



## Frank Reidy Research Center for Bioelectrics Seminar Series

# Strategy to improve tumor response to nsPEF treatment

**Speaker: Olga Pakhomova, Ph.D.**  
Frank Reidy Research Center for  
Bioelectrics



**When: 9:00 AM, Tuesday, March 1, 2016**

**Where: 1st floor conference room, IRP II**

### **Abstract:**

Enhancement of tumor sensitivity to electric pulses (EP) is gaining importance in translational research on electroporation. Recently, it has been shown that cell cultures exposed to EP develop a delayed and profound increase in the sensitivity to subsequent EP treatments. The phenomenon was named delayed electrosensitization (DES). DES causes two to three-fold increase in EP toxicity and assists cytotoxic drug transfer across the membrane. Based on cell culture data we proposed that DES may assist in EP-mediated technologies for tissue ablation. Engaging DES may increase the affected area without changing the exposure settings, or may allow using lower field or fewer pulses to attain the desired effect. In this talk, we will discuss the current status and future prospects of DES approach.

### **Biosketch:**

Olga Pakhomova earned M.S. in Microbiology from the Moscow State University and Ph.D. in Radiation Biology from Medical Radiology Research Center in Obninsk, Russia. She received Postdoctoral training in Biochemistry at Structural Biology Center of University of Texas Health Science Center at San Antonio (UTHSCSA). In March 2009, she joined Frank Reidy Research Center for Bioelectrics at Old Dominion University as a Research Associate Professor. Her current research is centered on understanding and characterization of cell response to treatment with electric pulses, with particular emphasis on nanosecond-duration pulses and biophysical properties of membrane nanopores.