Dr. Vladimir Parpura
University of Alabama at Birmingham

**Neurobiology at the interface of nanotechnology: Vignettes from the laboratory**

Parpura will discuss the neurobiology at the interface of neuroengineering and nanotechnology by presenting relevant vignettes from the laboratory. He will use a top down approach. First, you will see that neurons can be grown on carbon nanotubes which can be used to control the outgrowth and branching pattern of neuronal processes. Then, he will present a new method for culturing astrocytes in order to reduce their intercellular communication and study single or small group of these glial cells. Both neurons and astrocytes use exocytosis for intercellular communication. Towards the end of the talk you will see his efforts in using nanotechnology to study exocytotic proteins at single molecule level, followed by the application of these proteins in the development of a Botulinum toxin sensor. The take-home message is that nanotechnology and neuroengineering could play the active role in neuroscience research.

**BIOGRAPHICAL:**

Vladimir Parpura, MD, PhD holds both a medical degree, awarded from the University of Zagreb in Croatia in 1989, and a doctorate, received in Neuroscience and Zoology from Iowa State University in 1993. He has held faculty appointments at the Department of Zoology and Genetics, Iowa State University and the Department of Cell Biology and Neuroscience, University of California Riverside. He is presently an Associate Professor in the Department of Neurobiology, University of Alabama Birmingham.