

Seminar Talk

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Tuesday, December 06, 2016
3:00 p.m. KH 224

Title: Ablation of Cardiac Tissue with Nanosecond Pulsed Electric Fields

Abstract:

Ablation of cardiac tissue is an essential tool for the treatment of arrhythmias, particularly of atrial fibrillation, atrial flutter, and ventricular tachycardia. Current ablation technologies suffer from substantial recurrence rates, thermal side effects, and long procedure times. Ablation with nanosecond pulsed electric fields (nsPEFs) can potentially overcome these limitations. We present data from a preclinical study in pigs that show that nsPEFs ablation can quickly and reliably create lesions in a wide range of tissue thicknesses.

Bio:

Dr. Zemlin received his B.S and M.S. degrees in Physics from the Technical University Berlin in 1994 and 1998 and his Ph.D. In Theoretical Physics from the Humboldt University in Berlin. He completed his postdoctoral research in Cardiac Electrophysiology at SUNY Upstate Medical University in Syracuse, NY and became Research Assistant Professor there in 2006 before moving to ODU in 2011.

Dr. Zemlin's research focuses on the mechanisms of arrhythmias, and on the treatment using pulsed electric fields. He uses voltage-sensitive fluorescent probes to experimentally study cardiac activity large-scale parallel computer modeling to understand how arrhythmias are initiated and maintained. Other research interest include imaging of tissue structure using optical clearing and confocal microscopy, and the general theory of excitable media.