LSU Health Sciences Center

Neuroscience Center of Excellence

FACULTY CANDIDATE

Jason Luther, Ph.D.

Brandeis University, Biology Department
Waltham, MA

Presenting

"Neurotrophin Regulation of Functional Neuronal Properties Setting the Tone for the Sympathetic Nervous System"

The function of neural circuits is dependent on the functional properties of the neurons in that circuit. These functional properties include morphology (connectivity), synaptic strength and intrinsic membrane properties. Changes in these properties are believed to underlie learning, memory and recovery from damage or disease in adult nervous systems. An important question in neuroscience is what mechanisms control functional neuronal properties, and what are the mechanisms that allow them to change adaptively. A family of growth factors called neurotrophins may provide a signaling system that controls functional neuronal properties. I will discuss the role that target-derived neurotrophin signaling plays in regulating the intrinsic electrical properties of sympathetic neurons. This regulation has profound implications for the function of the sympathetic neurons in the context of the sympathetic circuit, and is likely to be an important factor in diseases such as high blood pressure and heart disease. On a more basic level these results suggest a deep relationship between the intrinsic electrical properties of neurons and the way they respond to synaptic input. These results may also be applicable to other neural systems such as the basal forebrain and cortical structures.

Friday February 22, 2008 4:00pm,
8th Floor Neuroscience Center Conference Room,
LSU Lion's Building, 2020 Gravier Street
New Orleans