

Evolutionary biology has increasingly relied upon tools developed in molecular biology that allow for the structure and function of macromolecules to be used as data for exploring the patterns and processes of evolutionary change. *Integrated Molecular Evolution, Second Edition* is a textbook intended to expansively and comprehensively review evolutionary studies now routinely using molecular data. This new edition has been thoroughly updated and expanded, and provides a basic summary of evolutionary biology as well as a review of current phylogenetics and phylogenomics.

Reflecting a burgeoning pedagogical landscape, this new edition includes nearly double the number of chapters, including a new section on molecular and bioinformatic methods. Dedicated chapters were added on:

- Evolution of the genetic code
- Mendelian genetics and population genetics
- Natural selection
- Horizontal gene transfers
- Animal development and plant development
- Cancer
- Extraction of biological molecules
- Analytical methods
- Sequencing methods and sequencing analyses
- Omics
- Phylogenetics and phylogenetic networks
- Protein trafficking
- Human genomics

More than 400 illustrations appear in this edition, doubling the number included in the first edition, and over 100 of these diagrams are now in color.

The second edition combines and integrates extensive summaries of genetics and evolutionary biology in a manner that is accessible for students at either the graduate or undergraduate level. It also provides both the basic foundations of molecular evolution, such as the structure and function of DNA, RNA and proteins, as well as more advanced chapters reviewing analytical techniques for obtaining sequences, and interpreting and archiving molecular and genomic data.



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