

Good Afternoon,
You are invited to attend our weekly ECE Graduate Seminar.

Old Dominion University
College of Engineering and Technology
Department of Electrical and Computer Engineering

All lectures to be held at 3:00pm on Fridays online at

https://vs.prod.odu.edu/kvs/interface_webex/?cid=202020_ECE731ECE831VS_94044

For more information, contact Dr. Chung Hao Chen at (757) 683-3475 or email cxchen@odu.edu.

Friday, March 19, 2021 Seminar Topic:

APPLICATION OF CONTROL SYSTEMS TO TISSUE ABLATION by Ross Petrella, PHD Candidate in the Biomedical Engineering Program at Old Dominion University

Abstract:

Electroporation is a method for tumor ablation. It is widely considered to be non-thermal due to the mechanism of cell death. However, in practice Joule heating is present and can alter treatment outcomes or contribute to procedure complications. This includes electrical arcing, tissue charring, or extended treatment times. This talk will discuss how these complications could be resolved using algorithmically controlled electroporation (ACE). In this technique, pulse parameters are continuously altered by feedback from the treatment area and the treatment is complete when the user defined output goal has been achieved. To demonstrate this technique, experimental results will be presented showing its application in vitro using a 3D cell culture model.



Bio:

Ross Petrella is an alumni of Old Dominion University's Biomedical Engineering program. Supervised by Shu Xiao at the Frank Reidy Center for Bioelectrics, he completed his dissertation work in area of dielectric rod antennas, pulse transformers, and picosecond pulsed electric field stimulation. Since leaving ODU, Ross has joined the University of North Carolina and North Carolina State University Joint Department of Biomedical Engineering. He teaches biomedical engineering design and has ongoing research projects in antenna design for biomedical applications, pulse power supplies, and engineering education.