Second WLVT Research Symposium

Applications of Statistical Mechanics to Far-from Equilibrium and Biological Systems

July 26th, 2011
Washington and Lee University
Lexington, VA

Organizers: Jon Cook and Michel Pleimling

Supported in part by
Office of the Dean, Washington and Lee University
College of Science and Physics Department, Virginia Tech
Department of Energy, National Science Foundation
Howard Hughes Medical Institute
10:30  Welcome and Overview
Jon Cook and Michel Pleimling

10:45  Vortex dynamics in disordered type II superconductors
Ulrich Dobramysl, Michel Pleimling, and Uwe Täuber, Virginia Tech,
Blacksburg, VA

11:15  Computational study of Hebbian plasticity in small neural networks: can we
predict the fate of synapses?
Blaise Buma and Jon Erickson, Washington and Lee, Lexington, VA

11:45  Coffee

12:00  A simple model for studying interacting networks
Wenjia Liu, Shivakumar Jolad, Beate Schmittmann, and Royce Zia, Virginia
Tech, Blacksburg, VA

12:30  Contact process on static and adaptive preferred degree networks
Shivakumar Jolad, Wenjia Liu, Royce Zia, and Beate Schmittmann, Virginia
Tech, Blacksburg, VA

1:00   Lunch

2:00   Time dependent mechanical response of the cytoskeleton
Nasrin Afzal and Michel Pleimling, Virginia Tech, Blacksburg, VA

2:30   Molecular and mechanical comparisons of cob-web weaver spiders' silk
Elizabeth Brassfield, Peter O'Donnell, Patrick Oley, Michael White, and Nadia
Ayoub, Washington and Lee, Lexington, VA

3:00   Cyclic competition of four species: deterministic trajectories and stochastic results
Clinton Durney, Sara Case, Michel Pleimling, and Royce Zia, Virginia Tech,
Blacksburg, VA

3:30   Tea

4:00   Muscle contraction modeled as a stochastic ratchet
Alex Finnegan and Steve Desjardins, Washington and Lee, Lexington, VA

4:30   Phase transitions of the two-dimensional Ising model in contact with two heat
baths
Linjun Li and Michel Pleimling, Virginia Tech, Blacksburg, VA

5:00   Conclusion
Jon Cook and Michel Pleimling

5:30   Dinner