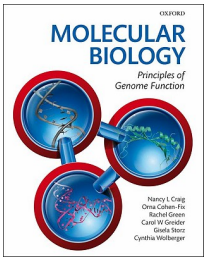
MOLECULAR BIOLOGY, Principles of genome function



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DESCRIPTION:
Molecular Biology: Principles of Genome Function offers a fresh, distinctive approach to teaching one of today""s most fascinating scientific subjects. Its perspective reflects the challenge of teaching a subject that is in many ways unrecognizable from the molecular biology of the 20th century--a discipline in which our understanding has advanced immeasurably, but about which many intriguing questions remain.

FEATURES:

* A focus on underlying principles--rather than an attempt to offer exhaustive detail--equips students with a robust conceptual framework to which they can add further details from the vast amount of scientific information available today.
* An emphasis on the commonalities that exist between bacteria, archae, and eukaryotes--along with coverage of their differences--provides an accurate depiction of our current understanding of the conserved nature of molecular biology and the variations that underpin biological diversity.
* An integration of key themes and concepts demonstrates how molecular phenomena like chromatin modification and RNA silencing have diverse impacts on genome function. It also helps students to appreciate molecular biology as a unified discipline, with many components and phenomena acting in concert.
* Clear demonstrations of the experimental basis of molecular biology (set off in the text in "Experimental Approach" panels) reflect the central importance of experimental evidence to furthering our understanding of molecular biology. These panels describe pieces of research that have been particularly valuable in elucidating different aspects of the discipline.
* Pedagogical features including full-color, custom-drawn artwork end-of-chapter summaries suggested readings grouped by topic and an extensive glossary of key terms further enhance the text.
* An extensive Companion Website features additional materials for both instructors and students. For adopters of the text: figures from the book, available to download for use in lectures, and "Journal Club," suggested research papers and discussion questions linked to topics featured in the book. For students and instructors: "New and noteworthy"--key highlights from the field, updated for the start of each semester--and a library of three-dimensional models of key molecular structures featured in the book.

CONTENTS:
Chapter 1: Genomes and the flow of biological information
Chapter 2: Biological molecules
Chapter 3: The chemical basis of life
Chapter 4: Chromosome structure and function
Chapter 5: The cell cycle
Chapter 6: DNA replication
Chapter 7: Chromosome segregation
Chapter 8: Transcription
Chapter 9: RNA processing
Chapter 10: Translation
Chapter 11: Protein modification and targeting
Chapter 12: Cellular responses to DNA damage
Chapter 13: Repair of DNA double-strand breaks and homologous recombination
Chapter 14: Mobile DNA
Chapter 15: Genomics and genetic variation
Chapter 16: Tools and techniques in molecular biology