Special Issue

Mathematical and Computational Biology of Viruses at the Molecular or Cellular Levels

Message from the Guest Editors

Mathematical and computational biology of viruses is becoming increasingly important at a time when these infectious agents present a challenge to humanity. At the population level, much attention has been paid to compartmental epidemic models. To complement the population level, attention should also be paid to the cellular level and the molecular level in applying mathematics.

This Special Issue will examine the molecular or cellular levels of viruses. Mathematics can contribute to the understanding of RNA or DNA structure in viruses by the use of molecular descriptors, which may involve eigendecomposition of a matrix that is indicative of their topology, as well as to the understanding of the viral replication within the cell or the spread of infection between the cells by the use of differential equation models. Other areas of advanced mathematics used for studying viruses at the levels of molecules and cells are also welcome. Mathematical analysis, numerical methods, and scientific computing related to all viruses at the molecular or cellular levels will also be considered.

Guest Editors

Prof. Dr. Danny Barash

Department of Computer Science, Ben-Gurion University, Beer-Sheva 8410501, Israel

Prof. Dr. Alexander Churkin

Department of Software Engineering, Sami Shamoon College of Engineering, Beer-Sheva 8410802, Israel

Deadline for manuscript submissions

closed (31 August 2022)

Mathematics

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 4.6

mdpi.com/si/72345

Mathematics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
mathematics@mdpi.com

mdpi.com/journal/mathematics

Mathematics

an Open Access Journal by MDPI

Impact Factor 2.2
CiteScore 4.6

mdpi.com/journal/mathematics

MDPI

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.

Editor-in-Chief

Prof. Dr. Francisco Chiclana
School of Computer Science and Informatics, De Montfort University, The Gateway, Leicester LE1 9BH, UK

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), RePEc, and other databases.

Journal Rank:

JCR - Q1 (Mathematics) / CiteScore - Q1 (General Mathematics)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.3 days after submission; acceptance to publication is undertaken in 2.8 days (median values for papers published in this journal in the second half of 2025).