

Special Issue

Cardiovascular Models and Biomechanics

Message from the Guest Editors

Cardiovascular diseases remain the leading cause of mortality worldwide, placing immense burdens on healthcare systems and patients alike. Engineering approaches offer unique insights into disease mechanisms and potential therapeutic interventions by quantifying the complex biomechanical environments within the cardiovascular system. This Special Issue seeks original research articles and review papers that address fundamental and applied aspects of cardiovascular biomechanics. Topics of interest include, but are not limited to, the following: Multiscale and multiphysics modeling of cardiac and vascular mechanics;

Fluid–structure interaction in cardiovascular flows;
Patient-specific modeling for surgical planning and intervention design;

Biomechanics of cardiovascular devices and implants;
Mechanobiology of vascular cells and tissues;
Machine learning approaches for cardiovascular modeling and analysis;

Translational research bridging cardiovascular biomechanics and clinical practice. We look forward to receiving your valuable contributions to this exciting field at the intersection of engineering, biomechanics, and cardiovascular medicine.

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About the Journal

Message from the Editor-in-Chief

You are invited to contribute a research article or a comprehensive review for consideration and publication in *Bioengineering* (ISSN 2306-5354). *Bioengineering* is published in open access format – research articles, reviews and other contents are released on the Internet immediately after acceptance. The scientific community and the general public have unlimited and free access to the content as soon as it is published. *Bioengineering* provides an advanced forum for the science and technology of bioengineering. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Anthony Guiseppi-Elie

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 17 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).