

ANNOUNCING A NEW INTERDEPARTMENTAL SEMINAR!

Fall 2005

Thursdays

1:00 p.m. to 2:00 p.m.

Room 302 H.R. Bright Building

Contact: David Mayerich (david@quantumkingdom.com)

Molecular and Cellular Networks Seminars will explore the methodological issues underlying the bioimaging and modeling of molecular and cellular networks: computational analysis of electron and optical microscopy image data, 3D reconstruction, and the topological, geometrical, and behavioral modeling of networks at the nano- and micro-scale. Particular emphasis will be given to issues arising in the new systems biology: genomic regulatory networks and brain networks.

Those interested in the new “science of large-scale networks,” as pioneered by Duncan Watts and Albert-Laszlo Barabasi, will want to attend.

The seminar will normally avoid topics in biomedical imaging, such as radiology and brain mapping at the gross anatomical scale. Such work is typically published in the *IEEE Trans. Med. Imag.* and related biomedical journals. Again, the seminar focus will be at the molecular and cellular level of detail.

Preliminary list of speakers and topics (titles subject to change):

Riccardo Bettati, What the study of synthetic networks can tell use about biological networks

Brad Busse, 3D reconstruction of Serial Block Face Scanning Electron Microscope datasets

Yoonsuck Choe, Tools for motif analysis of networks

Jens Eberhard, *NeuGen*, Synthesis of realistic neurons (pending his return visit to CS)

Riccardo Gutierrez-Osuna, Neurometic modeling of the olfactory system

John Keyser, Fast selective visualization of brain networks and their lattices

Andreas Klappenecker, Sphere packing, lattices, and coding theory

Thomas Ioerger, Discovering protein structure by biological crystallography

Wonryull Koh, 3D mouse brain atlas for cellular-level navigation

Jyh-Ming Lien and Marco Morales, Modeling neuron morphology and connectivity

Dmitri Loguinov, Small world phenomena in large-scale networks

David Mayerich, Imaging and modeling Nissl-and Golgi-stained mouse brain microstructure

Bruce McCormick, Polymerization algorithms for 3D image processing

Bruce McCormick, Lattice models of brain networks

Hari Muddana, Morphogenesis modeling

Sing-Hoi Sze, Discovering genomic regulatory networks

Tiffani Williams, Tree of life