LOOKING AHEAD TO...

# UNIT 1 The Chemistry of Life

8

Campbell / Reece
*BIOLOGY,* **Eighth Edition**

"The basic chemistry content of these important chapters is a cornerstone for the book. Students are much more likely to become engaged in the material if they can see its relevance to their own lives. We've fine-tuned the material and added examples that students can relate to, such as the structures of ibuprofen and the asthma medication albuterol. New **Inquiry figures** demonstrate how an understanding of chemistry is essential to biological research. For example, one Inquiry figure highlights the emerging global problem of ocean acidification and its effects on coral reefs."

— Lisa Urry, *Mills College*
Author team, Units 1, 2, 3

LOOKING AHEAD TO...

# UNIT 2 The Cell

8

Campbell / Reece
*BIOLOGY,* **Eighth Edition**

"Changes to this unit include the judicious addition of recent research and clarification of the fundamental principles of cell structure and function. Knowing that the biological processes in this unit are among the toughest for students to visualize, we've expanded our pedagogical repertoire to enhance student understanding by showing as well as telling. For example, a new series of **movie-quality animations** accompanied by tutorials will support all types of learners as never before. (See the Cellular Respiration sample at www.campbellbiology.com.) In the text, **Draw It questions** give students practice translating their understanding of cell structures and processes onto paper."

— Lisa Urry, *Mills College*
Author team, Units 1, 2, 3

***Unit 2: p. 94***

LOOKING AHEAD TO...

# UNIT 3 Genetics

8

Campbell / Reece
*BIOLOGY,* **Eighth Edition**

"We've reorganized the later chapters in this unit to provide a more seamless flow of topics for students and accessible coverage of important content for instructors. Chapter 18 now covers both bacterial and eukaryotic gene regulation, as well as the genetic basis of embryonic development and cancer. Chapter 21 showcases genomes and their evolution. To support students as they grapple with complex material, the **Concept Check** at the end of each concept section has a built-in hierarchical framework for self-assessment. The questions first build students' confidence as they master the content, then challenge them to push the limits of their understanding in **What If? questions.**"

— Lisa Urry, *Mills College*
Author team, Units 1, 2, 3

***Unit 3: p. 238***

LOOKING AHEAD TO...

# UNIT 4 Mechanisms of Evolution

8

Campbell / Reece
*BIOLOGY,* **Eighth Edition**

"Evolution is the overarching theme of biology, and the new version of this unit demonstrates how biologists have developed our understanding of evolutionary processes and how they apply this knowledge. We've made the evidence for evolution more explicit throughout, including new examples from molecular genetics, fossils, and studies of natural populations. Separate chapters on speciation and macroevolution allow students to focus first on mechanisms and then on the big picture of changes in life on Earth over time. The new **Instructor Guide** provides questions for diagnosing student misconceptions about evolution and suggests strategies to address them."

— Michael Cain, *Bowdoin College*
Author team, Units 4, 5

***Unit 4: p. 438***

LOOKING AHEAD TO...

# UNIT 5
# The Evolution of Biological Diversity

Campbell / Reece
*BIOLOGY,* **Eighth Edition**

"To set the stage for the exploration of biological diversity, Unit 5 now opens with a new Chapter 26 entitled "Phylogeny and the Tree of Life." New figures support students in learning to read phylogenetic trees, and students are given many opportunities to interpret and construct such trees. Throughout the text, new **figure legend questions** encourage students to delve into complex diagrams and assess their understanding of the underlying concepts. We've updated the unit to reflect new discoveries about evolutionary relationships. The fact that phylogenies are not set in stone is used to illustrate how the scientific process results in ongoing revisions to our understanding of biology."

— Michael Cain, *Bowdoin College*
Author team, Units 4, 5

***Unit 5: p. 512***

LOOKING AHEAD TO...

# UNIT 6 Plant Form and Function

8

Campbell / Reece
*BIOLOGY,* **Eighth Edition**

"While continuing to provide clear, accurate content on plant structure and function, our revision also aims to dispel the notion that plant biology is a neglected backwater of scientific endeavor. In addition to including selected recent research findings through new **Inquiry figures**, we demonstrate how the study of plants relates to students' deep interest in the future of Earth and its citizens. For example, new material on sustainable agriculture, soil conservation, and the development of biofuels shows how an understanding of plant biology is essential to devising ways to supply food and energy in the 21st century."

— Peter Minorsky, *Mercy College*
Author team, Unit 6

***Unit 6: p. 712***

LOOKING AHEAD TO...

# UNIT 7 Animal Form and Function

Campbell / Reece
*BIOLOGY,* **Eighth Edition**

"Unit 7 now devotes one chapter to neuron structure and function and a separate chapter to nervous system organization and brain function. Our goal is to provide better pacing of difficult material, while highlighting current research in neurobiology. Starting with a new section in Chapter 40, we more explicitly emphasize coordination and control throughout the unit. New examples illustrate the rich variety of experimental approaches in physiology, and **visual summaries** in the Chapter Reviews help students review complex topics. The unit now ends with a chapter on animal behavior, tying together aspects of genetics, natural selection, and physiology, and providing a bridge to the ecology unit."

— Steven Wasserman,
*UC San Diego*
Author team, Unit 7

***Unit 7: p. 820***

LOOKING AHEAD TO...

# UNIT 8 Ecology

8

Campbell / Reece
*BIOLOGY,* **Eighth Edition**

"In revising these chapters, we've updated the core material with recent research findings and increased our emphasis on "how we know what we know" with new **Research Methods** and **Inquiry figures**. **What if? questions** in the Inquiry figures highlight the importance of experimental design and ask students to analyze and interpret results. Thematically, we've underscored the connections between ecology and evolution, as well as between ecology and cellular processes. In this capstone unit, we aim to show how ecology combines biological knowledge at all scales—from molecules to the biosphere."

— Rob Jackson, *Duke University*
Author team, Unit 8

***Unit 8: p. 1080***

# Introducing the Eighth Edition Author Team

**Jane B. Reece** has participated on every edition of ***BIOLOGY***—first as an editor and contributor, then as an author. For the **Eighth Edition**, she is joined by coauthors who embody a wealth of additional biological expertise and teaching experience. In order of their units in the **Eighth Edition**, they are:

**Lisa A. Urry,** Chair of the Biology Department at Mills College. Lisa was a major contributor to the **Seventh Edition**. She studies sea urchin development.

**Michael L. Cain,** an ecologist and evolutionary biologist now at Bowdoin College. He has taught in a range of university settings.

**Peter V. Minorsky,** a professor at Mercy College, New York, and the Science Writer for the journal *Plant Physiology*. He has revised Unit 6 for the last two editions.

**Steven A. Wasserman,** a professor and instructor in the general biology course at UC San Diego. His lab studies signaling in embryos and immune cells of fruitflies.

**Robert B. Jackson,** a professor at Duke and the Director of the Duke Center on Global Change and the Program in Ecology. He is also the author of two trade books.

# Collaboration on Supplements and Media

A hallmark of every edition of this book has been sympathetic attention to the needs of instructors as well as students. For the **Eighth Edition**, we are collaborating on instructor resources as never before. Among our new offerings will be an integrated Instructor Guide that includes expanded information on student misconceptions as well as class-tested techniques for helping students to overcome them. Author involvement in our student media is ensuring that it is accurate and pedagogically aligned with the textbook. And of course, an important part of our collaboration is with the instructors who use our materials.

# Benefits of Collaboration

"My chapters benefit from the suggestions of my coauthors, each of whom contribute different areas of expertise. I have had helpful, enjoyable dialogues with every member of the author team during our work on the **Eighth Edition**. In my units, this synthetic process has shaped my treatment of important topics ranging from osmosis and acidification of the oceans to the gene, mutations, and the evolution of developmental mechanisms."

— Lisa Urry, *Mills College*
Author team, Units 1, 2, 3

# Benefits of Collaboration

"Each coauthor brings their experience to bear on our discussions of bookwide priorities and goals. For me, one major benefit has been lead author Jane Reece's experience and perspective on how to translate feedback from instructors into solutions that work well for students. She is right on target in her comments about my revision plans, providing valuable suggestions about what does and does not work with Key Concept statements and organizational issues."

— Michael Cain, *Bowdoin College*
Author team, Units 4, 5

# Collaboration has ALWAYS been a part of the book's success

"For me, one of the most rewarding aspects of working on this textbook has always been the opportunity for close collaboration with talented team members—starting in 1979 with Neil Campbell himself and now continuing with my new coauthors. Collaboration with editors, artists, designers, and sales and marketing staff has also been essential to the book development process. Last but far from least, the biology instructors and students who have provided feedback on the manuscripts and books have always been invaluable members of the Campbell team!"

— Jane Reece

# Learning from Neil

"Good textbooks must be up-to-date, visually engaging, and clearly written, with the right selection of topics and appropriate detail. It was my great privilege to learn the craft from one of the most successful biology textbook authors of all time—Neil Campbell. Neil taught me to follow my pedagogical instincts but to weigh carefully the insights of the many expert reviewers, editors, and illustrators who contribute in no small way to Campbell/Reece's enduring success."

— Peter Minorsky, *Mercy College*
Author team, Unit 6

# Benefits of Collaboration

8

"We coauthors look beyond our specific chapters to generate visual styles and topical threads that span multiple units. More generally, we hope to provide students with an appreciation of the underlying themes that connect the subdisciplines of biology."

— Steven Wasserman,
*UC San Diego*
Author team, Unit 7

# Benefits of Collaboration

8

"My work on Unit 8 benefits from the opportunity to bounce ideas off my coauthors and gather suggestions for Inquiry figures and engaging examples. We also look for ways to make connections between topics in different parts of the book. We all share the goal of helping students see how biological knowledge is relevant to their daily lives."

—Rob Jackson, *Duke University*
Author team, Unit 8