

Networks in Cell Biology

The science of complex biological networks is transforming research in areas ranging from evolutionary biology to medicine. This is the first book on the subject, providing a comprehensive introduction to complex network science and its biological applications.

With contributions from key leaders in both network theory and modern cell biology, this book discusses the network science that is increasingly foundational for systems biology and for the quantitative understanding of living systems. It surveys studies in the quantitative structure and dynamics of genetic regulatory networks, molecular networks underlying cellular metabolism and other fundamental biological processes. The book balances empirical studies and theory to give a unified overview of this interdisciplinary science. It is a key introductory text for graduate students and researchers in physics, biology and biochemistry, and presents ideas and techniques from fields outside the reader's own area of specialization.

'Network science has experienced a spectacular explosion in the past decade, influencing a wide range of fields, from computer science to sociology. Yet, nowhere is the impact of the new theoretical framework as promising as it is in cell biology – many of the difficult open questions cannot be understood without a network-based approach. *Networks in Cell Biology* offers an excellent introduction to this frontier, at the same time capturing the current state of research. With contributions from the best in the field, it is a valuable addition to the shelf of anyone interested in this exciting area.'

Albert-László Barabási, Center for Complex Network Research, Northeastern University and Department of Medicine, Harvard Medical School

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Cover illustration: pictorial representation of the regulatory network promoted by the Catabolite Activator Protein.
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