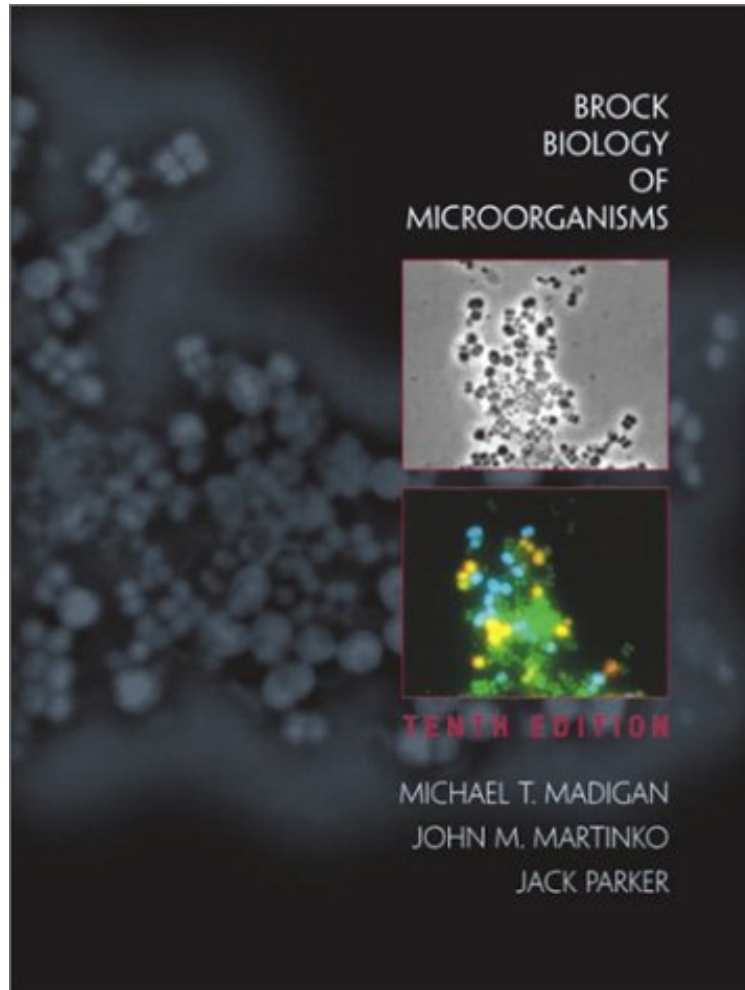


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## Brock Biology of Microorganisms (10th Edition)

*Michael T. Madigan, John Martinko, Jack Parker*  
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**Michael T. Madigan, John Martinko, Jack Parker : Brock Biology of Microorganisms (10th Edition)** before purchasing it in order to gage whether or not it would be worth my time, and all praised Brock Biology of Microorganisms (10th Edition):

0 of 0 people found the following review helpful. Five StarsBy Customersuper0 of 0 people found the following review helpful. Required TextBy Jason HeinzBook is well made, content easy to follow. Not much to review, considering it is a required text for Microbiology...9 of 10 people found the following review helpful. SWEET, SMOOTH; BUT PRICEYBy reviewerNo matter what, the price of this book is far from reasonable. But if you go ahead and buy it, you will value its smooth and balanced coverage.It has a concise reader-friendly format; and include the most recent discoveries in all the branches of microbiology. Its well-illustrated chapters are both cohesive and consistent. Still, extraneous details can be found in some of the sections.This is a good all-round microbiology text: the type of book many enthusiasts would like to see in CD-ROM. However, its high price will prove a strong deterrent for

most potential buyers.

The book for introductory microbiology, Brock's *Biology of Microorganisms* continues its long tradition of impeccable scholarship, outstanding art, and accuracy. It balances the most current coverage with the major classical concepts essential for understanding the science. A six-part presentation covers principles of microbiology; evolutionary microbiology and microbial diversity; metabolic diversity and microbial ecology; immunology, pathogenicity, and host responses; microbial diseases; and microorganisms as tools for industry and research. For researchers, group leaders, senior scientists in pharmaceuticals, chemicals and biochemical biotechnology companies, and public health laboratories.

From the Back Cover  
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About the Author  
Michael T. Madigan received a bachelor's degree in biology and education from Wisconsin State University at Stevens Point in 1971 and M.S. and Ph.D. degrees in 1974 and 1976, respectively, from the University of Wisconsin, Madison, Department of Bacteriology. His graduate work involved study of hot spring phototrophic bacteria under the direction of Thomas D. Brock. Following three years of postdoctoral training in the Department of Microbiology, Indiana University, where he worked on phototrophic bacteria with Howard Gest, he moved to Southern Illinois University Carbondale, where he is now Professor of Microbiology. He has been a coauthor of *Biology of Microorganisms* since the fourth edition (1984) and teaches courses in introductory microbiology and bacterial diversity. In 1988 he was selected as the outstanding teacher in the College of Science, and in 1993 its outstanding researcher. In 2001 he was selected as the university's outstanding scholar. His research has dealt almost exclusively with anoxygenic phototrophic bacteria, especially those species that inhabit extreme environments. He has published 95 research papers, has coedited a major treatise on phototrophic bacteria, and is Chief Editor for North America of the journal *Archives of Microbiology*. His nonscientific interests include reading, hiking, tree planting, and caring for his dogs and horses. He lives beside a quiet lake about five miles from the SIU campus with his wife, Nancy, two dogs, Willie and Plum, and Springer and Feivel (horses).

John M. Martinko attended The Cleveland State University and majored in biology. As an undergraduate student he participated in a cooperative education program, gaining experience in several microbiology and immunology laboratories. He then worked for two years at Case Western Reserve University as a laboratory manager, conducting research on the structure, serology, and epidemiology of *Streptococcus pyogenes*. He did his graduate work at the State University of New York at Buffalo, investigating antibody specificity and antibody idiotypes for his M.A. and Ph.D. (1978) in microbiology. As a postdoctoral fellow, he worked at Albert Einstein College of Medicine in New York on the structure of major histocompatibility complex proteins. Since 1981, he has been in the Department of Microbiology at Southern Illinois University Carbondale where he is currently the Chair and Associate Professor. His research interests include the effects of growth hormone in the immune response and the development of immunodiagnostic tests for soybean brown stem rot disease. His teaching interests include undergraduate and graduate courses in immunology. He also teaches a portion of a general microbiology course, with responsibility for immunology, host defense, and infectious diseases. He lives in Carbondale with his wife, Judy, a high school science teacher, and their daughters, Martha and Helen.

Jack Parker received his bachelor's degree in biology and also received his doctoral degree in a biology program (Ph.D., Purdue University, 1973). His research project dealt with bacterial physiology and he completed his Ph.D. research while in the microbiology department at the University of Michigan. Following this, he spent four years studying bacterial genetics at York University in Toronto, Ontario. He has taught courses in bacterial genetics, general genetics, human genetics, molecular biology, and molecular genetics, and has participated in courses in introductory microbiology, medical microbiology, and virology primarily at Southern Illinois University Carbondale, where he is now a Professor in the Department of Microbiology and Dean of the College of Science. His research has been in the broad area of molecular genetics and gene expression and has been focused most specifically on studies of how cells control the accuracy of protein synthesis. He is th

Excerpt. Reprinted by permission. All rights reserved. Microbiology is a biological science that has effectively wedded the old and the new. Some of the basic techniques of microbiology discovered over 100 years ago—the isolation of pure cultures, for example—are still practiced with regularity in the laboratory today. But today's microbiologists are also armed with sophisticated tools that facilitate detailed molecular analyses of microbial cells. These tools have fueled new discoveries that are thrusting microbiology into the limelight of disciplines as diverse as medicine, agriculture, and ecology. It is within this exciting period in microbiology that we present the tenth edition of Brock *Biology of Microorganisms* (BBOM), a textbook of microbiology that blends fundamental principles (the old) with state-of-the-

art science (the new) in a format that will appeal to both students and instructors. What's New? Organization This edition of BBOM contains many new organizational features that will help students better master the material and help instructors prepare stimulating presentations for the classroom. First, the book has been extensively reorganized into six major units: (1) Principles of Microbiology; (2) Evolutionary Microbiology and Microbial Diversity; (3) Metabolic Diversity and Microbial Ecology; (4) Immunology, Pathogenicity, and Host Responses; (5) Microbial Diseases; and (6) Microorganisms as Tools for Industry and Research. Each unit consists of several chapters whose content define the themes. Unit 1, The Principles, forms the heart of the general microbiology course as currently envisioned by the Education Division of the American Society for Microbiology (ASM); in other words, Unit 1 is the "core" material that every student should know. Included for the first time in this unit is an overview chapter (Chapter 2) on microbial diversity that introduces the major groups of microorganisms and their evolutionary relationships. This chapter will allow instructors who emphasize the medical or molecular aspects of microbiology the opportunity to give their students a taste of microbial diversity without the details. This chapter also covers some of the basic aspects of cell structure /function and is written in such a way that only a minimal background in chemistry and biology is necessary to follow the story. Other chapters that have been revamped in Unit 1 include Chapters 9 and 10. Compared with previous editions of BBOM, Chapter 9 (Essentials of Virology) has been restructured and downsized to place emphasis on the essential concepts of virology, instead of viral diversity. The latter material still exists, however, in the new Chapter 16 (Bacterial, Plant and Animal Viruses), for those instructors who wish to explore viral diversity in more detail. Another substantially reorganized chapter is Chapter 10, Bacterial Genetics. This chapter has been rewritten from two major standpoints, microbial genetics as it occurs in the intact organism (in vivo) and microbial genetics as it is practiced in vitro. To accomplish the latter, some material from the biotechnology chapter has been reworked and moved to this new chapter on genetics. Thus, Chapter 10 better reflects bacterial genetics as it is actually practiced today a blend of in vivo and in vitro science. As has been a tradition with BBOM, the material in each chapter is broken into several numbered heads to assist instructors in assigning reading material. But in addition, in parallel to the unit concept that pervades organization at the level of the entire book, the numbered heads within a chapter are themselves grouped into major themes. The latter are signaled by red headings set in all caps, and were introduced in this edition to better group related material within a chapter into logical pieces. In summary then, the tenth edition of BBOM is organized to capture and distill the basics while deploying the full story of the science at those points where it will have maximum impact. The authors and publishers are confident that this new format will make BBOM 10/e an even stronger resource for students and instructors alike. Content Every three years the authors of this book face one major question: how do we add new material and still keep the book within bounds? Longtime users of BBOM will immediately recognize that the tenth edition is essentially no longer than the ninth. This feat was accomplished by balancing the needs of the new material with a careful reevaluation of the old. Nothing essential to a fundamental understanding of microbiology has been deleted from BBOM; the tenth edition is still a book built on basic principles and strong science. But streamlining of some chapters along with a first-class art program has given the authors the space necessary to paint an up-to-the-minute picture of the science of microbiology in a volume that does not require weight training to lift off the table. Several totally new chapters will be found in BBOM 10/e. The new overview of microbial diversity chapter (Chapter 2) and the viral diversity chapter (Chapter 16) have already been mentioned in this regard. Also new to this edition are Chapter 15 (Microbial Genomics); Chapter 18 (Methods in Microbial Ecology); Chapter 22 (Essentials of Immunology); Chapter 23 (Molecular Immunology); Chapter 27 (Animal-Transmitted, Arthropod-Transmitted, and Soilborne Microbial Diseases); Chapter 28 (Wastewater Treatment, Water Purification, and Waterborne Microbial Diseases); and Chapter 29 (Food Preservation and Foodborne Microbial Diseases). All of these areas are "hot topics" in microbiology today and needed increased visibility and expanded coverage. These new chapters should accomplish just that. The genomic revolution has transformed microbiology into a new science almost overnight. For the first time, scientists can inspect, almost in a routine fashion now, the entire genetic blueprint of a microorganism, and then compare the blueprint with those of other organisms, from viruses to humans. Genomics has revealed the great genetic unity and diversity of living organisms and has opened the door to new advancements in every discipline of biology. And combined with proteomic analyses, scientists can now ask sophisticated questions about gene expression in ways never before possible. Chapter 15 in BBOM 10/e tells the genomic story, but goes well beyond just listing organisms whose genomes have been sequenced. The chapter explains what genomics is, how the reams of DNA sequence data that are being generated can be used, and what the genomic revolution has revealed thus far in terms of both the genomic and proteomic capacities of key microorganisms. The new chapters in immunology were written to provide both the basics and the details of this important science. Chapter 22 (Essentials of Immunology) presents the basic principles of immunology without delving into too much detail. This chapter should therefore be a very student-friendly and readily teachable overview of immunology. We reserve the molecular details of immunology for the rather short Chapter 23. This chapter places the essentials material (Chapter 22) within a molecular context for those students and instructors whose background and interests support the study of immunology at this level. In Chapter 24 (Clinical Microbiology and Immunology) we have expanded our coverage of immunoassays to include more information about the basic mechanisms behind precipitation, agglutination, and

antibody production. For those instructors who teach immunology only as a diagnostic or investigative tool, we have also included a very short summary of immune principles here. Thus, with the material on immunology organized as it is, the science of immunology can be integrated into introductory microbiology classes at all levels. The new chapters in medical microbiology are expansions of this material originally covered in only two chapters in previous editions. This has given the authors the opportunity to develop this important material in a more thorough way. And in this day and age where foodborne and waterborne illnesses are major public health problems (even in developed countries), and new threats to health and security, such as bioterrorism, are a fact of life, the unit on medical microbiology and immunology will be both a source of basic principles and a reference for keeping up with events in the news. In summary, long-time users of BBOM will find the tenth edition to be the reliable friend they've always known. New users will find it to be the most current, accurate, and complete coverage of microbiology available in a textbook today. Coupled with an excellent set of teaching aids (see below) BBOM 10/e should set the standard in the field for years to come. Pedagogical Aids Art and photos are the mainstay of any textbook in the biological sciences. And frankly speaking, we think BBOM 10/e has the best in the business in both regards. The art program has once again been delivered by Imagineering of Toronto, Canada. Virtually every piece of art has seen some modification in order to maximize its impact and clarity. Some stylistic improvements have also been introduced into the art program, including a beautiful new rendering of all graphs in the book. High quality photos and photomicrographs have been a mainstay in *Biology of Microorganisms* since the first edition appeared in 1970, and BBOM 10/e proudly carries on this tradition with the inclusion of nearly 50 new BW and color photos. And, as usual, these photos have been supplied by top researchers in the field. BBOM 10/e once again employs a variety of student study aids to weave together the concepts and strengthen the learning experience. Instead of placing summary and quiz material only at the end of a chapter (as many textbooks like to do), BBOM 10/e contains two review tools: concept checks and conce...