Dear Faculty, IGERT Fellows, IGERT Associates and Students,

You are cordially invited to attend a Seminar presented by Hyle Park. Please plan to attend.

Quantitative assessment of neurons with optical coherence tomography

Hyle Park

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Date: Friday, May 18, 2012
Location: WCH 205/206
Time: 11:10am

Abstract:

The research in my group focuses on the development and application of optical imaging for the study of the structure and function of nerves. Much of this work utilizes optical coherence tomography (OCT), a non-contact optical modality that generates cross-sectional images similar in size and geometry to histological sections. Just as different stains can be used to enhance the contrast in histology, various extensions of OCT provide additional visualization modes but with the need for exogenous contrast agents and in a way that allows for in vivo real-time monitoring of two- and three-dimensional features. Current projects span multiple spatial and temporal scales, from analysis of single neurons to observation of changes in the brain, and include: 1) an optical electrode for detection of slight transient structural changes associated with action potential propagation in single axons, 2) non-destructive optical quantification of myelination during injury and regeneration of peripheral nerve bundles, and 3) real-time monitoring of optical scattering changes in the brain during the onset and progression of cerebral edema and epilepsy.

Bio:

The focus of B. Hyle Park's research in the Bioengineering department at UC Riverside is on the development and application of optical imaging to neuroscience. He earned a B.S. in Physics from

the California Institute of Technology in 1996. After a short hiatus from school, he obtained a M.S. in Physics from UC Irvine in 2000 while beginning research in optical coherence tomography at the Beckman Laser Institute. The bulk of his graduate research was completed while at the Wellman Center of Photomedicine (Harvard Medical School / Massachusetts General Hospital), where he did his post-doctoral training after obtaining his PhD in 2005. He joined the Bioengineering department at UC Riverside in 2009.

Attached is a reference paper for the talk.