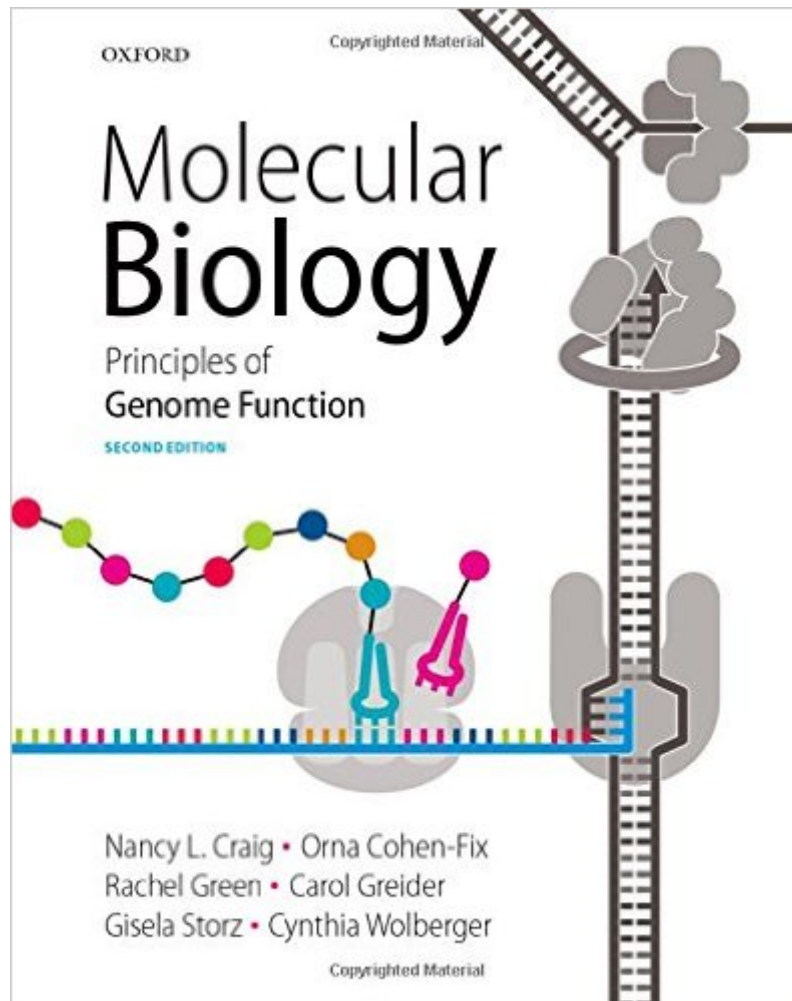


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# Molecular Biology: Principles Of Genome Function



## Synopsis

The biological world operates on a multitude of scales - from molecules to tissues to organisms to ecosystems. Throughout these myriad levels runs a common thread: the communication and onward passage of information, from cell to cell, from organism to organism and ultimately, from generation to generation. But how does this information come alive to govern the processes that constitute life? The answer lies in the molecular components that cooperate through a series of carefully-regulated processes to bring the information in our genome to life. These components and processes lie at the heart of one of the most fascinating subjects to engage the minds of scientists today: molecular biology. *Molecular Biology: Principles of Genome Function*, Second Edition, offers a fresh approach to the teaching of molecular biology by focusing on the commonalities that exist between the three kingdoms of life, and discussing the differences between the three kingdoms to offer instructive insights into molecular processes and components. This gives students an accurate depiction of our current understanding of the conserved nature of molecular biology, and the differences that underpin biological diversity. Additionally, an integrated approach demonstrates how certain molecular phenomena have diverse impacts on genome function by presenting them as themes that recur throughout the book, rather than as artificially separated topics. As an experimental science, molecular biology requires an appreciation for the approaches taken to yield the information from which concepts and principles are deduced. Experimental Approach panels throughout the text describe research that has been particularly valuable in elucidating difference aspects of molecular biology. Each panel is carefully cross-referenced to the discussion of key molecular biology tools and techniques, which are presented in a dedicated chapter at the end of the book. *Molecular Biology* further enriches the learning experience with full-color artwork, end-of-chapter questions and summaries, suggested further readings grouped by topic, and an extensive glossary of key terms.

**Features:** A focus on the underlying principles of molecular biology equips students with a robust conceptual framework on which to build their knowledge. An emphasis on their commonalities reflects the processes and components that exist between bacteria, archae, and eukaryotes. Experimental Approach panels demonstrate the importance of experimental evidence by describing research that has been particularly valuable in the field.

## Book Information

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## Customer Reviews

I'm comparing this book (MB) to Molecular Biology of the Cell (MBoC), which is probably my favorite textbook of all time. This one (MB) is not as much of a general cell biology book as it primarily covers only the elements of the so-called "central dogma" of molecular biology. DNA replication and transcription into RNA, and RNA translation into protein, plus all the regulatory aspects of those processes (as well as chapters on the cell cycle, DNA repair, transposable elements, and genomics), unlike MBoC which spends more or less the first half of the book on those topics and then devotes the second half to the further biology of the Cell, covering things like membranes, energy conversion, cell signalling, cancer, and the immune system. Both books do a good job of introducing the Biochemistry you need in order to understand what follows. MB has a great first chapter that gives an overview of the book (basically "Molecular Biology in 30 pages"). Where MB shines though is in its more in-depth coverage of the topics it touches on. It devotes about twice as many pages to these topics as the current edition of MBoC does. MB is also wonderfully illustrated and does a good job of visually explaining things. MB contains lots of "experimental" panels that talk about how various aspects of the cell were discovered. Both books include chapters on techniques for manipulating the genetic material in cells. I thought the current edition of MBoC felt slightly more up to date, but both books are very current editions with a good overview of the current state of the art. Both books are quite readable.

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