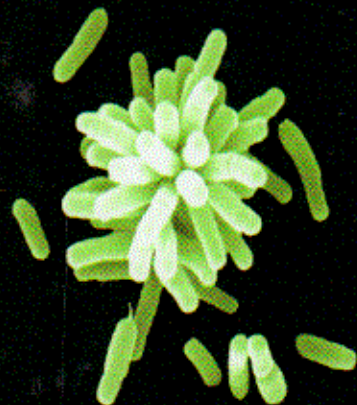


The most current, authoritative, and relevant presentation of prokaryotic physiology and biochemistry.

The Physiology and Biochemistry of Prokaryotes covers the basic principles of prokaryotic physiology, biochemistry, and cell behavior. The fourth edition features the latest developments in the field, including genomics, microbial diversity, systems biology, cell-to-cell signaling, and biofilms. The book also presents microbial metabolism in the context of the chemical and physical problems that cells must solve in order to grow.

Written in a clear, straightforward manner, the fourth edition adds two new coauthors, James Drummond and Clay Fuqua, both from Indiana University. The text is organized by topic rather than by organism; this innovative structure will help students better understand the general principles of physiology and metabolism. Each chapter ends with a summary, thought-provoking study questions, and an extensive list of references to primary research literature that students can access for more information and detailed explanations of material in the text.



New to This Edition

- **New coauthors** James Drummond and Clay Fuqua contribute chapters that make this edition the most authoritative and current book in the discipline
- **Three new chapters** cover RNA and protein synthesis, microbial films, and cell-to-cell communication mechanisms
- **Comprehensive updating** across the entire text, including the inclusion of dozens of new references to the primary literature
- **Companion web site** (www.oup.com/us/white) hosts all of the text images and tables in electronic format for building lecture presentations

About the Authors

David White is Professor Emeritus of Biology at Indiana University. He has taught numerous courses in the areas of microbiology, biochemistry, human biology, and biology.

James Drummond is Associate Professor of Molecular and Cellular Biochemistry at Indiana University.

Clay Fuqua is Professor of Biology and Associate Chair of Research at Indiana University.

About the Cover

Single-celled microorganisms are now recognized to often enjoy a rich social life. Communication between cells and formation of complex multicellular structures are frequently observed among bacteria. These complex interactions can dramatically alter bacterial physiology and biochemistry from the single-celled existence. The cover image is a scanning electron micrograph of a multicellular structure called a *rosette*, formed by *Agrobacterium tumefaciens*, a gram-negative bacterium that causes the plant disease crown gall grown in laboratory culture. The bacteria adhere to one another by a glue produced at one end of the cell and are able to communicate by the process of quorum sensing.

Cover design by Alexander Isley Inc.
Micrograph courtesy Xu and Fuqua

OXFORD
UNIVERSITY PRESS
www.oup.com/us/he

ISBN 978-0-19-539304-0



9 780195 393040