

Michigan Center for Industrial and Applied Mathematics

## Workshop on Multiscale and Stochastic Modeling, Analysis, and Computation

James B. Henry Center for Executive Development  
Michigan State University

### Reception and Registration – Thursday Oct 9

6:45pm	Shuttle	From Hampton Inn to Henry Center
7-9 pm	Reception	Four Seasons Room, (A159) Henry Center
9 pm	Shuttle	From Henry Center to Hampton Inn

### Session I – Friday Oct 10 – Room A170

8:20am	Shuttle	From Hampton Inn to Henry Center
8:30-8:50am	Coffee	Room A170, Henry Center
8:50-9:00am	Welcome Remarks	Assistant V.P. of Research, Estelle McGroarty
9:00-9:50am	Eric Vanden-Eijnden	Transition pathways of rare reactive events in complex systems
10:00-10:50am	David Kinderlehrer	New perspectives on texture evolution
11:00-11:30am	Coffee Break	
11:30-11:55am	Peter Sternberg	Lower dimensional energetic models via Gamma convergence
12:00-1:30pm	Lunch	Atrium (A150)

## Session II – Friday Oct 10 – Room A170

1:30-1:55am	Chun Liu	Energetic variational approaches in complex fluids: Kinematic transport
2:00-2:25pm	Hao-Min Zhou	Fast numerical simulations for stochastic Maxwell equations with applications in photonic crystal spectrometer design
2:30-2:45pm	Coffee Break	
2:45- 3:10pm	Jack Xin	Statistical analysis and computation of time domain blind source separation events
3:15-3:40 pm	Peter Smereka	Modeling and simulation of heteroepitaxial growth
3:45-4:00 pm	Coffee Break	
4:00-4:25 pm	Richard Tsai	Numerical multiscale methods for nonlinear and highly oscillatory ODEs
4:30-5:00pm	Houman Owhadi	Homogenization of elasticity equations without scale separation

## Posters and Banquet – Friday Oct 10

5:30-6:30pm	Posters and Drinks	Room B111 Henry Center
6:30-8:00pm	Banquet	Room B106 Henry Center
8:00-9:00pm	Phil Duxbury	Characterization and control of nanoparticle structure, dispersion and self-assembly
9:30pm	Shuttle	From Henry Center to Hampton Inn

### Session III – Saturday Oct 11 – Room A170

8:30am	Shuttle	From Hampton Inn to Henry Center
8:30-9:00am	Coffee	Room A170, Henry Center
9:00-9:50am	Russel Cafisch	Modeling and simulation of plasmas with excitation and ionization
10:00 -10:15am	Coffee Break	
10:15-11:05am	Bob Pego	On statistical self-similarity in clustering and coarsening processes
11:15-11:30am	Coffee Break	
11:30-11:55am	Rustum Choksi	The phase diagram for microphase separation of diblock copolymers: an approach via the nonlocal Cahn-Hilliard functional
12:00-1:30pm	Lunch	Room 106

### Session IV – Saturday Oct 11 – Room A170

1:30- 1:50pm	Carme Calderer	Gels: Modeling, analysis, and applications
2:00-2:25pm	Cyrill Muratov	Self-induced stochastic resonance: How new nonrandom behaviors can arise from the action of noise
2:30 - 3:00 pm	Coffee Break	
3:00-3:25pm	Yuehua Cui	Large scale genome-wide association studies via entropy test
3:30- 3:55pm	George Yin	Two time-scale systems involving fast stochastic events