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**Biomedical Applications in
Molecular, Structural, and
Functional Imaging**

Robert C. Molthen

John B. Weaver

Editors

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Introduction

Southern California had perfect weather, not a cloud in site, and a record high temperature in store. The setting and atmosphere at and around the Town and Country Resort & Convention Center was unique and engaging. Outdoors, well-served symposium lunches, stimulating conversations, and an impressive group of papers combined to make the conference an undoubted success. Dr. Roderic Pettigrew, Director of National Institute of Biomedical Imaging and Bioengineering, resounded the importance of biomedical applications in health care and funded research throughout his Symposium Plenary; it was standing room only at the Biomedical Applications Conference Keynote where professor Peter Hunter presented a fascinating review of the Physiome Project and state-of-the-art work on image analysis and computational modeling of physiology in the heart. The Best Student Paper Award for the Biomedical Applications conference went to Tobias Knopp who gave an expert presentation on magnetic particle imaging in the Nanoparticle and Microenvironment Imaging session. The Honorable Mention Poster Awards went to Katelyn Russell for her work entitled "Dynamic ct head phantom for perfusion and angiographic studies" and Michael Delles for "Influence of imaging quality on magnetic resonance-based pressure gradient measurements." The Cum Laude Poster Award was presented to Kant Matsuda for his work entitled "Optical coherence tomography implied in implant bone interface investigation: numerical simulation and tensional stamps as complementary non invasive methods."

Considerable thanks goes to Merryn Tawhai, Eric Hoffman, Ching-Long Lin, and Kim Prisk, who all contributed to provide an informative and insightful workshop on image-based modeling and quantification of the lung and other organ systems. Dr. Tawhai graciously agreed to host the workshop and turned the opportunity into a magnificent interactive didactic tutorial.

Again this year, there were many excellent scientific presentations on various organ systems including brain, heart, lung, breast, bone, and vasculature. In addition, numerous imaging modalities were represented such that most clinical and preclinical techniques were well represented. Historically, one of the strengths of the Biomedical Applications conference is the presentation of direct applications of imaging to specific biomedical problems. The cogency of this is reflected in the following Proceedings.

A special thanks goes to the SPIE staff and the members of the Program Committee, without their efforts the conference and Proceedings would not exist.

We deeply appreciate your interest and support of this conference and look forward to your future involvement and continued outstanding presentations in the years to come.

Robert C. Molthen
John B. Weaver