CLS /CCI Spring 2009 Seminar Series

3/25/2009

4:00pm

William "Bill" Lytton

SUNY, Downstate

Location: Math and Science Center, Room E208

"NeuroImpressionism: data-mining and simulation"

Abstract:
Computer modeling, coupled with knowledge discovery and data-mining (KDD), is ushering in a new era in biological investigation, mandated by the massive flow of data emerging from new experimental tools. Systems Biology, deriving from the demands made by the data streams of genomes and proteomes, must now be extended to neurobiology in response to the growing streams from electrome (signal flow within the neuron), connectome (neural connectivity) and neurophysiome (multiunit recording). This change in perspective can be usefully compared to the change that accompanied the shifts in painting from Academicism to Impressionism and Cubism. To illustrate the approach, I will discuss results from our simulation of neocortical connectivity and dynamics, and from our data-mining of multiunit recordings to examine neural coding in normals and in animal models of schizophrenia.

The Emory Center for Comprehensive Informatics fosters collaborative research and software development in high performance and grid computing, biomedical informatics, translational science and imaging informatics.

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The Computational and Life Sciences Strategic Initiative at Emory University explores new scientific frontiers at the interface of computation, synthetic sciences and systems biology.

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