

Preface

Vision and Change in Undergraduate Biology Education: A Call to Action encourages instructors to improve student engagement and learning in introductory biology courses. The central idea of the original *Vision and Change* report—and of the conferences and reports that followed—is that we need to turn away from teaching methods that reward students who memorize and regurgitate superficial knowledge. Instead, we need to emphasize deeper learning that requires students to understand and apply course content. This idea is precisely what I have tried to achieve since I started teaching at the University of Oklahoma in 1997, and it has been a guiding principle in the creation of my books and digital material as well.

This edition retains what users have always loved about this book: the art program, readable narrative, handy study tips, Investigating Life essays, and tutorial animations. We also supply a variety of supplements that make teaching easier, including eye-catching PowerPoint® lectures with integrated clicker questions that assess conceptual understanding. As you examine this new edition, however, I hope you will see an even stronger emphasis on connections and the “big picture.” Our most prominent new feature, Survey the Landscape, shows how each chapter’s content fits into the unit’s overall emphasis. Students often struggle to connect new topics to what they have learned previously; Survey the Landscape is designed to help them keep an eye on the big picture. These new figures, which appear in each chapter opener, can be integrated with

the Pull It Together figure in every chapter’s summary to help students see the “forest” and the “trees.”

Many other changes to this book reflect the growing numbers of instructors and students who are embracing digital textbooks. Much of our work for the fourth edition was behind-the-scenes adjustments that make the narrative and art more digital-friendly. Moreover, SmartBook® user data from thousands of students using the third edition helped us to identify passages that needed clarification. The user data also guided us as we created a carefully selected array of digital Learning Resources to accompany many probes in SmartBook. In addition, many chapters have bonus features for ebook users, including new digital-only miniglossaries and figures.

I agree with the *Vision and Change* report’s call for instructors to embrace active learning techniques, but I also believe that one set of tools and techniques does not work in every classroom. For that reason, my team and I are proud to create a package that gives you the flexibility to teach introductory biology in a way that works best for you. The following sections illustrate the features and resources for this edition that can help you meet your teaching goals.

I hope that you and your students enjoy this text and that it helps cultivate an understanding of, and deep appreciation for, biology.

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The Chapter Summary highlights key points and terminology from the chapter.