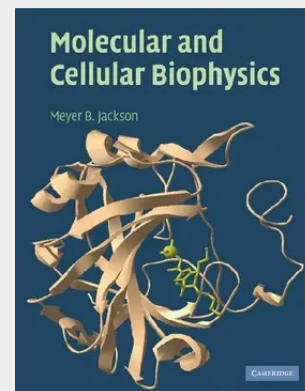


Molecular and Cellular Biophysics

Molecular and Cellular Biophysics provides advanced undergraduate and graduate students with a foundation in the basic concepts of biophysics. Students who have taken physical chemistry and calculus courses will find this book an accessible and valuable aid in learning how these concepts can be used in biological research. The text provides a rigorous treatment of the fundamental theories in biophysics and illustrates their application with examples. Conformational transitions of proteins are studied first using thermodynamics, and subsequently with kinetics. Allosteric theory is developed as the synthesis of conformational transitions and association reactions. Basic ideas of thermodynamics and kinetics are applied to topics such as protein folding, enzyme catalysis and ion channel permeation. These concepts are then used as the building blocks in a treatment of membrane excitability. Through these examples, students will gain an understanding of the general importance and broad applicability of biophysical principles to biological problems.

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