

Medical Imaging 2013

Image-Guided Procedures, Robotic Interventions, and Modeling

David R. Holmes III

Ziv R. Yaniv

Editors

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Introduction

We are pleased to introduce the 2013 edition of the SPIE Image-Guided Procedures, Robotic Interventions, and Modeling conference proceedings. As usual, the call for papers attracted outstanding submissions from all over the world. The quality of the research papers was excellent and the response from the community was positive. The conference continues to be a premier venue for our field, small enough to be highly collegial yet still showcasing the latest technical advances. The conference is an ideal setting for students to gain an understanding of the research community and interact with both peers and mentors.

Presented work was very translational with a significant focus on moving technology into the procedure room. Sessions focused on clinical/anatomical sites as well as technology development. Towards this end, Dr. Nassir Navab gave an outstanding keynote lecture emphasizing technology translation into the procedure room. Dr. Navab is a luminary in the field of image guidance as demonstrated by his extensive CV, active mentorship responsibilities in the community, leadership in several conferences, and success in commercialization of technology. Dr. Navab discussed the practical consideration for integrating technology into the surgical workflow. Moreover, he highlighted two technologies, Freehand SPECT and the Camera Augmented Mobile C-arm (CAMC), which are changing the way that surgeons work.

This year we participated in two joint sessions – the first with the *Advanced PACS-based Imaging Informatics and Therapeutic Applications* conference and the second with the *Ultrasonic Imaging, Tomography, and Therapy* conference. In the PACS joint session, the keynote speaker, Dr. Heinz Lemke, reinforced the notion that technology needs to be integrated at all levels of the interventional process. At the infrastructure level, it is necessary to design robust networks and communication interfaces which move data around the procedure room. At the procedure level, data must be processed and presented in a manner which is both useful and intuitive to the interventionist. In the Ultrasound session, presenters demonstrated the direct application of ultrasound to interventional procedures. These sessions continue to demonstrate the multi-disciplinary/multi-application environment that we work in.

This year, we welcomed three new members to the conference committee – Lena Maier-Hein of Deutsches Krebsforschungszentrum (Germany), Kensaku Mori of Nagoya University (Japan), and Maryam Rettmann of Mayo Clinic (United States). Each of these scientists brings a unique perspective to the conference based on their own research experiences. A cursory review of the committee membership clearly demonstrates that our community is diverse – geographically, topically, and otherwise. Terry Peters of Robarts Research Institute (Canada) has

decided to “retire” from the committee. Dr. Peters has decades of contributions to our conference – both as an author and committee member. We thank Dr. Peters for his contributions to the committee and look forward to his continued participation in the conference as a mentor and author.

It would be impossible to run this conference without the outstanding support of the SPIE staff members, including the office staff, management, and editors. They make our job easier, ensure that deadlines are met, and allow us to focus on the technical content. Particular thanks goes to the SPIE staff for always being on top of every detail.

Finally, we would like to thank all the attendees who come to give talks, present posters, and actively participate in the meeting. We look forward to seeing you next year in San Diego and for many years to come!

David R. Holmes III
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