology** *CRC Press* Like engineering systems, biological systems must also operate effectively in the presence of internal and external uncertainty—such as genetic mutations or temperature changes, for example. It is not surprising, then, that evolution has resulted in the widespread use of feedback, and research in systems biology over the past decade has shown that feedback control systems are widely found in biology. As an increasing number of researchers in the life sciences become interested in control-theoretic ideas such as feedback, stability, noise and disturbance attenuation, and robustness, there is a need for a text that explains feedback control as it applies to biological systems. Written by established researchers in both control engineering and systems biology, *Feedback Control in Systems Biology* explains how feedback control concepts can be applied to systems biology. Filling the need for a text on control theory for systems biologists, it provides an overview of relevant ideas and methods from control engineering and illustrates their application to the analysis of biological systems with case studies in cellular and molecular biology. **Control Theory for Systems Biologists** The book focuses on the fundamental concepts used to analyze the effects of feedback in biological control systems, rather than the control system design methods that form the core of most control textbooks. In addition, the authors do not assume that readers are familiar with control theory. They focus on "control applications" such as metabolic and gene-regulatory networks rather than aircraft, robots, or engines, and on mathematical models derived from classical reaction kinetics rather than classical mechanics. Another significant feature of the book is that it discusses nonlinear systems, an understanding of which is crucial for systems biologists because of the highly nonlinear nature of biological systems. The authors cover tools and techniques for the analysis of linear and nonlinear systems; negative and positive feedback; robustness analysis methods; techniques for the reverse-engineering of biological interaction networks; and the analysis of stochastic biological control systems. They also identify new research directions for control theory inspired by the dynamic characteristics of biological systems. A valuable reference for researchers, this text offers a sound starting point for scientists entering this fascinating and rapidly developing field. **Comparative Anatomy and Phylogeny of Primate Muscles and Human Evolution** *CRC Press* This book challenges the assumption that morphological data are inherently unsuitable for phylogeny reconstruction, argues that both molecular and morphological phylogenies should play a major role in systematics, and provides the most comprehensive review of the comparative anatomy, homologies and evolution of the head, neck, pectoral and upper limb muscles of primates. Chapters 1 and 2 provide an introduction to the main aims and methodology of the book. Chapters 3 and 4 and Appendices I and II present the data obtained from dissections of the head, neck, pectoral and upper limb muscles of representative members of all the major primate groups including modern humans, and compare these data with the information available in the literature. Appendices I and II provide detailed textual (attachments, innervation, function, variations and synonyms) and visual (high quality photographs) information about each muscle for the primate taxa included in the cladistic study of Chapter 3, thus providing the first comprehensive and up to date overview of the comparative anatomy of the head, neck, pectoral and upper limb muscles of primates. The most parsimonious tree obtained from the cladistic analysis of 166 head, neck, pectoral and upper limb muscle characters in 18 primate genera, and in representatives of the Scandentia, Dermoptera and Rodentia, is fully congruent with the evolutionary molecular tree of Primates, thus supporting the idea that muscle characters are particularly useful to infer phylogenies. The combined anatomical materials provided in this book point out that modern humans have fewer head, neck, pectoral and upper limb muscles than most other living primates, but are consistent with the proposal that facial and vocal communication and specialized thumb movements have probably played an important role in recent human evolution. This book will be of interest to primatologists, comparative anatomists, functional morphologists, zoologists, physical anthropologists, and systematists, as well as to medical students, physicians and researchers interested in understanding the origin, evolution, homology and variations of the muscles of modern humans. Contains 132 color plates. **The Prefrontal Cortex Anatomy, Physiology, and Neuropsychology of the Frontal Lobe** *Lippincott Williams & Wilkins* **Networks and Geographies of Global Social Policy** *Diffusion Culture, Economy, and Colonial Legacies* *Springer Nature* This open access book analyses the global diffusion of social policy as a process driven by multiplex ties between countries in global social networks. The contributions analyze links between countries via global trade, colonial history, similarity in culture, and spatial proximity. Networks are viewed as the structural backbone of the diffusion process, and diffusion is analysed via several subfields of social policy, in order to interrogate which network dimensions drive this process. The focus is on a global perspective of social policy diffusion via networks, and it is the first book to explicitly follow this macro-quantitative perspective on diffusion at a global scale whilst also comparing different networks. The collection tests the network structures in terms of their relevance to the diffusion process in different subfields of social policy such as old age and survivor pensions, labor and labor markets, health and long-term care, education and training, and family

and gender policy. The book will therefore be invaluable to students and researchers of global social policy, sociology, political science, international relations, organization theory and economics. American Psychiatric Association Practice Guidelines *American Psychiatric Publishing* The aim of the American Psychiatric Association Practice Guideline series is to improve patient care. Guidelines provide a comprehensive synthesis of all available information relevant to the clinical topic. Practice guidelines can be vehicles for educating psychiatrists, other medical and mental health professionals, and the general public about appropriate and inappropriate treatments. The series also will identify those areas in which critical information is lacking and in which research could be expected to improve clinical decisions. The Practice Guidelines are also designed to help those charged with overseeing the utilization and reimbursement of psychiatric services to develop more scientifically based and clinically sensitive criteria. Handbook of Applied Cryptography *CRC Press* Cryptography, in particular public-key cryptography, has emerged in the last 20 years as an important discipline that is not only the subject of an enormous amount of research, but provides the foundation for information security in many applications. Standards are emerging to meet the demands for cryptographic protection in most areas of data communications. Public-key cryptographic techniques are now in widespread use, especially in the financial services industry, in the public sector, and by individuals for their personal privacy, such as in electronic mail. This Handbook will serve as a valuable reference for the novice as well as for the expert who needs a wider scope of coverage within the area of cryptography. It is a necessary and timely guide for professionals who practice the art of cryptography. The Handbook of Applied Cryptography provides a treatment that is multifunctional: It serves as an introduction to the more practical aspects of both conventional and public-key cryptography. It is a valuable source of the latest techniques and algorithms for the serious practitioner. It provides an integrated treatment of the field, while still presenting each major topic as a self-contained unit. It provides a mathematical treatment to accompany practical discussions. It contains enough abstraction to be a valuable reference for theoreticians while containing enough detail to actually allow implementation of the algorithms discussed. Now in its third printing, this is the definitive cryptography reference that the novice as well as experienced developers, designers, researchers, engineers, computer scientists, and mathematicians alike will use. Heart Rate Variability *Springer Science & Business Media* This book not only discusses clinical applications, but also links HRV to systems biology and theories of complexity. This publication should be interesting for several groups of clinicians and scientists, including cardiologists, anesthesiologists, intensivists and physiologists. Heart Rate Variability is in principle easy and cheap, making it interesting for all kind of hospitals and private practice. The book will be an example of using translational medicine (bench to bedside) where newest theoretical results are linked to newest clinical research. Metal Nanoparticles in Microbiology *Springer Science & Business Media* Following an introduction to biogenic metal nanoparticles, this book presents how they can be biosynthesized using bacteria, fungi and yeast, as well as their potential applications in biomedicine. It is shown that the synthesis of nanoparticles using microbes is eco-friendly and results in reproducible metal nanoparticles of well-defined sizes, shapes and structures. This biotechnological approach based on the process of biomineralization exploits the effectiveness and flexibility of biological systems. Chapters include practical protocols for microbial synthesis of nanoparticles and microbial screening methods for isolating a specific nanoparticle producer as well as reviews on process optimization, industrial scale production, biomolecule-nanoparticle interactions, magnetosomes, silver nanoparticles and their numerous applications in medicine, and the application of gold nanoparticles in developing sensitive biosensors. Foundations of Probabilistic Programming *Cambridge University Press* This book provides an overview of the theoretical underpinnings of modern probabilistic programming and presents applications in e.g., machine learning, security, and approximate computing. Comprehensive survey chapters make the material accessible to graduate students and non-experts. This title is also available as Open Access on Cambridge Core. The Handbook of Neuropsychiatric Biomarkers, Endophenotypes and Genes Volume IV: Molecular Genetic and Genomic Markers *Springer Science & Business Media* Neuropsychiatric disorders such as schizophrenia, mood disorders, Alzheimer's disease, epilepsy, alcoholism, substance abuse and others are one of the most debilitating illnesses worldwide characterizing by the complexity of the causes, and lacking the laboratory tests that may promote diagnostic and prognostic procedures. Recent advances in neuroscience, genomic, genetic, proteomic and metabolomic knowledge and technologies have opened the way to searching biomarkers and endophenotypes, which may offer powerful and exciting opportunity to understand the etiology and the underlying pathophysiological mechanisms of neuropsychiatric disorders. The challenge now is to translate these advances into meaningful diagnostic and therapeutic advances. This book offers a broad synthesis of the current knowledge about diverse topics of the biomarker and endophenotype strategies in neuropsychiatry. The book is organized into four interconnected volumes: "Neuropsychological Endophenotypes and Biomarkers" (with overview of methodological issues of the biomarker and endophenotype approaches in neuropsychiatry and some technological advances), "Neuroanatomical and Neuroimaging Endophenotypes and Biomarkers", "Metabolic and Peripheral Biomarkers" and "Molecular Genetic and Genomic Markers". The contributors are internationally and nationally recognized researchers and experts from 16 countries. This four-volume handbook is intended for a broad spectrum of readers including neuroscientists, psychiatrists, neurologists, endocrinologists, pharmacologists, clinical psychologists, general practitioners, geriatricians, health care providers in the field of neurology and mental health interested in trends that have crystallized in the last decade, and trends that can be expected to further evolve in the coming years. It is hoped that this book will also be a useful resource for the teaching of psychiatry, neurology, psychology and mental health. Good Research Practice in Non-Clinical Pharmacology and Biomedicine *Springer Nature* This open access book, published under a CC BY 4.0 license in the Pubmed indexed book series Handbook of Experimental Pharmacology, provides up-to-date information on best practice to improve experimental design and quality of research in non-clinical pharmacology and biomedicine. Lifelong Technology-Enhanced Learning 13th European Conference on Technology Enhanced Learning, EC-TEL 2018, Leeds, UK, September 3-5, 2018, Proceedings *Springer* This book constitutes the proceedings of the 13th European Conference on Technology Enhanced Learning, EC-TEL 2018, held in Leeds, UK, in September 2018. The 42 full and short papers, 7 demo papers, and 23 poster papers presented in this volume were carefully reviewed and selected from 142 submissions. This year, the European Conference on Technology-Enhanced Learning (EC-TEL) will engage researchers, practitioners, educational developers, entrepreneurs and policy makers in a joint discussion on how to put science, technology and practice at the service of learning to embrace these challenges on the topic: Lifelong technology enhanced learning: Dealing with the complexity of 21st century challenges. Chapter "" is available open access under a Creative Commons Attribution 4.0 International License via [link.springer.com](http://link.springer.com). Electroceuticals Advances in Electrostimulation Therapies *Springer* This book covers recent advances in the use of electrostimulation therapies in movement disorders, epilepsy, inflammatory bowel disease, memory and cognition, disorders of consciousness, foot drop, dysphagia, brain injury, headache, heart failure, hearing loss, and rheumatoid arthritis. It describes techniques such as vagus nerve stimulation, deep brain stimulation, and electrical stimulation of the pharyngeal nerve. Electroceuticals: Advances in Electrostimulation Therapies is aimed at clinicians and basic researchers in the fields of neurology, neurosurgery, cardiology and rheumatology. Sperm Competition in Humans Classic and Contemporary Readings *Taylor & Francis* This volume presents the intricate ways in which sperm compete to fertilize eggs and how this has prompted reinterpretations of breeding behavior from a biological perspective. Sperm Competition in Humans: Classic and Contemporary Readings provides a theoretical framework for the study of sperm competition and also discusses the roles of females and the relationships between paternal care in sperm competition. The chapters focus on everything from evolutionary biology to taxonomic development. Handbook of Emotions, Fourth Edition *Guilford Publications* Recognized as the definitive reference, this handbook brings together leading experts from multiple psychological subdisciplines to examine one of today's most dynamic areas of research. Coverage encompasses the biological and neuroscientific underpinnings of emotions, as well as developmental, social and personality, cognitive, and clinical perspectives. The volume probes how people understand, experience, express, and perceive affective phenomena and explores connections to behavior and health across the lifespan. Concluding chapters present cutting-edge work on a range of specific emotions. Illustrations include 10 color plates. New to This Edition \*Chapters on the mechanisms, processes, and influences that contribute to emotions (such as genetics, the brain, neuroendocrine processes, language, the senses of taste and smell). \*Chapters on emotion in adolescence and older age, and in neurodegenerative dementias. \*Chapters on facial expressions and emotional body language. \*Chapters on stress, health, gratitude, love, and empathy. \*Many new authors and topics; extensively revised with the latest theoretical and methodological innovations. A Choice Outstanding Academic Title Novel Biomarkers in Alzheimer's Disease *MDPI* Alzheimer's disease (AD) represents the most common form of dementia in the elderly population worldwide. AD is characterized by progressive neurodegeneration that leads to a gradual deterioration of memory and other cognitive functions. Given the global prevalence and impact of AD, there is a critical need to establish biomarkers that can be used to detect AD in individuals before the onset of clinical signs and provide mitigating therapeutics. The aim of this Special Issue is to discuss the current knowledge as well as future perspectives on the role of biomarkers in the screening, diagnosis, treatment and follow-up of AD. Primer on Transplantation *John Wiley & Sons* Produced in association with the American Society of Transplantation, this new edition is full of practical advice for the next generation of transplant professionals. In addition to 5 organ-specific chapters: kidney, pancreas, heart, lung and liver, the book includes essential information on: immunobiology pharmacology donor management infectious complications pediatric transplantation general principles of patient management Fully updated and redesigned to make it even more user-friendly, the book now contains clinical vignettes, key point boxes, and self-assessment multiple choice questions in each chapter. Primer on Transplantation, Third Edition is an invaluable resource for all health professionals in the transplant team including trainees, residents, fellows, physicians, surgeons, nurses and transplant co-ordinators. Purchasing this book entitles you to access to the companion website: [www.astprimer.com](http://www.astprimer.com) The website includes: Interactive Multiple-Choice Questions for each chapter Figures from the book as Powerpoints for downloading All chapters online A Companion to Contemporary Political Philosophy *John Wiley & Sons* This new edition of A Companion to Contemporary Political Philosophy has been extended significantly to include 55 chapters across two volumes written by some of today's most distinguished scholars. New contributors include some of today's most distinguished scholars, among them Thomas Pogge, Charles Beitz, and Michael Doyle Provides in-depth coverage of contemporary philosophical debate in all major related disciplines, such as economics, history, law, political science, international relations and sociology Presents analysis of key political ideologies, including new chapters on Cosmopolitanism and Fundamentalism Includes detailed discussions of major concepts in political philosophy, including virtue, power, human rights, and just war Foundations of Location Analysis *Springer Science & Business Media* Location analysis has matured from an area of theoretical inquiry that was designed to explain observed phenomena to a vibrant field which can be and has been used to locate items as diverse as landfills, fast food outlets, gas stations, as well as politicians and products in issue and feature spaces. Modern location science is dealt with by a diverse group of researchers and practitioners in geography, economics, operations research, industrial engineering, and computer science. Given the tremendous advances location science has seen from its humble beginnings, it is time to look back. The contributions in this volume were written by eminent experts in the field, each surveying the original contributions that created the field, and then providing an up-to-date review of the latest contributions. Specific areas that are covered in this volume include: • The three main fields of inquiry: minisum and minimax problems and covering models • Nonstandard location models, including those with competitive components, models that locate undesirable facilities, models with probabilistic features, and problems that allow interactions between facilities • Descriptions and detailed examinations of exact techniques including the famed Weiszfeld method, and heuristic methods ranging from Lagrangean techniques to Greedy algorithms • A look at the spheres of influence that the facilities generate and that attract customers to them, a topic crucial in planning retail facilities • The theory of central places, which, other than in mathematical games, where location science was born Assessing Competence in Professional Performance across Disciplines and Professions *Springer* This book examines the challenges of cross-professional comparisons and proposes new forms of performance assessment to be used in professions education. It addresses how complex issues are learned and assessed across and within different disciplines and professions in order to move the process of "performance assessment for learning" to the next level. In order to be better equipped to cope with increasing complexity, change and diversity in professional education and performance assessment, administrators and educators will engage in crucial systems thinking. The main question discussed by the book is how the required competence in the performance of students can be assessed during their professional education at both undergraduate and graduate levels. To answer this question, the book identifies unresolved issues and clarifies conceptual elements for performance assessment. It reviews the development of constructs that cross disciplines and professions such as critical thinking, clinical reasoning, and problem solving. It discusses what it means to instruct and assess students within their own

domain of study and across various roles in multiple contexts, but also what it means to instruct and assess students across domains of study in order to judge integration and transfer of learning outcomes. Finally, the book examines what it takes for administrators and educators to develop competence in assessment, such as reliably judging student work in relation to criteria from multiple sources. "... the co-editors of this volume, Marcia Mentkowski and Paul F. Wimmers, are associated with two institutions whose characters are so intimately associated with the insight that assessment must be integrated with curriculum and instructional program if it is to become a powerful influence on the educational process ..." Lee Shulman, Stanford University

**The Blood Supply of Bone An Approach to Bone Biology** *Butterworth-Heinemann* **Biorefineries** *Springer* This book offers a comprehensive review on biomass resources, examples of biorefineries and corresponding products. The first part of this book covers topics such as different biorefinery resources from agriculture, wood processing residues and transport logistics of plant biomass. In the second part, expert contributors present biorefinery concepts of different biomass feedstocks, including vegetable-oils, sugarcane, starch, lignocellulose and microalgae. Readers will find here a summary of the syngas utilization and the bio-oil characterization and potential use as an alternative renewable fuel and source for chemical feedstocks. Particular attention is also given to the anaerobic digestion-based and Organosolv biorefineries. The last part of the book examines relevant products and components such as alcohols, hydrocarbons, bioplastics and lignin, and offers a sustainability evaluation of biorefineries. **Single Molecule Spectroscopy Nobel Conference Lectures** *Springer Science & Business Media* The topics range from single molecule experiments in quantum optics and solid-state physics to analogous investigations in physical chemistry and biophysics. **A Vast Machine Computer Models, Climate Data, and the Politics of Global Warming** *MIT Press* The science behind global warming, and its history: how scientists learned to understand the atmosphere, to measure it, to trace its past, and to model its future. Global warming skeptics often fall back on the argument that the scientific case for global warming is all model predictions, nothing but simulation; they warn us that we need to wait for real data, "sound science." In **A Vast Machine** Paul Edwards has news for these skeptics: without models, there are no data. Today, no collection of signals or observations—even from satellites, which can "see" the whole planet with a single instrument—becomes global in time and space without passing through a series of data models. Everything we know about the world's climate we know through models. Edwards offers an engaging and innovative history of how scientists learned to understand the atmosphere—to measure it, trace its past, and model its future.

**Forensic Medicine of the Lower Extremity** *Springer Science & Business Media* Publius Syrus stated back in 42 B.C., "You cannot put the same shoe on every foot." (Maxim 596) Though written long before the advent of forensic science, Syrus' maxim summarizes the theme of **Forensic Medicine of the Lower Extremity: Human Identification and Trauma Analysis of the Thigh, Leg, and Foot**. Put simply, the lower extremity is a tremendously variable anatomic region. This variation is beneficial to forensic experts. Differences in the leg and foot can be used to establish individual identity. Analysis of damage to the lower limb can be used to reconstruct antemortem, perimortem, and postmortem trauma. As a forensic anthropologist, I analyze cases involving decomposed, burned, mummified, mutilated, and skeletal remains. Many of the corpses I examine are incomplete. Occasionally, I receive nothing but the legs and feet; a lower torso dragged from a river; a foot recovered in a city park; dismembered drug dealers in plastic bags; victims of bombings and airline disasters; and the dead commingled in common graves. Though the leg and foot contain much that is useful in forensic analysis, before this publication, investigators faced a twofold problem. Little research that focused on the lower extremity was available in the literature, and the existing research was published in diverse sources, making its location and synthesis a daunting task. **Voice and Agency Empowering Women and Girls for Shared Prosperity** *World Bank Publications* Despite recent advances in important aspects of the lives of girls and women, pervasive challenges remain. These challenges reflect widespread deprivations and constraints and include epidemic levels of gender-based violence and discriminatory laws and norms that prevent women from owning property, being educated, and making meaningful decisions about their own lives—such as whether and when to marry or have children. These often violate their most basic rights and are magnified and multiplied by poverty and lack of education. This groundbreaking book distills vast data and hundreds of studies to shed new light on deprivations and constraints facing the voice and agency of women and girls worldwide, and on the associated costs for individuals, families, communities, and global development. The volume presents major new findings about the patterns of constraints and overlapping deprivations and focuses on several areas key to women's empowerment: freedom from violence, sexual and reproductive health and rights, ownership of land and housing, and voice and collective action. It highlights promising reforms and interventions from around the world and lays out an urgent agenda for governments, civil society, development agencies, and other stakeholders, including a call for greater investment in data and knowledge to benchmark progress. **Advances in Enzyme Biotechnology** *Springer Science & Business Media* Enzyme Technology is one the most promising disciplines in modern biotechnology. In this book, the applications of a wide variety of enzymes are highlighted. Current studies in enzyme technology are focused towards the discovery of novel enzymes (termed "bio-discovery" or "bio-prospecting") and the identification and elucidation of novel pathways of these novel enzymes with emphasis on their industrial relevance. With the development of molecular techniques and other bioinformatics tools, the time to integrate this subject with other fields in the life sciences has arrived. A rapid expansion of the knowledge base in the field of enzyme biotechnology has occurred over the past few years. Much of this expansion has been driven by the bio-discovery of many new enzymes from a wide range of environments, some extreme in nature, followed by subsequent protein (enzyme) engineering. These enzymes have found a wide range of applications, ranging from bioremediation, bio-monitoring, biosensor development, bioconversion to biofuels and other biotechnologically important value-added products. Hydrolases constitute a major component of the global annual revenue generated by industrial enzymes and the emphasis has therefore been placed on these enzymes and their applications. With the immense interest of researchers active in this area, this book will serve to provide information on current aspects in this field of study. In the current edition, the contributions of many diversified topics towards establishing new directions of research in the area of enzyme biotechnology are described. This book serves to provide a unique source of information to undergraduates, post graduates and doctoral courses in microbiology and biotechnology along with allied life sciences. The present edition of the book covers all important areas of enzyme biotechnology i.e. the wide variety of enzymes in the field of enzyme biotechnology and their industrial applications, new methods and state-of-the-art information on modern methods of enzyme discovery. This book will act as good resource on most of the current facets of enzyme technology for all students engaged in bioengineering and biotechnology. **Biology, Medicine, and Surgery of Elephants** *John Wiley & Sons* Elephants are possibly the most well-known members of the animal kingdom. The enormous size, unusual anatomy, and longevity of elephants have fascinated humans for millenia. **Biology, Medicine, and Surgery of Elephants** serves as a comprehensive text on elephant medicine and surgery. Based on the expertise of 36 scientists and clinical veterinarians, this volume covers biology, husbandry, veterinary medicine and surgery of the elephant as known today. Written by the foremost experts in the field **Comprehensively covers both Asian and African elephants** Complete with taxonomy, behavioral, geographical and systemic information Well-illustrated and organized for easy reference **Algorithmic Cryptanalysis** *CRC Press* Illustrating the power of algorithms, **Algorithmic Cryptanalysis** describes algorithmic methods with cryptographically relevant examples. Focusing on both private- and public-key cryptographic algorithms, it presents each algorithm either as a textual description, in pseudo-code, or in a C code program. Divided into three parts, the book begins with a short introduction to cryptography and a background chapter on elementary number theory and algebra. It then moves on to algorithms, with each chapter in this section dedicated to a single topic and often illustrated with simple cryptographic applications. The final part addresses more sophisticated cryptographic applications, including LFSR-based stream ciphers and index calculus methods. **Accounting for the impact of current computer architectures**, this book explores the algorithmic and implementation aspects of cryptanalysis methods. It can serve as a handbook of algorithmic methods for cryptographers as well as a textbook for undergraduate and graduate courses on cryptanalysis and cryptography. **Geopolitics of Energy in Central Asia India's Position and Policy** *Taylor & Francis* This book focuses on the geopolitics of Central Asia which has emerged as the new fertile ground for oil and energy resources. It analyses the scramble for energy and control over the region by many nations and their diplomatic manoeuvres to ensure energy sufficiency and economic growth. The book provides a quantitative analysis of the Central Asian energy potential and offers an understanding of the unique position that each country occupies in the geopolitics of oil and energy in the region. It looks at aggressive foreign policies by countries like the US, China, the European Union, Japan, Israel, Iran and Pakistan, focusing primarily on India's position and strategies in the region within the new great game. The book further examines the dynamics between Central Asia and India and India's policies for geopolitical engagement and diversification of energy sources. This volume will be of interest to researchers and students of political studies, international relations, economics, sociology, and Asian studies. It will also be useful for policymakers and professionals working in the field of energy security and geo-economics. **African Actors in International Security Shaping Contemporary Norms** *Lynne Rienner Publishers* "Identifies and explores the diverse pathways by which African governments, NGOs, and individuals can and do influence international peace and security norms."--Publisher's summary.