

Chapman & Hall/CRC
Mathematical and Computational Biology Series

"For everyone who is interested in chromatin organization and its role in gene regulation and who is willing address this topic in a quantitative manner, this book provides an excellent start. Ralf Blossey captures the complexity of chromatin biology in several well-chosen topics and builds physical models to explain a wide variety of recent experimental observations. And for those who want to go further, the book is larded with references that will guide you in the right direction."

—Prof. John van Noort, Biological and Soft Matter Physics, Leiden University, The Netherlands

"This book will prove to be extremely useful and motivating for any scientist, student or newcomer interested in the growing field of genomics and epigenetics. It illustrates the need for interdisciplinary approaches to tackle one of the main challenges in cell biology: understanding how chromatin is spatially and dynamically organized in the nucleus of eukaryotic cells and how this affects genome structure and function...It should be considered as providing an initial journey for readers with theoretical and computational background knowledge and expertise to the centre of the spatio-temporal complexity of the eukaryotic cell nucleus."

—Alain Arneodo, Université de Bordeaux

An invaluable resource for computational biologists and researchers from other fields seeking an introduction to the topic, **Chromatin: Structure, Dynamics, Regulation** offers comprehensive coverage of this dynamic interdisciplinary field, from the basics to the latest research. Computational methods from statistical physics and bioinformatics are detailed whenever possible without lengthy recourse to specialized techniques.

Features

- Provides an introduction to chromatin biology, including useful quantitative reference material
- Offers a concise description of the underlying experimental techniques
- Details computational approaches to chromatin from statistical physics and bioinformatics
- Discusses chromatin on three levels: its structure, dynamics and regulation
- Explains histone modifications, chromatin remodeling and exemplary quantitative models for epigenetic regulation.

About the Author

Ralf Blossey is a Research Director at the French National Science Center CNRS. A statistical physicist by training, he is currently researching chromatin regulation at the Laboratory of Glycobiology (UGSF) in Lille.



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