Special Issue

Cutting-Edge Biomechanics: Unlocking the Future of Biomedical Engineering

Message from the Guest Editor

- **Computational Biomechanics and Modeling:** Finite element analysis, multiscale and patient-specific modeling.
- **Experimental Biomechanics:** Innovative in vitro/in vivo methods, dynamic mechanical testing, imaging-based characterization.
- **Cellular and Molecular Biomechanics:** Mechanotransduction, cell–matrix mechanics, mechanobiology of disease.
- **Tissue Biomechanics and Regenerative Engineering:** Tissue remodeling, mechanobiology of development and repair, bioinspired scaffold design.
- **Cardiovascular Biomechanics:** Hemodynamics, arterial wall mechanics, heart valve function, device–tissue interactions.
- **Musculoskeletal Biomechanics:** Joint mechanics, bone adaptation, orthopedic implants, neuromuscular rehabilitation.
- **Sports and Injury Biomechanics:** Impact analysis, injury risk prediction, performance optimization.
- **Biomaterials and Medical Device Innovation:** Mechanical evaluation of biomaterials, prosthetic design, functional testing.
- **Medical Robotics and Haptics:** Surgical simulation, sensor-integrated rehabilitation devices, human–machine interfaces.
- **AI and Machine Learning in Biomechanics:** Data-driven modeling, real-time analytics, image processing and classification.

Guest Editor

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Deadline for manuscript submissions

30 April 2026

Biology

an Open Access Journal by MDPI

Impact Factor 3.5
CiteScore 7.4
Indexed in PubMed

mdpi.com/si/246542

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A major strength of biological science is the diversity of approaches that biological scientists apply to their research problems. *Biology* reflects this diversity and brings together studies employing the varied experimental and theoretical approaches that are fueling biological discovery. *Biology*, the journal, is a fully peer-reviewed publication with a rapid and economical route to open access publication and is listed on PubMed. All articles are peer-reviewed and the editorial focus is on determining that the work is scientifically sound rather than trying to predict its future impact.

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