Workshop on Multi-scale Stochastic Modeling of Cell Dynamics

Jan 17 - Jan 22, 2010
Banff International Research Station

Breakfast: 7:00 to 9:30, Lunch: 11:30 to 13:30, Dinner: 17:30 to 19:30
Meals are in restaurant, Sally Borden Building
Coffee Breaks are in 2nd floor lounge, Corbett Hall

Monday, Jan 18 2010

	(introductory remarks at 10:00)
10:10-10:45 **10:50-11:25** **11:30-12:10**	**Mattingly, Jonathan**: Stochastic fluctuations in bio chemical networks **Higham, Des**: Discrete versus Continuous in Simple Gene Regulation Models **Wang, Jin**: Potential and Flux Landscape Framework for Understanding Stability and Robustness of Cellular Network
	(lunch & afternoon break)
17:30-18:05 **18:10-18:50**	**Perkins, Ted**: Trajectory inference for stochastic chemical kinetic models **Williams, Ruth**: Coupled enzymatic degradation of proteins

Tuesday, Jan 19 2010

08:30-09:05 **09:10-09:45** **09:50-10:30**	**Kou, Samuel**: Multi-resolution inference of stochastic models from partially observed data **Scott, Matthew**: Modeling intrinsic noise in continuous systems **Liu, Di**: Numerical methods for stochastic bio-chemical reacting networks with multiple time scales
	(coffee break)
10:50-11:25 **11:30-12:10**	**Wilkinson, Darren**: Bayesian inference for stochastic networks **Santillan, Moises**:Evolution of the distributions for stochastic gene expression subject to negative feedback regulation
	(lunch & afternoon break)
17:30-18:05 **18:10-18:50**	**Tupper, Paul**: An Apparent Paradox of State-Dependent Diffusion **Mukherjee, Sayan**: Multiscale factor models for molecular networks

Wednesday, Jan 20 2010

08:30-09:05 **09:10-09:45** **09:50-10:30**	**Kuske, Rachel**: Model choice for mixed mode oscillations: coherence resonance and delay bifurcations **Anderson, David**: Simulation methods for stochastically modeled population processes **Eldon Emberly**: A mechanism for polar protein localization in bacteria
	(coffee break)
10:50-11:25 **11:30-12:10**	**Fricks, John**: Modeling Neck Linker Extension in Kinesin Molecular Motors **Kang, Hye-Won**:The optimal size for space discretization for chemical reaction-diffusion networks
	(lunch & afternoon break)
17:30-18:05 **18:10-18:50**	**Pfaffelhuber, Peter**: Spatial aspects of multiscale chemical reaction networks **Kaern, Mads**: A framework for stochastic simulations of gene expression within evolving heterogeneous cell populations

Thursday, Jan 21 2010

08:30-09:05 **09:10-09:45** **09:50-10:30**	**Othmer, Hans**: A Multi-Scale Analysis of Reacting Systems **Rempala, Greg**: Statistical and Algebraic Methods for Analyzing Stochastic Mass Action Kinetics **McMillen, David**: Bacterial gene expression: modelling and (some) experiments
	(coffee break)
10:50-11:25 **11:30-12:10**	**Swain, Peter**: Modelling stochasticity in gene expression **Konstantin Mischaikow**: Developing a Database for the global dynamics of multiparameter systems
	(lunch & afternoon break)
17:30-18:05 **18:10-18:50**	**Qian, Hong**: Noneq. phase trans'n: Emerging landscape, time scales, and the chemical basis for epigenetic-inheritance **Tsimring, Lev**: Dynamics and synchronization of synthetic gene oscillators

Friday, Jan 22 2010

08:30-09:05 **09:10-09:45** **09:50-10:30** **.**	**Kurtz, Tom**: Diffusion Approximation for Multiscale Reaction Network Models **Surovcik, Katharina**: Is anybody out there? Modelling spatial scaling in quorum sensing **Gedeon, Thomas**: Somitogenesis clock-wave initiation requires differential decay and multiple binding sites for clock protein
	(coffee break)
10:50-11:25 **11:30-12:10**	**Cottrell, David**: Incorporating diffusion in stochastic models of gene expression **Glynn, Peter** : Monte Carlo Methods for Computing Quasi-stationary Distributions
	(check-out at 12:00)