



IEEE CBMS 2017

30th IEEE International Symposium on Computer-Based Medical Systems

Special Track on Biomedical Imaging and Signal Processing tools for Cardiac Arrhythmias: Diagnosis, Treatment Planning and Therapy Delivery

Abstract: Cardiac arrhythmias belong to a class of highly prevalent heart conditions with limited existing treatment options. During the past three decades, there has been extensive research and development of biomedical signal and image processing techniques in support of the detection, diagnosis, management, treatment planning, and therapy delivery for cardiac arrhythmic conditions. In response to the quest for reduced size of the incision and limited exposure of the heart, various biomedical signal acquisition and processing methods have been employed to detect, characterize and localize the presence of arrhythmia in a minimally invasive fashion, using intracardiac catheters, as well as extracorporeal signal acquisition for electric field abnormality detection and assessment. Alongside signal acquisition, both diagnostic and intra-procedural imaging techniques have been used to image the cardiac anatomy with high resolution and high fidelity, enabling the reconstruction of the heart chambers and the superposition of the acquired functional signals for better localization and visualization of the arrhythmic foci. Such data has become a critical component of the planning and guidance of cardiac ablative therapy aimed at electrically isolating the arrhythmic foci and preventing arrhythmia propagation and recurrence.

Envisioned Session Scope: This session will provide a focused venue that attracts novel scientific contributions in the area of biomedical signal and imaging for cardiac arrhythmia applications along with their integration into diagnostic, treatment planning and image-guided therapy delivery platforms. Session speakers will be encouraged to place their work in the clinical context by describing necessary developments, research questions and any potential obstacles that must be overcome to achieve successful clinical translation of the disseminated technologies.

Targeted Audience: and participants: This session will attract researchers in biomedical engineering, computer science, electrical engineering, imaging science and clinical medicine engaged in computer-aided diagnosis and treatment of cardiac arrhythmias. The scientific content will entail multi-scale and multi-modality signal and image acquisition and integration for diagnosis, visualization, planning and guidance tools in support of patient-specific pre-clinical translation and evaluation of arrhythmia treatment.

Keywords: biomedical signal acquisition and signal processing, computer-aided clinical decision support system, cardiac arrhythmia, medical imaging and image processing, image computing, image-guided navigation, visualization, patient-specific arrhythmia diagnosis treatment planning and delivery, RF, microwave and ultrasound ablation therapy, medical technology - simulation, learning, training.

Important Dates

Paper submission deadline: January 30, 2017

Notification of acceptance: March 20, 2017

Final camera-ready papers: April 13, 2017

Early registration deadline: April 23, 2017

CBMS symposium days June 22-24, 2017

Special Track Organizers

Behnaz Ghoraani, PhD & Senior Member, IEEE EMBS, Florida Atlantic University, Boca Raton FL USA

Cristian A. Linte, PhD & Member, IEEE EMBS, Rochester Institute of Technology, Rochester NY USA

Further Information

For additional information, please visit the conference website <http://www.cbms2017.org/> or contact the Special Track organizers directly: Behnaz Ghoraani (bghoraani@fau.edu) and Cristian A. Linte (clinte@mail.rit.edu).