

BIOMECHANICS AND MECHANOBIOLOGY

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ABSTRACT

Biomechanics represents the broad interplay between biological systems and mechanics and foster integration of scientific knowledge between related basic and applied subdisciplines. The rational principles of Solid Mechanics have an unveiled potential in understanding, diagnosing and treating pathologies that manifest by tissue consistency changes. A multidisciplinary effort may allow a better understanding of the questions implied in physiology, pathology and physics from the sub-cellular level to the organ-level, in a unified way. In parallel to biomechanics, tissue engineering and mechanobiology has gained great attention in the last decade. They encompass a multidisciplinary field involving biology, mathematics, and engineering merged with the aim of providing new perspectives and solutions to medicine. In this spirit, our session aims to foster the exchange of new ideas by gathering the state-of-the-art developments pertaining to biomechanics and computational mechanics. It aims to include, but is not limited to, the computational, mathematical and physical treatment of problems such as

- Continuum biomechanics
- Biofluid mechanics
- Hard Tissue, Bone/Dental
- Cardiovascular biomechanics - arterial/valvular/stents/hemodynamics/respiratory
- Cellular/subcellular biomechanics
- Mechanics of evolutionary biomechanical properties
- Elasticity imaging
- Implants/orthotics/prosthetics
- Joint biomechanics- ankle/knee/hip/hand/shoulder/other
- Soft Tissue- skin/ligaments-tendons/cartilage/other
- Tissue Engineering
- Scaffold Design and Characterization
- Tissue regeneration and remodelling
- Cell attachment, proliferation and differentiation
- Materiomics

Prospective authors are encouraged to submit papers through the site <http://www.wccm-eccm-ecfd2014.org/>, indicating session number/name. For any further request, please contact the congress Secretariat wccm-eccm-ecfd2014@cimne.upc.edu