

118th Statistical Mechanics Conference
Rutgers University, Busch Campus, Hill Center, Room 114
Sunday, December 17, 2017 - Tuesday December 19, 2017
Honorees
Guenter Ahlers, Shelly Goldstein, and Christina Marchetti

Sunday, Dec 17th 2017

Registration and Breakfast 8:00 - 9:00

- 9:00 - 9:25 **Charles Doering** - University of Michigan
Wall to Wall Optimal Transport
- 9:25 - 9:50 **Peter Constantin** - Princeton University
On the Inviscid Limit
- 9:50 - 10:15 **Aparna Baskaran** - Brandeis University
Dynamics of an active nematic under confinement
- 10:15 - 10:45 **Coffee Break**
- 10:45 - 11:10 **Mark Bowick** - Kavli Institute for Theoretical Physics and UC Santa Barbara
Statistical Mechanics of Thermalized Graphene Kirigami
- 11:10 - 11:35 **Jim Dufty** - University of Florida
Kinetic Theory for Matter Under Extreme Conditions
- 11:35 - 12:00 **Alessandro Giuliani** - University of Roma Tre
Plate-nematic phase in a 3D hard-core particle system
- 12:00 - 12:25 **Ian Jauslin** - Institute for Advanced Study
Nematic liquid crystal phase in a system of interacting dimers

Lunch 12:25 - 1:55

- 1:55 - 2:20 **Leo Radzihovsky** - Colorado University
Disorder-driven transition in Dirac semimetals and semiconductors
- 2:20 - 2:45 **Gabi Kotliar** - Rutgers University
The strong correlation problem. How fermionic quasiparticles emerge from atomic excitations
- 2:45 - 3:10 **Bingkan Xue** - Institute for Advanced Study
Bet Hedging over Growth and Survival under Demographic Fluctuations
- 3:10 - 3:40 **Coffee Break**
- 3:40 - 4:05 **Sriram Ramaswamy** - Indian Institute of Science
Time-reversal, mock inertia and entropy production in active matter
- 4:05 - 4:30 **Shiladitya Banerjee** - University College London
Adaptation by shape-shifting
- 4:30 - 4:55 **Moumita Das** - Rochester Institute of Technology
Mechanical structure function properties of cytoskeletal and extracellular networks
- 4:55 - 5:20 **Xingbo Yang** - Harvard University
Correlating Cell Shape and Cellular Stress in Motile Confluent Tissues
- 5:20 - 5:45 **Silke Henkes** - University of Aberdeen
Epithelial cell sheets as active matter
- 5:50 Cocktails & Concert sponsored by Springer (All are invited)**

8:00 Banquet at Busch Dining Hall - Reservation required

Monday, Dec 18 2017

Registration and Breakfast 8:00 - 8:45

8:45 - 10:00 Short Talks: Session A

Coffee Break 10:00 - 10:30

- 10:30 - 10:55 **Eva Andrei** - Rutgers University
Physics of Magnetic Moments in Imperfect Graphene
- 10:55 - 11:20 **Herbert Levine** - RICE
Elasticity and Plasticity of Extracellular Matrix Materials
- 11:20 - 11:45 **Dmitry Krotov** - Institute for Advanced Study
Dense Associative Memories and Deep Learning
- 11:45 - 12:10 **Alex Morozov** - Rutgers University
Bayesian inference of global network statistics using random walks
- 12:10 - 12:35 **Ovidiu Costin** - Ohio State University
Nonperturbative time dependent solution of a simple ionization model

Lunch 12:35 - 2:00

- 2:00 - 2:25 **Herbert Spohn** - TUM
Hydrodynamics of integrable classical and quantum systems
- 2:25 - 2:50 **Harry Swinney** - University of Texas at Austin
Observation of the onset of crystallization of sheared hard spheres
- 2:50 - 3:15 **Eberhard Bodenschatz** - Max Planck Gesellschaft
Pattern-Formation in Moist Convection

Coffee Break 3:15 - 3:45

- 3:45 - 4:10 **Eberhard Bodenschatz** - Laudatio for Guenter Ahlers
- 4:10 - 4:35 **Detlef Durr** - Department of Mathematics, LMU, Munich
Shelly Goldstein - unorthodoxly orthodox
- 4:35 - 5:00 **Tim Maudlin** - NYU
(Information) Paradox Lost
- 5:00 - 5:25 **Michael Kiessling** - Rutgers University
General Relativity at the (Sub-)Atomic Scale (In celebration of Shelly Goldstein's 70th birthday)
- 5:25 - 5:50 **Sue Coppermith** - Laudatio for Christina Marchetti

6:00 Cocktails and Dinner at the Hill Center - 7th Floor

Tuesday, Dec 19 2017

Registration and Breakfast 8:00 - 8:30

8:30 - 9:30 Short Talks

Coffee Break 9:30 - 10:00

- 10:00 - 10:25 **Laura Greene** - National MagLab and Florida State University
Topological Kondo insulator SmB₆: Surface states interacting with bulk spin excitons
- 10:25 - 10:50 **Sue Coppermith** - University of Wisconsin Madison
Qubits and nonlinear dynamics

- 10:50 - 11:15 **Ned Wingreen** - Princeton University
Magic numbers in protein phase separation
- 11:15 - 11:40 **Eugene Shakhnokic** - Harvard University
Understanding evolution on multiple scales: from protein physics to population genetics and back
- 11:40 - 12:05 **Jean-Francois Joanny** - Curie Institute
Cell motion and organization in tissue monolayers
- 12:05 - 12:30 **Laura Green** - *Human Rights of Science Diplomacy*
- Lunch 12:30 - 1:30**
- 1:30- 1:55 **Valia Allori** - Northern Illinois University
Determinism, indeterminism and the statistical postulate
- 1:55 - 2:20 **Valerio Lucarini** - University of Reading
Response Formulae for n-point Correlations in Statistical Mechanical Systems and Application to a Problem of
- 2:20 - 2:45 **Peter Pickl** - Ludwig Maximilian University of Munich
Derivation of the Vlasov equation
- 2:45 - 3:10 **Roderick Tumulka** - Eberhard-Karls University
Probability of Particle Creation and Interior-Boundary Conditions for Fock Space