

## Uncertainty Quantification for Multiscale Stochastic Systems and Applications

**Tuesday January 19, 2016**

- 8:00–8:55 *Check-In/Light Breakfast (Hosted by IPAM)*
- 8:55–9:00 *Welcome and Opening Remarks*
- 9:00–9:50 **Andrew Majda** (New York University)  
*Prediction, State Estimation, and Uncertainty Quantification in Complex Systems*
- 10:00–10:15 *Break*
- 10:15–11:05 **Andrew Stuart** (University of Warwick)  
*Hierarchical Bayesian Level Set Inversion*
- 11:15–11:30 *Break*
- 11:30–12:20 **Tom Chou** (University of California, Los Angeles (UCLA))  
*Inference in biophysical models*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Habib Najm** (Sandia National Laboratories)  
*On Model Error and Statistical Calibration of Physical Models*
- 3:30–4:00 *Break*
- 4:00–4:50 **Henry Lam** (University of Michigan)  
*Quantifying stochastic model errors via robust optimization*
- 5:00–6:30 *Poster Session & Reception (Hosted by IPAM)*

**Wednesday January 20, 2016**

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–9:50 **Peter Glynn** (Stanford University)  
*Sensitivity Analysis for Markov Chains*
- 10:00–10:15 *Break*
- 10:15–11:05 **Carsten Hartmann** (Freie Universität Berlin)  
*Cross-entropy minimization, optimal control and importance sampling of rare events*
- 11:15–11:30 *Break*

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- 11:30–12:20 **Yannis Pantazis** (University of Crete)  
*Sensitivity analysis, uncertainty quantification and inference in stochastic dynamics*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Araz Hashemi** (Wright-Patterson Air Force Base)  
*Averaging and Sensitivity Analysis for Multiscale Stochastic Reaction Networks*
- 3:30–4:00 *Break*
- 4:00–4:50 **Muruhan Rathinam** (University of Maryland Baltimore County)  
*Estimation of parametric sensitivities for continuous time Markov processes on integer lattices*

### Thursday January 21, 2016

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–9:50 **Roger Ghanem** (University of Southern California (USC))  
*Treating modeling uncertainty in multiscale methods*
- 10:00–10:15 *Break*
- 10:15–11:05 **Andrea Bertozzi** (University of California, Los Angeles (UCLA))  
*Multiscale stochastic systems in the social sciences*
- 11:15–11:30 *Break*
- 11:30–12:20 **Ilias Biliotis** (Purdue University)  
*Enabling predictive simulations for design and decision making under a limited budget*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Dimitris Giannakis** (New York University)  
*Data-driven spectral decomposition and forecasting of ergodic dynamical systems*
- 3:30–4:00 *Break*
- 4:00–4:50 **Raul Tempone** (King Abdullah Univ. of Science and Technology (KAUST))  
*Multi-index Monte Carlo and Multi-index Stochastic Collocation*

### Friday January 22, 2016

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–9:50 **Mitchell Luskin** (University of Minnesota, Twin Cities)  
*A Theoretical Examination of Diffusive Molecular Dynamics*
- 10:00–10:15 *Break*

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- 10:15–11:05 **Houman Owhadi** (California Institute of Technology)  
*Computational Information Games*
- 11:15–11:30 *Break*
- 11:30–12:20 **Nicholas Zabaras** (University of Warwick)  
*Towards Data-Driven Predictive Multiscale Materials Modelling*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Daniel Tartakovsky** (University of California, San Diego (UCSD))  
*The method of Distribution for Uncertainty Quantification*

