

First WLVT Research Symposium

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

June 22nd, 2010
Washington and Lee University
Lexington, VA



Organizers: Tom Williams and Royce Zia

Supported in part by

Office of the Dean, Washington and Lee University
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PROGRAM

Speaker(s) are underlined.

- 10:30 **Welcome and Overview**
Royce Zia
- 10:45 **Studying Protein Binding Reactions in Real Time: Surface Plasmon Resonance and Stochastic Simulations**
Matt Raum and U.C. Täuber, Virginia Tech, Blacksburg, VA
- 11:15 **Spatial Variability Enhances Species Fitness in Stochastic Predator-Prey Interactions**
Ulrich Dobramysl and U.C. Täuber, Virginia Tech, Blacksburg, VA
- 11:45 **Coffee**
- 12:00 **The View from Hamiltonia**
Tom Williams and I. Mazilu, Washington and Lee, Lexington, VA
- 12:30 **Modeling Protein Synthesis by the Totally Asymmetric Simple Exclusion Process**
Nyles Breecher and J.J. Dong, Hamline University, St. Paul, MN
- 1:00 **Lunch**
- 2:00 **Phase Transitions in a Two-Lane Model (“ABC Model”) of Transport**
Daniel Linford, M. Pleimling, and R.K.P. Zia, Virginia Tech, Blacksburg, VA
- 2:30 **Survival of the Weakest or Not? Variety of Outcomes in a System of Four Species Competing with Cyclic Dynamics**
Clinton Durney, Sara Case, M. Pleimling, and R.K.P. Zia, Virginia Tech, Blacksburg, VA
- 3:00 **A One Dimensional Stochastic Susceptible-Infectious-Recovered Model and its Variations: a Hamiltonian Approach**
Ali Hamed, Dia’a Al-Din Bisharat, Mohamad Amine and I. Mazilu, Washington and Lee, Lexington, VA
- 3:30 **Tea and Informal Discussions**
- 4:45 **Closing Remarks**
Tom Williams
- 5:30 **Dinner**

Informal discussions and research collaborations may continue on the 23rd.