

Medical Imaging 2014

***Image-Guided Procedures,
Robotic Interventions, and Modeling***

**Ziv R. Yaniv
David R. Holmes III**
Editors

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Introduction

Welcome to the 2014 edition of the Image-Guided Procedures, Robotic Interventions, and Modeling conference proceedings. This year we received approximately 130 abstract submissions and accepted 100 as full manuscripts which were presented at the conference during the oral and poster sessions.

The keynote presentation by Prof. Robert Galloway from Vanderbilt University drew a large crowd, with 185 attendees. The title of his talk was "Engineering therapeutic processes: from research to commodity." The primary message was that we should strive to take our research from the laboratory and move it into common practice. While this is not a trivial task, it is the only way to ensure that our research has a positive impact on healthcare. In tune with this message, we also hosted a workshop on Commercialization of Medical Research. The workshop included several presentations describing various pathways towards commercialization; including, licensing, establishing a startup company, and collaborating with big industry. We also continued the tradition of having a joint session with the Ultrasonic Imaging and Tomography conference. This time the session included five presentations, and while it was the next-to-last session of the conference, it was very well attended.

This was also the inaugural year for the "Young Scientist Award," a best paper competition which is open both to students and postdoctoral fellows. The prize is awarded to first authors of high quality papers within the Image-Guided Procedures conference. We would like to thank Siemens for sponsoring this award and Frank Sauer for coordinating it. The winner of the young scientist award for 2014 was S. Reaungamornrat from Johns Hopkins University for her paper, "Deformable registration for image-guided spine surgery: preserving rigid body vertebral morphology in free-form transformations." The runner up for the young scientist award was X. Yang from Emory University for his paper, "A new CT prostate segmentation for ultrasound-guided CT-based HDR brachytherapy."

We bid farewell to two of our committee's long standing members: Steve Hartmann (Medtronic Inc.) and Jay West (Elekta Inc). Both have served on the committee for 10 years, during which they greatly contributed to the running of the conference and to growing our community. We also welcome three new committee members: Cristian Linte (Rochester Institute of Technology, USA), Parvin Mousavi (Queens University, Canada) and Andrew Wiles (Northern Digital Inc.). We are grateful to all of our committee members for their help in reviewing abstracts, evaluating student papers, and judging posters. Their commitment enables us to maintain the high scientific standards of our conference.

It would be impossible to run this conference without the outstanding support of the SPIE staff members. Thanks to them we are able to focus on the scientific

aspects of the conference. Working with the SPIE staff onsite always gives us the impression that we are the only conference they have to deal with, and not one out of nine separate conferences all happening at the same time.

Finally, we would like to thank all the attendees who gave talks, presented posters, and actively participated in the meeting. The success of the conference is in no small part due to you. Next year, the conference will take place in Orlando, Florida. We look forward to seeing you there for another successful conference.

Ziv Yaniv
David R. Holmes III

Awards



Robert F. Wagner Award

Robert F. Wagner was an active scientist in the SPIE Medical Imaging meeting, starting with the first meeting in 1972 and continuing throughout his career. He ensured that the BRH, and subsequently the CDRH, was a sponsor for the early and subsequent Medical Imaging meetings, helping to launch and ensure the historical success of the meeting. The Robert F. Wagner All-Conference Best Student Paper Award (established 2014) is acknowledgment of his many important contributions to the Medical Imaging meeting and his many important advances to the field of medical imaging.

This award is cosponsored by:



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2014 Recipients:

First Place: **MRI signal and texture features for the prediction of MCI to Alzheimer's disease progression** (9035-78)

A. Martínez-Torteya, J. A. Rodríguez-Rojas, J. M. Celaya-Padilla, J. I. Galván-Tejada, V. M. Treviño-Alvarado, Sr., J. G. Tamez-Peña, Tecnológico de Monterrey (Mexico)

Runner Up: **Distinguishing benign confounding treatment changes from residual prostate cancer on MRI following laser ablation** (9036-49)

G. Litjens, H. Huisman, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); R. Elliott, Case Western Reserve Univ. (United States); N. Shih, M. Feldman, Univ. of Pennsylvania (United States); S. Viswanath, Case Western Reserve Univ. (United States); J. Fütterer, J. Bomers, Radboud Univ. Nijmegen Medical Ctr. (Netherlands); A. Madabhushi, Case Western Reserve Univ. (United States)

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Deformable registration for image-guided spine surgery: preserving rigid body vertebral morphology in free-form transformations (9036-27)

S. Reaungamornrat, A. S. Wang, A. Uneri, Y. Otake, Z. Zhao, A. J. Khanna, J. H. Siewerdsen, Johns Hopkins Univ. (United States)

Runner Up Young Scientist Award

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