

GENOMES. *Second Edition.*

By T A Brown. Published by Wiley-Liss, New York, by arrangement with BIOS Scientific, Oxford. \$97.50. xxvii + 572 p; ill.; index. ISBN: 0-471-25046-5. 2002.

This is the second edition of a remarkably comprehensive book that synthesizes and presents the current state of knowledge about genome sequencing techniques, methods for studying gene structure and function, and comparative methods to examine processes governing genome evolution over time. This edition contains 16 chapters, a glossary, an extensive index, and an appendix. It is 100 pages longer than its predecessor and improves upon it by updating the content and adding the Study Aids and other learning outcomes in all chapters. The book is separated into four parts (one more than the first edition); the first part presents extensive information on the human genome and the advances in our knowledge precipitated by sequencing various model organism genomes. These concepts are elaborated upon in the following chapters on genome anatomies, transcriptomes, and proteomes. In the subsequent sections, the current edition is organized in a way similar to its predecessor, focusing on how genomes are studied (Part 2), how they function (Part 3), and how they evolve (Part 4).

As with its predecessor, this edition of *Genomes* is well suited for a broad range of science students. Illustrations in this book are thorough, yet straightforward and add conceptual insight to the accompanying text. The inclusion of seminal experiments provides contextual insight and an important historical perspective. The references are current and provide an opportunity for detailed investigation by interested students. The inclusion of a “key terminology” section at the end of each chapter provides a useful study tool; but, in the current format, this section is too expansive and sophomoric. The Self-Study questions are sufficiently challenging and numerous enough to thoroughly examine the key aspects of each chapter, and the Problem Based Learning questions provide an opportunity to examine a number of topics in even greater depth. The Technical Notes sections interspersed throughout the text were

extremely engaging for students interested in exciting areas of technology and its current applications. A clear strength of this volume is the breadth of the molecular genetics, from the technical aspects to the current applications—all of which are supported by excellent descriptions of fundamental molecular processes. Clearly, this volume is not intended to be as detailed as those dedicated solely to molecular genetics, although there is more than adequate detail to engage even the top students. For example, in Chapter 5, the dual discussion of genetic mapping and physical mapping of the genome provides a current and comprehensive assessment of genome mapping. Similarly, the regulation of genome activity described in Chapter 12 is well covered from external stimuli that trigger gene expression to changes in local chromatin structure. This section is then concluded with excellent examples in an organismal context, providing a linear, comprehensive picture of one aspect of genome activity. Therefore, this updated volume of *Genomes* continues to serve the needs of its intended audience and remains a useful primary resource to obtain both an overview and primary details for students and researchers interested in genomes and molecular biology.

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