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Biomedical Simulation

6th International Symposium, ISBMS 2014
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Preface

This book contains the written contributions to the 6th International Symposium on Biomedical Simulation (ISBMS), which was held in Strasbourg, France, during October 16–17, 2014. The 27 articles cover the key scientific areas of this constantly evolving field: soft tissue and fluid modeling, physics-based registration, surgical planning, validation, augmented reality, training systems, and strategies for real-time computation.

Biomedical modeling and simulation are at the center-stage of worldwide efforts to understand and develop computational models of the human body, or at least its principal organs. Large-scale initiatives such as the Physiome Project, Virtual Physiological Human and Blue Brain Project aim to develop advanced computational models that can facilitate the understanding of the behavior of cells, organs, and systems, with the ultimate goal of delivering personalized medicine. At the same time, progress in modeling, numerical techniques, and haptics has enabled more complex and interactive simulations leading to more efficient and safer training of medical personnel. Recently, we are beginning to see the role that real-time computational models can play in the context of computer-assisted interventions, thus bridging the gap between the virtual and real worlds. It is in this context that ISBMS seeks to act as an international forum for researchers where they can share their latest work, discuss future trends, and forge new collaborations.

We received 45 submissions from 11 countries. Each was evaluated by at least three members of the Program Committee. Based on these reviews, 16 manuscripts were selected for long oral presentations and 11 for short talks. The meeting was single track and, in addition to contributed papers, included two keynote presentations, a discussion panel, and live demonstrations of recent research results. The geographical breakdown of the different institutions presenting their research was: Australia, Czech Republic, France, Germany, New Zealand, Romania, South Korea, Spain, Switzerland, UK, and USA. The quality and breadth of the contributions indicates that the symposium continues to be an important forum for our rapidly growing field, bringing together several related disciplines.

We are very grateful to the Program Committee members for volunteering their time to review and discuss the submitted articles and doing so in a timely and professional manner. We are also thankful to the Steering Committee for their encouragement and support in continuing the tradition of a high-quality, focused meeting. We extend our thanks to IHU-Strasbourg, IRCAD, and Inria for providing support in the organization of the meeting. Special thanks go to the local Organizing Committee for their hard work in making the 2014 edition of ISBMS a successful event. Last but not least, we would like to thank all

authors for presenting their work at the symposium. It was a pleasure hosting ISBMS 2014 and we hope that all participants enjoyed the intense and stimulating discussions, as well as the opportunity to establish or renew fruitful interactions.

October 2014

Fernando Bello
Stéphane Cotin

Organization

The 2014 edition of ISBMS was organized by the SHACRA team from Inria, the SiMMS group from Imperial College London, and IHU-Strasbourg. It was hosted at IRCAD in Strasbourg, a center of excellence in surgical training.

ISBMS 2014 would not have been possible without the dedication and hard work of the Organizing Committee: Hadrien Courtecuisse (CNRS), Alejandro Granados (ICL), Rosalie Plantefève (Inria), and Audrey Ziliox (IHU).

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