



# Neuroscience Center of Excellence

**FACULTY CANDIDATE**

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**Presenting**

***“ $\alpha$ -Synuclein is Critical for the Maintenance of Brain Lipid Metabolism”***

In the first part of the presentation, the role for  $\alpha$ -Synuclein (Snca) in brain lipid metabolism will be discussed. Snca is an abundant CNS protein that is associated with neurodegenerative disorders, including Parkinson's disease, however its physiological function is poorly understood. Using *Snca*<sup>-/-</sup> mice, we demonstrated that Snca has a critical role for maintenance of brain arachidonic acid recycling in phospholipids through modulation of acyl-CoA synthetase activity. As the result, Snca affects other fatty acid metabolism. Through regulation of fatty acid metabolism, Snca maintains brain mitochondrial functions and modulates inflammation reactions. In the second part of the presentation, the newly discovered pathway for brain prostanoid metabolism will be discussed. These novel pathway accounts for the rapid increase in brain prostanoid mass via the rapid (<1 min) mobilization of a releasable pool of preformed prostanoids esterified onto brain phospholipids.

**Tuesday February 26, 2008 12:00pm,  
8<sup>th</sup> Floor Neuroscience Center Conference Room,  
LSU Lion's Building, 2020 Gravier Street  
New Orleans**