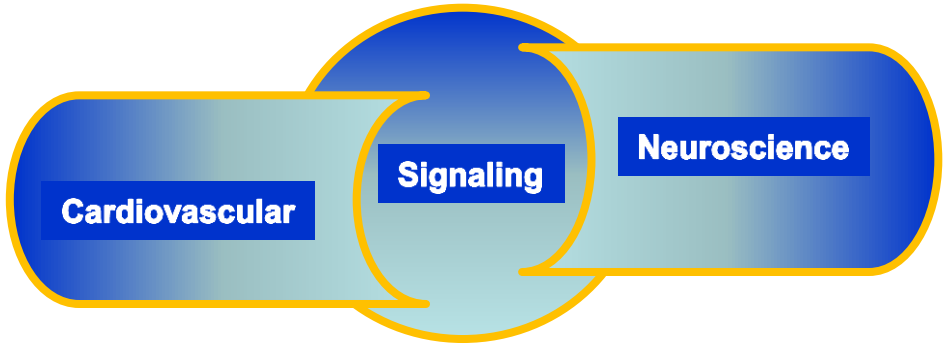

The Department of Pharmacology

Proudly Presents the Seminar Series:

Frontiers in Pharmacology

"Microtubule mechanics and mechanosignaling in the heart"

The microtubule (MT) network has long been suggested to provide a mechanical resistance to myocyte shortening that may impair contractility in heart disease. Yet due to our inability to observe MTs during the stress and strain of the cardiac cycle, the mechanical roles of cardiac MTs have remained controversial.
With advances in imaging we can now visualize MT behavior in the beating heart cell. We find that MTs remarkably deform into sinusoids under contractile load, providing a spring-like resistance to compression. Surprisingly, we find that a MT post-translational modification called "detyrosination" is critical for this behavior. Reducing detyrosination effectively removes this spring, decreasing the passive stiffness of the myocyte and allowing it to shorten and stretch with greater ease. We will discuss how this modification of the microtubule network regulates cardiac mechanics and mechanosignaling, and the implications for human health.

Benjamin L. Prosser, Ph.D
Assistant Professor,
***Department of* Physiology,**
University of Pennsylvania

Tuesday, Oct. 20, 2015
4:00 pm
GBSF Auditorium
(Rm. # 1005)

Light refreshments will be served.

Host : Ye Chen-Izu
ychenizu@ucdavis.edu