



## Frank Reidy Research Center for Bioelectrics Seminar Series

# Nucleic Acid Sensing and its Implications in Antitumor Gene Therapies

**Speaker: Nina Semenova, Ph.D.**

Postdoctoral Fellow  
Frank Reidy Research Center for Bioelectrics  
Old Dominion University



**When: 9:00 AM, Tuesday, November 29, 2016**

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

### **Abstract:**

Over the past two decades, emerging evidence of the ability of cytosolic DNA to stimulate innate immunity has accumulated. We are beginning to understand the molecular basis of DNA sensing by cytosolic and membrane-associated receptors (pattern recognition receptors, PRRs) and their role in induction of type I interferon, which is a potent mediator of autoimmunity. Increasing numbers of reports also reveal the crucial role of innate immunity in tumor surveillance. Recently, several groups have described antitumor effects in different tumors after electrophoretic delivery of oligonucleotides or plasmids devoid of therapeutic genes. Such delivery upregulates several intracellular DNA sensors, which makes plausible their involvement in antitumor effects.

### **Biosketch:**

Nina Semenova received her M.S. in Biophysics from Taras Shevchenko Kiev University in 1997. After working for several years as a Chief Examiner in the Ukrainian Patent Office, she pursued a career in science with a Ph.D. in Physiology from University of Texas Health Science Center at San Antonio. Currently she is a postdoctoral Fellow in Frank Reidy Research Center for Bioelectrics. Her research interests include protein structure and protein-nucleic acid interactions as well as regulation of different cellular processes by calcium ions.