IEM SEMINAR SERIES

TUESDAY
APRIL 5th, 2016

A Translational Approach to Probe to the Pro/Anti-Arrhythmic Potential of the Heart

Institute for Engineering in Medicine

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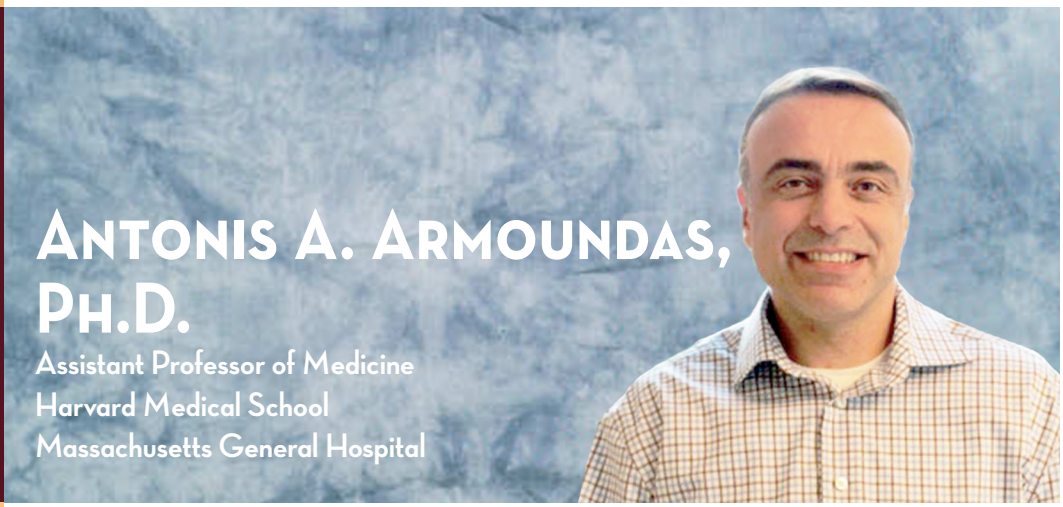

ANTONIS A. ARMOUNDAS, PH.D.
Assistant Professor of Medicine
Harvard Medical School
Massachusetts General Hospital

FREE event, no registration required.

Pizza and drinks will be provided at 12:00pm.

12:15PM - 1:15PM
Nils Hasselmo Hall
Room 2-101

For additional information on Dr. Armoundas' presentation, please contact:
scot0353@umn.edu

The Institute for Engineering in Medicine (IEM) is pleased to announce the IEM Seminar by Dr. Antonis A. Armoundas, "A Translational Approach to Probe to the Pro/Anti-Arrhythmic Potential of the Heart."

The implantable cardioverter defibrillator (ICD) is the most effective means of detecting and treating arrhythmias, such as ventricular tachycardia (VT) or ventricular fibrillation (VF). However, the main limitation of the current ICD technology is that it aims to terminate an arrhythmia only after the arrhythmia has started. Given that failure, delay or false decision in detecting VT/VF are life-threatening concerns, the next generation of ICD technology should be able to prevent arrhythmias from starting, rather than terminating them after their initiation. Repolarization alternans (RA), a pattern of variation in the shape of electrocardiographic waveform that appears on an every other beat basis, has been associated with increased vulnerability to VT/VF and sudden cardiac death (SCD). We have developed a prototype system that can both estimate RA in real-time from intracardiac electrograms and deliver electrical pulses that are timely coupled to cardiac electrical activity. We investigate the applicability of RA-triggered delivery of clinically appropriate electrical therapy to suppress/terminate RA and prevent the development of VT/VF in an animal model of acute myocardial infarction.

Antonis A. Armoundas was born in Mytilini, Greece. He graduated from National Technical University of Athens, Department of Electrical Engineering, in 1991, and received the M.S. degree from Boston University, Department of Biomedical Engineering, in 1994. He received his PhD degree from the Massachusetts Institute of Technology (MIT), Department of Nuclear Engineering, in 1999. Currently, he is with the Massachusetts General Hospital and an Assistant Professor at Harvard Medical School, while he maintains an appointment at MIT. His research interests include biomedical signal processing, forward and inverse problem solutions and cellular electrophysiology methods (experimental and modeling).

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