

Molecular Driving Forces: Statistical Thermodynamics in Biology, Chemistry, Physics, and Nanoscience, 2nd Edition

By Ken A. Dill, Sarina Bromberg



Molecular Driving Forces: Statistical Thermodynamics in Biology, Chemistry, Physics, and Nanoscience, 2nd Edition By Ken A. Dill, Sarina **Bromberg**

Molecular Driving Forces, Second Edition is an introductory statistical thermodynamics text that describes the principles and forces that drive chemical and biological processes. It demonstrates how the complex behaviors of molecules can result from a few simple physical processes, and how simple models provide surprisingly accurate insights into the workings of the molecular world.

Widely adopted in its First Edition, *Molecular Driving Forces* is regarded by teachers and students as an accessible textbook that illuminates underlying principles and concepts. The Second Edition includes two brand new chapters: (1) "Microscopic Dynamics" introduces single molecule experiments; and (2) "Molecular Machines" considers how nanoscale machines and engines work. "The Logic of Thermodynamics" has been expanded to its own chapter and now covers heat, work, processes, pathways, and cycles. New practical applications, examples, and end-of-chapter questions are integrated throughout the revised and updated text, exploring topics in biology, environmental and energy science, and nanotechnology. Written in a clear and reader-friendly style, the book provides an excellent introduction to the subject for novices while remaining a valuable resource for experts.



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Editorial Review

About the Author

Ken A. Dill is Professor of Pharmaceutical Chemistry and Biophysics at the University of California, San Francisco. He received his undergraduate training at MIT, his PhD from the University of California, San Diego, and did postdoctoral work at Stanford. A leading researcher in biopolymer statistical mechanics and protein folding, he has been the President of the Biophysical Society and received the Hans Neurath Award from the Protein Society in 1998.

Sarina Bromberg received her BFA at the Cooper Union for the Advancement of Science and Art, her PhD in molecular biophysics from Wesleyan University, and her postdoctoral training at the University of California, San Francisco. She writes, edits and illustrates scientific textbooks.

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