

Preface

Mechanics of Biological Systems and Materials—The 1st International Symposium on the Mechanics of Biological Systems and Materials—represents one of eight volumes of technical papers presented at the Society for Experimental Mechanics Annual Conference & Exposition on Experimental and Applied Mechanics, held at Uncasville, Connecticut, June 13-16, 2011. The full set of proceedings also includes volumes on Dynamic Behavior of Materials, Mechanics of Time-Dependent Materials and Processes in Conventional and Multifunctional Materials, MEMS and Nanotechnology; Optical Measurements, Modeling and, Metrology; Experimental and Applied Mechanics, Thermomechanics and Infra-Red Imaging, and Engineering Applications of Residual Stress.

Each collection presents early findings from experimental and computational investigations on an important area within Experimental Mechanics. The 1st International Symposium on the Mechanics of Biological Systems and Materials was organized by: Bart Prorok, Auburn University; Francois Barthelat, McGill University; Chad Korach, State University of New York (SUNY) at Stony Brook; K. Jane Grande-Allen, Rice University; Elizabeth Lipke, Auburn University.

This symposium was organized to providing a forum to foster the exchange of ideas and information among scientists and engineers involved in the research and analysis of how mechanical loads interact with the structure, properties and function of living organisms and their tissues. The scope includes experimental, imaging, numerical and mathematical techniques and tools spanning various length and time scales. Establishing this symposium at the Annual Meeting of the Society for Experimental Mechanics provides a venue where state-of-the-art experimental methods can be leveraged in the study of biomechanics. A major goal of the symposium is for participants to collaborate in the asking of fundamental questions and the development of new techniques to address bio-inspired problems in society, human health, and the natural world.

The current volume on The 1st International Symposium on the Mechanics of Biological Systems and Materials includes studies on:

- Simulation and Modeling in Biomechanics
- Mechanics of Tissue Damage
- Cell Mechanics
- Mechanics of Cardiovascular Tissues

Advanced Imaging Methods Applied to Biomechanics
Mechanics of Hydro Gels and Soft Materials
Mechanics of Hard Tissues
Mechanics of Biocomposites
Nanomechanics in Nature
Indentation Methods for Biological and Soft Materials

The Biological Systems and Materials TD would like to thank the presenters, authors and session chairs for their participation.

The opinions expressed herein are those of the individual authors and not necessarily those of the Society for Experimental Mechanics, Inc.

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