



Image-Guided Procedures, Robotic Interventions, and Modeling (MI104)

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This conference is primarily concerned with applications of medical imaging data in the engineering of therapeutic systems. Original papers are requested in the following topic areas:

- Image-guided procedures
- Minimally invasive surgery
- Computer-assisted therapy and therapy planning
- Robotic interventions and surgical tools
- Localization technologies and navigation systems
- Tracking and calibration
- Intraoperative imaging
- Novel image-to-patient registration for surgery and intervention
- Mathematical modeling to guide and understand therapy
- Modeling of intraprocedural changes
- Modeling and analysis of procedures and procedure workflows
- Techniques in population-specific and patient-specific model generation
- Image-based models for characterization of tissue and disease properties
- Medical image-based simulation and training
- Validation/evaluation
- 3D visualization
- Novel interfaces for therapy and visualization of data
- Augmented, virtual, and enhanced reality
- Clinical applications and technology integration
- High performance computing for real-time modeling and/or large dataset visualization
- Safety and standards for image-guided and robotic procedures
- Other related areas.

Submissions that cross over between this conference and others at SPIE Medical Imaging, and which would be appropriate for combined sessions, are also welcomed.

TOPIC AREAS: FOR THIS CONFERENCE ONLY

During the submission process, you will be asked to choose no more than three topics from the following list to assist in the review process.

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| • Abdominal procedures | • Medical robotics |
| • Calibration | • Modeling |
| • Cardiac procedures | • Monitoring and feedback |
| • Pelvic procedures | • Multimodality display |
| • Data science | • Neurosurgical procedures |
| • Deep learning | • Registration |
| • Diagnosis | • Segmentation |
| • Disease characterization | • Stereoscopic display |
| • Endoscopic procedures | • Surgical simulation |
| • Enhanced reality | • Therapy planning |
| • Human factors | • Treatment planning |
| • Image-guided therapy | • Ultrasound guidance |
| • Data integration for the clinic/OR | • Validation/evaluation |
| • Intraoperative imaging | • Visualization |
| • Localization and tracking technologies | |

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By submitting an abstract, I agree to the following conditions:

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- Attend the meeting
- Make the presentation as scheduled in the program
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- Submit a manuscript (6 pages minimum; 20 pages maximum) for any accepted oral or poster presentation will be submitted for publication in the conference Proceedings in the SPIE Digital Library.
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- Once you choose a conference, click "Submit an abstract" from the conference call for papers.
- Please submit a **250-word text abstract** for technical review purposes that is suitable for publication. SPIE is authorized to circulate your abstract to conference committee members for review and selection purposes.
- Please also submit a **100-word text summary** suitable for early release. If accepted, this summary text will be published prior to the meeting in the online or printed programs promoting the conference.
- Identify the topics appropriate to the specific conference. During the submission process you will be asked to choose no more than three topics from a predefined list and/or add a topic not included on the list. (See individual conference Call for Papers for topic categories.)
- Prepare your **2-4 page supplemental MS Word or PostScript file**. Supplemental file instructions can be found online. For full consideration this file must include the paper title, authors, 250-word abstract text, and the following supplemental information:
 - Description of purpose
 - Method(s)
 - Results
 - New or breakthrough work to be presented
 - Conclusions
 - Whether the work is being, or has been, submitted for publication or presentation elsewhere, and, if so, indicate how the submissions differ.
 - This file may contain supporting images/tables/figures
 - Failure to follow these guidelines may disqualify your submission.
- Only original material should be submitted.
- Abstracts should contain enough detail to clearly convey the approach and the results of the research.
- Commercial papers, papers with no new research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons will not be accepted for presentation in this conference.
- Please do not submit the same, or similar, abstracts to multiple conferences.

REVIEW, NOTIFICATION, AND PROGRAM PLACEMENT INFORMATION

- To ensure a high-quality conference, all submissions will be assessed by the Conference Chair/Editor for technical merit and suitability of content.
- Conference Chair/Editors reserve the right to reject for presentation any paper that does not meet content or presentation expectations.
- The contact author will receive notification of acceptance and presentation details by e-mail no later than **9 October 2017**.
- Final placement in an oral or poster session is subject to the Chairs' discretion.

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Abstracts Due: **7 AUGUST 2017**

Manuscript Due Date: **15 JANUARY 2018**