

SPOTLIGHT ISSUE: CALL FOR PAPERS

Spotlight Issue on Interventional Ultrasound

Submission Deadline: December 31, 2022

Breakthroughs in deep learning (DL), artificial intelligence (AI), point-of-care ultrasound (POCUS), and medical robotics have set off an exciting era in interventional ultrasound. Advances in DL and AI have enabled better and faster-than-ever extraction of information from ultrasound data. POCUS is becoming increasingly popular due to its cost-effectiveness, improved image quality, and ease of use. In addition, manufacturers have moved away from analog beamforming to digital beamforming, which provides researchers with access to raw data which is more information-rich than beamformed B-mode images. Concurrently, medical robotics is becoming ever more established in its traditional application and is further finding new, emerging clinical applications.

IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control is organizing a Spotlight Issue entitled “Interventional Ultrasound” to provide a timely platform for rapid dissemination of new findings in this area. The Spotlight Issue will serve to create a library of peer-reviewed literature describing the latest methodological and translational research advances in interventional ultrasound. Contributions in multiple submission categories (Original Research; Review Papers; Perspectives; Methods and Concepts) are being sought in a wide range of methodological and translational research topics related to the following themes of interventional ultrasound:

1) Computer Vision and Image Processing Methods for Interventional Ultrasound

- Virtual reality, augmented reality, and navigation techniques
- Detection, segmentation, and image reconstruction algorithms
- Registration and calibration strategies

2) Engineering Tools and Hardware

- New, specialized ultrasound transducers for interventional imaging
- Robotic ultrasound
- Simulation systems for training and education

3) New Applications and Translational Studies

- Ultrasound-guided surgery and radiotherapy
- Needle tracking and visualization
- Laparoscopic ultrasound

The main objective of this Spotlight Issue is to establish a central resource point for researchers to disseminate and learn about the latest technological advances in interventional ultrasound. All contributions should be submitted online via <https://mc.manuscriptcentral.com/tuffc-ieee>, the Manuscript Central system of *IEEE Transactions on UFFC*. When submitting, authors should select Manuscript Type: “Spotlight”. In the “Cover Letter” section, authors should state that the submission is intended for the Spotlight Issue on Interventional Ultrasound, and they should highlight how their manuscript is typically aligned with the scope of the Spotlight Issue stated above. Guidelines for manuscript preparation and the journal’s peer review process can be found at <https://ieee-uffc.org/publication/t-uffc/guidelines-authors>.

All manuscripts will be subjected to fast-track peer review. Editorial decisions will be made within 30 days of submission. The submission deadline is December 31, 2022. Accepted manuscripts will be published in the *IEEE Transactions on UFFC* in the second quarter of 2023. The guest editors for this special issue are:

Hassan Rivaz
Concordia University, Canada
Email: hrivaz@ece.concordia.ca

Ilker Hacihaliloglu
U. of British Columbia, Canada
Email: ilker.hacihaliloglu@ubc.ca

Ingerid Reinertsen
SINTEF, Norway
Email: ingerid.reinertsen@sintef.no