

Special Issue

Mathematical Modeling in Computational Biology and Bioinformatics

Message from the Guest Editor

Mathematics plays a vital role in every domain of biology, from molecular structures to ecosystem dynamics. The interplay between biological theories and mathematical models has provided profound insights, guided experiments, and explained complex processes. Mathematical modeling, integral to biological research, builds from foundational assumptions toward logical conclusions tested against empirical data. With the growth of genomic and protein databases and advances in network theory, complex systems, and bioinformatics, the ability to validate models has greatly expanded. This Special Issue highlights the pivotal role of mathematical models in advancing biological knowledge and interpreting experimental results. It focuses on integrating mathematics and biology to address both classical and modern challenges. We welcome contributions using innovative mathematical or computational approaches in areas such as fractal physiology, mathematical epidemiology, signaling networks, evolutionary dynamics, and microbiome modeling. Through original research and reviews, this issue aims to bridge mathematics and biology, offering new perspectives and tools for the life sciences.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.4 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the first half of 2025).