



**Center for
Sensorimotor
Neural Engineering**

PRESENTS

“Optoelectronics for Neural Recording and Stimulation”

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Recently the invention of optogenetics have allowed for high-speed control of genetically defined neural circuit elements in freely moving mammals. However, with the ability to control came the demand to monitor neural activity during optogenetic experiments. To address the need for simultaneous optical stimulation and electrophysiological recording we have recently demonstrated a low-cost, miniature device “Optetrode”. The Optetrode’s small dimensions and modest weight (~2g) have allowed us to investigate the effects of optical excitation and inhibition of several genetically distinct cell populations in the prefrontal cortex of freely moving mice during the open field test. We have also demonstrated the utility of the Optetrode in electrophysiological recording and optical stimulation of projections from basolateral amygdala to the prefrontal cortex. Recently my lab has been focusing on extending the Optetrode concept to higher-resolution electrophysiological recordings and the development of flexible optoelectronic neural recording and stimulation devices that allow for greater tissue compatibility.

Wednesday, June 6, 2012

3:30 PM – 4:30 PM

**SDSU will connect via videoconference from SDSU,
room E203e**

Space is limited, please arrive early; contact Theresa M. Garcia, tgarcia@mail.sdsu.edu for questions

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