

Special Issue

Advances in Mathematical Modeling of Biological Systems: Deterministic, Stochastic, and Complex Dynamics

Message from the Guest Editors

Mathematical modeling is a fundamental tool for understanding complex biological phenomena, including disease dynamics, ecological interactions, and evolutionary processes. This Special Issue aims to showcase cutting-edge research employing deterministic, stochastic, and hybrid modeling approaches to address key biological challenges. We invite submissions that develop, analyze, and apply mathematical techniques to biological systems, with a particular focus on the following:

- Cancer dynamics and immune system interactions;
- Epidemiological modeling and infectious disease spread;
- Population dynamics and ecological modeling;
- Systems biology and physiological processes;
- Population ecology, predator–prey, host–parasitoid, and host–parasite systems, including discrete maps, chaos detection, and control strategies;
- Reaction–diffusion models and complex spatiotemporal patterns in biological systems.

Guest Editors

Prof. Dr. Sophia Jang

Prof. Dr. Jui-Ling Yu

Prof. Dr. Hsiu-Chuan Wei

Deadline for manuscript submissions

31 December 2025



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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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Prof. Dr. Francisco Chiclana

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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).