

## Special Issue

# Recent Advances in the Application of Mathematical and Computational Models in Biomedical Science and Engineering (2nd Edition)

### Message from the Guest Editors

Mathematical modeling in biomedical engineering plays a vital role in understanding complex multidisciplinary interactions and processes at the organ, tissue, and cellular scales. This Special Issue aims to collect papers related to the advancement and development of novel mathematical models broadly applied across a wide range of biomedical engineering and medical physics, including diagnostic, therapeutic, imaging, and interventional applications. Topics of particular interest include: Coupled multiphysics and multiscale models in bioengineering and biomedicine; Bioheat models and thermography; Models for cancer theranostics; Patient-specific models; Dynamic and network models; Machine learning and multiscale modeling in the biological, biomedical, and behavioral sciences; Synthetic biology and its applications; Mathematical approaches for regenerative medicine; Hemodynamics and drug delivery models; Computational neuroscience and neuroengineering, data-driven approaches in multidisciplinary neuroscience; Numerical methods and algorithms in the biomedical engineering; Computational and systems biology; Reduced-order models; Biomedical simulation and high-performance computing.

### Guest Editors

Dr. Sundeep Singh  
Prof. Dr. Roderick Melnik  
Dr. Manpreet Singh

### Deadline for manuscript submissions

closed (31 December 2025)



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### Editor-in-Chief

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