Record Nr. UNINA9910797029903321 Autore Zuckerman Daniel M. Titolo Statistical physics of biomolecules : an introduction / / by Daniel M. Zuckerman Pubbl/distr/stampa Boca Raton, FL:,: CRC Press, an imprint of Taylor and Francis,, 2010 **ISBN** 0-429-15074-1 1-4200-7379-6 Edizione [First edition.] Descrizione fisica 1 online resource (358 p.) Disciplina 572 Soggetti **Biophysics** Statistical physics **Biomolecules** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references at the end of each chapters. Nota di contenuto Front cover; Contents; Preface; Acknowledgments; Chapter 1: Proteins Don't Know Biology; Body; Chapter 2: The Heart of It All: Probability Theory; Chapter 3: Big Lessons from Simple Systems: Equilibrium Statistical Mechanics in One Dimension; Chapter 4: Nature Doesn't Calculate Partition Functions: Elementary Dynamics and Equilibrium; Chapter 5: Molecules Are Correlated! Multidimensional Statistical Mechanics; Chapter 6: From Complexity to Simplicity: The Potential of Mean Force; Chapter 7: What's Free about "Free" Energy? Essential **Thermodynamics** Chapter 8: The Most Important Molecule: Electro-Statistics of WaterChapter 9: Basics of Binding and Allostery; Chapter 10: Kinetics of Conformational Changeand Protein Folding; Chapter 11: Ensemble Dynamics: From Trajectories to Diffusion and Kinetics; Chapter 12: A Statistical Perspective on Biomolecular Simulation; Index; Back cover Sommario/riassunto From the hydrophobic effect to protein-ligand binding, statistical physics is relevant in almost all areas of molecular biophysics and biochemistry, making it essential for modern students of molecular behavior. But traditional presentations of this material are often

difficult to penetrate. Statistical Physics of Biomolecules: An

Introduction brings "down to earth" some of the most intimidating but

important theories of molecular biophysics.