

"Helmut Schiessel's Biophysics for Beginners is an excellent text for anyone interested in understanding the workings of the cell nucleus from the perspective of physics. The book is unique in providing a deep, authoritative introduction to the physical principles that underlie our current understanding of the packaging and processing of the nucleic acids and proteins within the nucleus and in introducing the reader to key biological questions."

Prof. Wilma K. Olson

Rutgers, the State University of New Jersey, USA

"The book by Helmut Schiessel is a welcome timely addition to the growing but still badly insufficient literature on modern biological physics. This field of science is traditionally difficult for students and teachers alike: students lack either knowledge of physics or background in biology, or both. The attractive feature of the book is that it is self-contained: it starts with a concise description of the main ideas and facts of molecular biology and then continues to introduce the main concepts of statistical physics and polymer physics. Both physics and biology introductions are solid enough for the student to start using these ideas. Do not miss this book!"

Prof. Alexander Grosberg

New York University, USA

"This is a most welcome book showing beautiful applications of physics to polymers in cells. It will clearly be useful as a basis to teach biophysics and more generally to all physicists interested in the properties of cells and their nucleus, and also to biologists interested in the physical properties of biopolymers."

Prof. Jean-François Joanny

Institut Curie, France

"Teaching an introductory course in theoretical biological physics is a major challenge. The lecturer not only needs to introduce a diverse set of theoretical concepts from different areas of physics, but also needs to provide a thorough introduction to molecular biology and a broad set of examples of how to apply the physics concepts to biological systems. This textbook does all of this in a well-balanced mix. It will be an excellent choice both as course material and for self-study."

Prof. Ulrich Gerland

University of Munich (LMU), Germany

Biophysics is a new way of looking at living matter. It uses quantitative experimental and theoretical methods, thereby opening a new window for studying and understanding life processes.

This textbook gives compact introductions to the basics of the field and then provides in-depth discussions of more advanced biophysics subjects, going all the way to state-of-the-art experiments and their theoretical interpretations. The book is unique in that it provides a general introduction to biophysics, yet restricts itself to processes that occur inside the cell nucleus and that involve biopolymers (DNA, RNA, and proteins).



Helmut Schiessel studied physics at the Albert-Ludwigs University, Freiburg, Germany. There he did his Ph.D. with Prof. A. Blumen in the Group for Theoretical Polymer Physics. After graduating in 1997, he worked as a postdoc with Prof. P. A. Pincus at the University of California, Santa Barbara. Then, he was a joint postdoc with Profs. W. M. Gelbart and R. Bruinsma at the University of California, Los Angeles. In 2000 he joined the Theory Group of the Max Planck Institute for Polymer Research, Mainz, Germany, where he was in charge of a biophysics research project. Since January 2005, Prof. Schiessel has been

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