Special Issue

Mathematical Modelling of Epidemic Dynamics and Control

Message from the Guest Editor

I'm pleased to present this special issue on Mathematical Modelling of Epidemic Dynamics and Control. Infectious diseases pose a major global challenge, and mathematical modeling is crucial for understanding transmission, evaluating interventions, and guiding public health policy. This collection explores cutting-edge research on epidemic modeling, including deterministic and stochastic frameworks, network-based approaches, and data-driven techniques. Key topics include:

- Transmission dynamics of emerging and re-emerging infectious diseases.
- Optimal control strategies, such as vaccination, quarantine, and social distancing.
- Impact of human behavior and mobility on disease spread.
- Machine learning and AI in epidemic forecasting.
- Economic and social factors in epidemic management.

The contributions highlight both theoretical advances and practical applications, providing insights for policymakers and researchers. By integrating mathematical rigor with real-world data, this issue aims to enhance our ability to predict, prevent, and mitigate future outbreaks. We hope this compilation fosters interdisciplinary collaboration and inspires innovative solutions for epidemic control.

Guest Editor

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Deadline for manuscript submissions

31 July 2026

Mathematics

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 4.6

mdpi.com/si/257062

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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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