

Journal Club

October 16, 2009

Titles and Abstracts of Talks

Andrew Miskowiec:

“Solid supported lipid bilayers: From biophysical studies to sensor design.”

The lipid bilayer is one of the most eloquent and important self-assembled structures in nature. It not only provides a protective container for cells and sub-cellular compartments, but also hosts much of the machinery for cellular communication and transport across the cell membrane. Solid supported lipid bilayers provide an excellent model system for studying the surface chemistry of the cell. Moreover, they are accessible to a wide variety of surface-specific analytical techniques. This makes it possible to investigate processes such as cell signaling, ligand–receptor interactions, enzymatic reactions occurring at the cell surface, as well as pathogen attack. A review of historical work with solid supported lipid bilayers as well as recent research (performed at NIST Aug 09) and future goals will be presented.

Michael Gramlich:

“The Cylon Project Part III: Probabilistic Neural Networks”

M.J.Barber, J.W.Clark, C.H.Anderson, *Phy.Rev. E*, 68 041912 (2003)

This is a continuation on the possible development of cybernetic organisms given today’s technology and understanding. This part will be a build on the first two parts. Here I will present the use of probability theory and Bayesian inference in a neural circuit to implement probabilistic reasoning.

Mohammad Sherafati:

Not submitted at time of compilation.