

Latest Doings Seminar

This Friday's Doings, Oct 24th, will be presented by Dr. Konrad Zinsmaier (ARLDN, Uof A). Being a relatively new addition to the ARLDN, Konrad will be giving us an overview of his research focus as a introduction to his lab and areas of interest. The title of his Doings is below followed by an abstract of the research that is on-going in his lab.

"The Drosophila Neuromuscular Junction: A model system for genetically dissecting mechanisms governing synaptic function"

We are investigating fundamental molecular mechanisms that regulate fast, synaptic neurotransmitter release by undertaking a multidisciplinary approach, exploiting the neuromuscular junction of genetically modified Drosophila as a model system. Currently, our research interests fall into three categories: (A) Regulation of Ca²⁺ triggered vesicle fusion and G protein-mediated inhibition of Ca²⁺ entry by the CSP/SGT/Hsc70 chaperone system. Understanding the action of this regulatory complex in detail will be significant for a basic understanding of synaptic plasticity and for clinical research as CSP and Hsc70 have been linked to psychiatric disorders like manic depression. (B) Regulation of neuroexocytosis by the G protein receptors Methuselah and CIRL. Studies of Methuselah, in particular, show an intriguing relationship between excitatory neurotransmission, stress resistance, and aging. As a potential target of therapeutic drugs, studies of Mth and CIRL may ultimately lead to advances in detecting, treating, or even preventing neurological, psychological, or addictive disorders caused by pathologic transmission pathways. (C) The role of mitochondria for presynaptic function and plasticity. This genetic analysis provides new and unexpected insights for a basic understanding of presynaptic Ca²⁺ homeostasis and Ca²⁺ secretion coupling with significant implications for clinical research.

Cheers - CR

Cindy Rankin, Ph.D.
Dept of Physiology
phone: (520) 621-3104
email: crankin@u.arizona.edu
Office: BioSci West 274
Mail: 101 Gittings Bldg.
University of Arizona Tucson, AZ 85721-0093