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## **KEY=BIOLOGY - SWEENEY ANDREWS**

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## **BROCK BIOLOGY OF MICROORGANISMS**

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For courses in General Microbiology. A streamlined approach to master microbiology Brock Biology of Microorganisms is the leading majors microbiology text on the market. It sets the standard for impeccable scholarship, accuracy, and strong coverage of ecology, evolution, and metabolism. The 15th edition seamlessly integrates the most current science, paying particular attention to molecular biology and the genomic revolution. It introduces a flexible, more streamlined organization with a consistent level of detail and comprehensive art program. Brock Biology of Microorganisms helps students quickly master concepts, both in and outside the classroom, through personalized learning, engaging activities to improve problem solving skills, and superior art and animations with Mastering(tm) Microbiology. Also available with Mastering Microbiology. Mastering(tm) Microbiology is an online homework, tutorial, and assessment product designed to improve results by helping students quickly master concepts. Students benefit from self-paced tutorials that feature personalized wrong-answer feedback and hints that emulate the office-hour experience and help keep students on track. With a wide range of interactive, engaging, and assignable activities, students are encouraged to actively learn and retain tough course concepts. Students, if interested in purchasing this title with Mastering Microbiology, ask your instructor for the correct package ISBN and Course ID. Instructors, contact your Pearson representative for more information. Note: You are purchasing a standalone product; Mastering(tm) Microbiology does not come packaged with this content. Students, if interested in purchasing this title with Mastering Microbiology, ask your instructor for the correct package ISBN and Course ID. Instructors, contact your Pearson representative for more information. If you would like to purchase both the physical text and Mastering Microbiology, search for: 0134268660 / 9780134268668 Brock Biology of Microorganisms Plus Mastering

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## **BROCK BIOLOGY OF MICROORGANISMS**

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Benjamin-Cummings Publishing Company The authoritative #1 textbook for introductory majors microbiology, Brock Biology of Microorganisms continues to set the standard for impeccable scholarship, accuracy, and outstanding illustrations and photos. This book for biology, microbiology, and other science majors balances cutting edge research with the concepts essential for understanding the field of microbiology. In addition to a new co-author, David Stahl, who brings coverage of cutting edge microbial ecology research and symbiosis to a brand new chapter (Chapter 25), a completely revised overview chapter on Immunology (Chapter 28), a new "Big Ideas" section at the end of each chapter, and a wealth of new photos and art make the Thirteenth Edition better than ever. Brock Biology of Microorganisms speaks to today's students while maintaining the depth and precision science majors need.

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## **BROCK BIOLOGY OF MICROORGANISMS**

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Benjamin-Cummings Publishing Company The authoritative text for introductory microbiology, Brock Biology of Microorganisms continues its long tradition of impeccable scholarship, outstanding art and photos, and accuracy. It balances the most current coverage with the major classical and contemporary concepts essential for understanding microbiology. The authors' clear, accessible writing style speaks to today's students while maintaining the depth and precision science majors need.

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## **BIOLOGY OF MICRO-ORGANISMS**

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## **BROCK BIOLOGY OF MICROORGANISMS**

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"Teaches the principles of modern microbiology. Includes both historical background and foundational aspects of microbiology, as well as a robust and modern treatment of microbiology with concrete examples of the microbial world"--

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## **PROBIOTICS**

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## **BIOLOGY, GENETICS AND HEALTH ASPECTS**

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Springer Science & Business Media Probiotic microorganisms have a long history of use, and their health benefits for hosts are well documented. This Microbiology Monographs volume provides an overview of the current knowledge and applications of probiotics. Reviews cover the biology and probiotic potential of the thoroughly studied prokaryotic genera Lactobacillus and Bifidobacterium, several eukaryotic microorganisms, probiotic strain characterization, and the analytical methods (such as FISH, microarray, and high throughput sequencing) required for their study.

Further chapters describe the positive effects of probiotics on malabsorption disorders such as diarrhea and lactose intolerance, and document the clinical evidence of benefits in treating allergies and lung emphysema, and in dermatological applications. Also addresses are topics such as genetically engineered strains, new carriers for probiotics, protection techniques, challenges of health claims, safety aspects, and future market trends.

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## **BROCK BIOLOGY OF MICROORGANISMS**

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Prentice Hall Resource added for the Microbiology "10-806-197" courses.

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## **BROCK BIOLOGY OF MICROORGANISMS**

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Benjamin-Cummings Publishing Company The authoritative text for introductory microbiology, Brock Biology of Microorganisms, 12/e, continues its long tradition of impeccable scholarship, outstanding art and photos, and accuracy. It balances the most current coverage with the major classical and contemporary concepts essential for understanding microbiology. Now reorganized for greater flexibility and updated with new content, the authors' clear, accessible writing style speaks to today's readers while maintaining the depth and precision they need. Microorganisms and Microbiology, A Brief Journey to the Microbial World, Chemistry of Cellular Components, Structure/Function in Bacteria and Archaea, Nutrition, Culture and Metabolism of Microorganisms, Microbial Growth, Essentials of Molecular Biology, Archaeal and Eukaryotic Molecular Biology, Regulation of Gene Expression, Overview of Viruses and Virology, Principles of Bacterial Genetics, Genetic Engineering, Microbial Genomics, Microbial Evolution and Systematics, Bacteria: The Proteobacteria, Bacteria: Gram-Positive and Other Bacteria, Archaea, Eukaryotic Microorganisms, Viral Diversity, Metabolic Diversity: Photography, Autotrophy, Chemolithotrophy, and Nitrogen Fixation, Metabolic Diversity: Catabolism of Organic Compounds, Methods in Microbial Ecology, Microbial Ecosystems, Nutrient Cycles, Bioremediation, and Symbioses, Industrial Microbiology, Biotechnology, Antimicrobial Agents and Pathogenicity, Microbial Interactions with Humans, Essentials of Immunology, Immunology in Host Defense and Disease, Molecular Immunology, Diagnostic and Microbiology and Immunology, Epidemiology, Person-to-Person Microbial Diseases, Vectorborne and Soilborne Diseases, Wastewater Treatment, Water Purification, and Waterborne Microbial Diseases, Food Preservation and Foodborne Microbial Diseases. Intended for those interested in learning the basics of microbiology

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## **ROSS & WILSON ANATOMY AND PHYSIOLOGY IN HEALTH AND ILLNESS E-BOOK**

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Elsevier Health Sciences This title is unique among textbooks in its appeal to a wide range of healthcare professionals including nurses, nursing students, students in the allied health professions and complementary / alternative medicine, paramedics and ambulance technicians. Each chapter provides an explanation of the normal structure and functions of the human body and the effects of disease or illness on normal physiology. The text is written in straightforward language and is

complemented by over 400 extensive clear, colour illustrations. "The chapter on the nervous system, has excellent informative diagrams where even the plexus appear understandable even to a novice. This is the book's strength and as a reference tool for patients would be helpful. " Date: July 2014 Carefully refined, clear and unambiguous text which omits the unnecessary detail that can confuse the student new to the subject Highly illustrated with clear colour diagrams and photographs Regular sequences of headings, lists and bullet points help with learning and revision Learning outcomes related to the sections within each chapter Common prefixes, suffixes and roots commonly used in anatomy and physiology Appendix containing useful biological values for easy reference Access to additional electronic resources, including high-quality animations, colouring exercises, case studies, self-testing questions, an audio pronunciation guide and weblinks An accompanying Colouring and workbook that facilitates structured learning and revision of the material in this book. text fully revised and updated with developments in the field colour photographs glossary new and revised illustrations significantly enhanced electronic ancillaries featuring a fully searchable, customisable electronic version of the text, new animations, an electronic colouring in /labelling feature, case studies, over 300 self-assessment exercises such as MCQs, crosswords, drag and drop, 'hangman' etc with answers extra electronic resources for lecturers including the full image bank

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## **THERMOPHILIC MICROBES IN ENVIRONMENTAL AND INDUSTRIAL BIOTECHNOLOGY**

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### **BIOTECHNOLOGY OF THERMOPHILES**

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Springer Science & Business Media The existence of life at high temperatures is quiet fascinating. At elevated temperatures, only microorganisms are capable of growth and survival. Many thermophilic microbial genera have been isolated from man-made (washing machines, factory effluents, waste streams and acid mine effluents) and natural (volcanic areas, geothermal areas, terrestrial hot springs, submarine hydrothermal vents, geothermally heated oil reserves and oil wells, sun-heated litter and soils/sediments) thermal habitats throughout the world. Both culture-dependent and culture-independent approaches have been employed for understanding the diversity of microbes in hot environments. Interest in their diversity, ecology, and physiology has increased enormously during the past few decades as indicated by the deliberations in international conferences on extremophiles and thermophiles held every alternate year and papers published in journals such as Extremophiles. Thermophilic moulds and bacteria have been extensively studied in plant biomass bioconversion processes as sources of industrial enzymes and as gene donors. In the development of third generation biofuels such as bioethanol, thermophilic fungal and bacterial enzymes are of particular interest. The book is aimed at bringing together scattered up-to-date information on various aspects of thermophiles such as the diversity of thermophiles and viruses of thermophiles, their potential roles in pollution control and bioremediation, and composting.

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## **MICROBIAL EFFECTS IN THE CONTEXT OF PAST GERMAN SAFETY CASES (KIT SCIENTIFIC REPORTS ; 7744)**

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KIT Scientific Publishing

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### **ASM NEWS**

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### **BROCK BIOLOGY OF MICROORGANISMS**

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Offering in-depth treatment of basic microbiological principles, including molecular biology, medical microbiology, genetics and immunology, this work considers the subject in terms of chemistry, enabling an understanding of the metabolism of micro-organisms.

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### **INTRODUCTION TO WATER RESOURCES AND ENVIRONMENTAL ISSUES**

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Cambridge University Press How much water does the world need to support growing human populations? What are the potential effects of climate change on the world's water resources? These questions and more are discussed in this thoroughly updated and expanded new edition. Written at the undergraduate level, this accessible textbook covers the fundamentals of water resources, water law, allocation, quality and quantity, health issues, and provides examples of potential personal actions and solutions. There is a keener focus on climate change, as many of the predictions made in the first edition have now come to pass. This new edition features improved artwork, more active learning prompts, more positive examples of beneficial changes, basic introductions to scientific approaches and a discussion of emerging contaminants and LiDAR technology. It contains strong teaching features, with new 'In Depth' and 'Think About It' sections to encourage class discussion, and homework questions to test students' understanding.

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### **BIOLOGICAL WASTEWATER TREATMENT: PRINCIPLES, MODELING AND DESIGN**

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IWA Publishing The first edition of this book was published in 2008 and it went on to become IWA Publishing's bestseller. Clearly there was a need for it because over the twenty years prior to 2008, the knowledge and understanding of wastewater treatment had advanced extensively and moved away from empirically-based approaches to a fundamental first-principles approach based on chemistry, microbiology, physical and bioprocess engineering, mathematics and modelling. However the quantity, complexity and diversity of these new developments was overwhelming for young water professionals, particularly in developing countries without readily available access to advanced-level tertiary education courses in wastewater treatment. For a whole new generation of young scientists and engineers entering the wastewater treatment profession, this book assembled and integrated the postgraduate course material of a dozen or so professors from research groups around the world who have made significant contributions to the advances in wastewater treatment. This material had matured to the degree that it had been codified into mathematical models for simulation with computers. The first edition of

the book offered, that upon completion of an in-depth study of its contents, the modern approach of modelling and simulation in wastewater treatment plant design and operation could be embraced with deeper insight, advanced knowledge and greater confidence, be it activated sludge, biological nitrogen and phosphorus removal, secondary settling tanks, or biofilm systems. However, the advances and developments in wastewater treatment have accelerated over the past 12 years since publication of the first edition. While all the chapters of the first edition have been updated to accommodate these advances and developments, some, such as granular sludge, membrane bioreactors, sulphur conversion-based bioprocesses and biofilm reactors which were new in 2008, have matured into new industry approaches and are also now included in this second edition. The target readership of this second edition remains the young water professionals, who will still be active in the field of protecting our precious water resources long after the aging professors who are leading some of these advances have retired. The authors, all still active in the field, are aware that cleaning dirty water has become more complex but that it is even more urgent now than 12 years ago, and offer this second edition to help the young water professionals engage with the scientific and bioprocess engineering principles of wastewater treatment science and technology with deeper insight, advanced knowledge and greater confidence built on stronger competence.

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## **ADVANCES IN MARINE ANTIFOULING COATINGS AND TECHNOLOGIES**

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Elsevier Marine biofouling can be defined as the undesirable accumulation of microorganisms, algae and animals on structures submerged in seawater. From the dawn of navigation, marine biofouling has been a major problem for shipping in such areas as reduced speed, higher fuel consumption and increased corrosion. It also affects industries using off-shore structures such as oil and gas production and aquaculture. Growing concerns about the environmental impact of antifouling coatings has led to major new research to develop more environmentally-friendly alternatives. Advances in marine antifouling coatings and technologies summaries this wealth of research and its practical implications. This book is divided into four sub-sections which discuss: marine fouling organisms and their impact, testing and development of antifouling coatings, developments in chemically-active marine antifouling technologies, and new surface approaches to the control of marine biofouling. It provides an authoritative overview of the recent advances in understanding the biology of fouling organisms, the latest developments on antifouling screening techniques both in the field and in the laboratory, research on safer active compounds and the progress on nontoxic coatings with tailor-made surface properties. With its distinguished editors and international team of contributors, Advances in marine antifouling coatings and technologies is a standard reference for manufacturers of marine antifouling solutions, the shipping industry, oil and gas producers, aquaculture and other industries using offshore structures, and academics researching this important area. Assesses marine antifouling organisms and their impact, including a historical review and directions for future research Discusses developments in antifouling coatings examining chemically-active and new surface approaches Reviews the environmentally friendly alternative of safer

active compounds and the progress of non-toxic compounds

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## **PUBLIC HEALTH REPORTS**

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### **MICROBIOLOGY**

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"Microbiology covers the scope and sequence requirements for a single-semester microbiology course for non-majors. The book presents the core concepts of microbiology with a focus on applications for careers in allied health. The pedagogical features of the text make the material interesting and accessible while maintaining the career-application focus and scientific rigor inherent in the subject matter. Microbiology's art program enhances students' understanding of concepts through clear and effective illustrations, diagrams, and photographs. Microbiology is produced through a collaborative publishing agreement between OpenStax and the American Society for Microbiology Press. The book aligns with the curriculum guidelines of the American Society for Microbiology."--BC Campus website.

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### **BIODIVERSITY**

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### **LAW, POLICY AND GOVERNANCE**

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Taylor & Francis Conservation of biodiversity is a fundamental concern towards securing a sustainable future. This volume argues that despite various domestic and international policies and legal frameworks on biodiversity conservation — be it forest, wildlife, marine, coastal, etc. — their implementation suffers from many deficiencies. It explores the factors that hinder effective implementation of these policies and frameworks. It also analyses existing laws, both international and domestic, to identify inherent problems in the existing legal system. The book maintains that careful adherence to established procedures and protocols, public awareness, filling the lacuna in legal framework, and a strong political will are sine qua non for effective conservation of biodiversity and sustainable development. The volume defends the protection of traditional knowledge and participation of indigenous communities along with reinforcements of intellectual property in this regard. It also commends the role played by the Indian judiciary, especially the Supreme Court of India and India's National Green Tribunal for the preservation and enhancement of natural resources by applying established as also evolving principles of environmental law. This book will be useful to scholars and researchers of environmental studies, development studies, policy studies and law related to biodiversity and conservation.

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### **ARTIFICIAL INTELLIGENCE IN ENVIRONMENTAL MICROBIOLOGY**

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Frontiers Media SA

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### **THE DISTANCE**

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Breakneck Media Jeremy Robinson, whose stories have been compared to Crichton, Rollins and King, is the international bestselling master of stories with mind-bending imagination, terrifying monsters and high-octane action. With The Distance, he's

joined by his wife, Hilaree Robinson, whose passionate writing and characters make this novel a unique experience!

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## **INTERDISCIPLINARY EXPANSIONS IN ENGINEERING AND DESIGN WITH THE POWER OF BIOMIMICRY**

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BoD – Books on Demand People have been finding inspiration in nature in solving their problems, from the very beginning of their existence. In the most general sense, biomimicry, defined as "inspire from the nature," has brought together the engineers and designers nowadays. This collaboration creates innovative and creative outcomes that encourage people with their interdisciplinary relationships. Accordingly, the aim of this book is to bring together different works or developments on biomimetics in interdisciplinary relationship between different areas, especially biomimicry, engineering, and design. The twenty-first century has conceived many new and amazing designs. The book in your hands will surely be an important guide to take a quick look at the future possibilities.

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## **FORENSIC ANALYSIS OF FIRE DEBRIS AND EXPLOSIVES**

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Springer Nature This text provides training on the fundamental tools and methodologies used in active forensic laboratories for the complicated analysis of fire debris and explosives evidence. It is intended to serve as a gateway for students and transitioning forensic science or chemistry professionals. The book is divided between the two disciplines of fire debris and explosives, with a final pair of chapters devoted to the interplay between the two disciplines and with other disciplines, such as DNA and fingerprint analysis. It brings together a multi-national group of technical experts, ranging from academic researchers to active practitioners, including members of some of the premier forensic agencies of the world. Readers will gain knowledge of practical methods of analysis and will develop a strong foundation for laboratory work in forensic chemistry. End-of-chapter questions based on relevant topics and real-world data provide a realistic arena for learners to test newly-acquired techniques.

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## **DID YOU JUST EAT THAT?: TWO SCIENTISTS EXPLORE DOUBLE-DIPPING, THE FIVE-SECOND RULE, AND OTHER FOOD MYTHS IN THE LAB**

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W. W. Norton & Company Is the five-second rule legitimate? Are electric hand dryers really bacteria blowers? Am I spraying germs everywhere when I blow on my birthday cake? How gross is backwash? When it comes to food safety and germs, there are as many common questions as there are misconceptions. And yet there has never been a book that clearly examines the science behind these important issues—until now. In *Did You Just Eat That?* food scientists Paul Dawson and Brian Sheldon take readers into the lab to show, for example, how they determine the amount of bacteria that gets transferred by sharing utensils or how many microbes live on restaurant menus. The authors list their materials and methods (in case you want to replicate the experiments), guide us through their results, and offer in-depth explanations of good hygiene and microbiology. Written with candid humor and

richly illustrated, this fascinating book will reveal surprising answers to the most frequently debated—and also the weirdest—questions about food and germs, sure to satisfy anyone who has ever wondered: should I really eat that?

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## **ASTROBIOLOGY**

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### **THERAPEUTIC ENZYMES: FUNCTION AND CLINICAL IMPLICATIONS**

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Springer Nature Therapeutic enzymes exhibit fascinating features and opportunities, and represent a significant and promising subcategory of modern biopharmaceuticals for the treatment of several severe diseases. Research and drug developments efforts and the advancements in biotechnology over the past twenty years have greatly assisted the introduction of efficient and safe enzyme-based therapies for a range of both rare and common disorders. The introduction and regulatory approval of twenty different recombinant enzymes has enabled effective enzyme-replacement therapy. This volume aims to overview these therapeutic enzymes, focusing in particular on more recently approved enzymes produced by recombinant DNA technology. This volume is composed of four sections. Section 1 provides an overview of the production process and biochemical characterization of therapeutic enzymes, while Section 2 focuses upon the engineering strategies and delivery methods of therapeutic enzymes. Section 3 highlights the clinical applications of approved therapeutic enzymes, including aspects on their structure, indications and mechanisms of action. Together with information on these mechanisms, safety and immunogenicity issues and various adverse events of the recombinant enzymes used for therapy are discussed. Section 4, provides discussion on the prospective and future developments of new therapeutic enzymes. This book is aimed at academics, researchers and students undertaking advanced undergraduate/postgraduate programs in the biopharmaceutical/biotechnology area who wish to gain a comprehensive understanding of enzyme-based therapeutic molecules.

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## **MICROBIOLOGY**

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### **A LABORATORY MANUAL**

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Pearson This loose-leaf, three-hole punched textbook that gives students the flexibility to take only what they need to class and add their own notes—all at an affordable price. For courses in Microbiology Lab and Nursing and Allied Health Microbiology Lab. Foundations in microbiology lab work with clinical and critical-thinking emphasis Microbiology: A Laboratory Manual, 12th Edition provides students with a solid underpinning of microbiology laboratory work while putting increased focus on clinical applications and critical-thinking skills, as required by today's instructors. The text is clear, comprehensive, and versatile, easily adapted to virtually any microbiology lab course and easily paired with any undergraduate microbiology text. The 12th Edition has been extensively updated to enhance the student experience and meet instructor requirements in a shifting learning environment. Updates and additions include clinical case studies, equipment and material checklists, new experiments, governing body guidelines, and more.

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## **MOLECULAR DIVERSITY OF ENVIRONMENTAL PROKARYOTES**

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CRC Press This book correlates the vast genetic diversity associated with environmental samples and still underexploited potential for the development of biotechnology products. The book points out the potential of different types of environmental samples. It presents the main characteristics of microbial diversity, the main approaches used for molecular characterization of the diversity, and practical examples of application of the exploration of the microbial diversity. It presents a not-yet-explored structure for discussing the main topics related to molecular biology of environmental prokaryotes and their biotechnological applications.

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## **THE BIOLOGY OF HALOPHILIC BACTERIA**

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CRC Press A book for anyone interested in halophilic bacteria The Biology of Halophilic Bacteria presents detailed information regarding methods for working with halophilic bacteria. Helpful hints for performing various tests and assays in high salts are given, and information about data presentation and analysis is provided as well. The book will be useful to molecular biologists, biochemists, ecologists, and others interested in halophilic bacteria.

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## **STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES**

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### **A PATH FORWARD**

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National Academies Press Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

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## **THE HANDBOOK OF POLYHYDROXYALKANOATES, THREE VOLUME SET**

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CRC Press The Handbook of Polyhydroxyalkanoates (PHA) focusses on and addresses varying facets of PHA biosynthesis and processing, spread across three volumes. The

first volume discusses feedstock aspects, enzymology, metabolism and genetic engineering of PHA biosynthesis. It addresses better understanding the mechanisms of PHA biosynthesis in scientific terms and profiting from this understanding in order to enhance PHA biosynthesis in bio-technological terms and in terms of PHA microstructure. It further discusses making PHA competitive for outperforming established petrol-based plastics on industrial scale and obstacles for market penetration of PHA. This second volume focusses on thermodynamic and mathematical considerations of PHA biosynthesis, bioengineering aspects regarding bioreactor design and downstream processing for PHA recovery from microbial biomass. It covers microbial mixed culture processes and includes a strong industry-focused section with chapters on the economics of PHA production, industrial-scale PHA production from sucrose, next generation industrial biotechnology approaches for PHA production based on novel robust production strains, and holistic techno-economic and sustainability considerations on PHA manufacturing. Third volume is on the production of functionalized PHA bio-polyesters, the post-synthetic modification of PHA, processing and additive manufacturing of PHA, development and properties of PHA-based (bio)composites and blends, the market potential of PHA and follow-up materials, different bulk- and niche applications of PHA, and the fate and use of spent PHA items. Divided into fourteen chapters, it describes functionalized PHA and PHA modification, processing and their application including degradation of spent PHA-based products and fate of these bio-polyesters during compositing and other disposal strategies. Aimed at professionals and graduate students in Polymer (plastic) industry, wastewater treatment plants, food industry, biodiesel industry, this set: Presents comprehensive and holistic consideration of these microbial bioplastics in the volumes. Enables reader to learn about microbiological, enzymatic, genetic, synthetic biology, and metabolic aspects of PHA biosynthesis based on the latest scientific discoveries. Discusses design and operate a PHA production plant. Strong focus on post-synthetic modification, preparation of functional PHA and follow-up products, and PHA processing. Covers all related engineering considerations

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## **THERMOPHILIC MICROORGANISMS AND LIFE AT HIGH TEMPERATURES**

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Springer From 1965 through 1975, I conducted an extensive field and laboratory research project on thermophilic microorganisms. The field work was based primarily in Yellowstone National Park, using a field laboratory we set up in the city of W. Yellowstone, Montana. The laboratory work was carried out from 1965 through 1971 at Indiana University, Bloomington, and subsequently at the University of Wisconsin, Madison. Although this research project began small, it quickly ramified in a wide variety of directions. The major thrust was an attempt to understand the ecology and evolutionary relationships of thermophilic microorganisms, but research also was done on biochemical, physiologic, and taxonomic aspects of thermophiles. Four new genera of thermophilic microorganisms have been discovered during the course of this 10-year period, three in my laboratory. In addition, a large amount of new information has been obtained on some thermophilic microorganisms that previously had been known. In later years, a considerable amount of work was done on

Yellowstone algal bacterial mats as models for Precambrian stromatolites. In the broadest sense, the work could be considered geomicrobiological, or biogeochemical, and despite the extensive laboratory research carried out, the work was always firmly rooted in an attempt to understand thermophilic microorganisms in their natural environments. Indeed, one of the prime motivations for initiating this work was a view that extreme environments would provide useful models for studying the ecology of microorganisms. As a result of this 10-year research project, I published over 100 papers.

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## **MICROBIOLOGY FOR THE HEALTHCARE PROFESSIONAL - E-BOOK**

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Elsevier Health Sciences Even if you've never studied chemistry or biology before, this straightforward text makes microbiology easy to learn and helps you understand the spread, control, and prevention of infections. Content is logically organized and reflects just the right level of detail to give you a solid foundation for success, enabling you to connect concepts to real-world practice and confidently apply your scientific knowledge to patient care. Focuses on just the right amount of information you need to know to save you valuable time. Chapter outlines and key terms for every chapter help you study more efficiently. Learning objectives clarify chapter goals and guide you through content. UNIQUE! Why You Need to Know boxes detail the history and everyday relevance of key topics to enhance your understanding. UNIQUE! Life Application boxes demonstrate how science applies to real-world scenarios. UNIQUE! Medical Highlights boxes emphasize special details and anecdotal information to give you a more comprehensive understanding of pathologic conditions. UNIQUE! Healthcare Application tables provide quick access to important data on symptoms, causes, and treatments. Review questions at the end of each chapter test your understanding and help you identify areas requiring further study. Internet resources listed at the end of every chapter direct you to reliable sources for further research.

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## **MICROBIOLOGY: LABORATORY THEORY AND APPLICATION**

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Morton Publishing Company Designed for major and non-major students taking an introductory level microbiology lab course. Whether your course caters to pre-health professional students, microbiology majors or pre-med students, everything they need for a thorough introduction to the subject of microbiology is right here.

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## **METHODS IN BIOTECHNOLOGY**

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John Wiley & Sons As rapid advances in biotechnology occur, there is a need for a pedagogical tool to aid current students and laboratory professionals in biotechnological methods; Methods in Biotechnology is an invaluable resource for those students and professionals. Methods in Biotechnology engages the reader by implementing an active learning approach, provided advanced study questions, as well as pre- and post-lab questions for each lab protocol. These self-directed study sections encourage the reader to not just perform experiments but to engage with the material on a higher level, utilizing critical thinking and troubleshooting skills.



