

106th Statistical Mechanics Conference
Rutgers University, Busch Campus, Hill Center, room 114
Sunday – Tuesday, December 18-20, 2011

CONFERENCE PROGRAM

Sunday, December 18, 2011

8:00 – 9:00 REGISTRATION AND BREAKFAST

9:00 – 9:25 James Langer, University of California, Santa Barbara
"Shear-Transformation-Zone Theory of Glassy Diffusion, Stretched Exponentials, and the Stokes-Einstein Relation"

9:25 – 9:50 Neil Ashcroft, Cornell University
"The Statistical Physics of Dense Hydrogen at the Three-Quarter Century Mark"

9:50 – 10:15 Gunduz Caginalp, University of Pittsburg
"Phase Field Models with Anisotropy and Non-local Interactions"

10:15 – 10:40 Salvatore Torquato, Princeton University
"Geometry and Physics in High-Dimensional Euclidean Spaces"

10:40 – 11:10 COFFEE

11:10 – 11:35 Elliot Lieb, Princeton University
"Possible Lattice Distortion in the Hubbard Model for Graphene"

11:35 – 12:00 Amnon Aharony, Tel Aviv University
"Superconducting fluctuations in proximity bilayers"

12:00-12:25 Eytan Domany, Weizmann Institute
"Complex dynamics of transcriptional response: how do cells get on the fast lane?"

12:25 – 2:00 – LUNCH

2:00 – 2:25 Harold Scheraga, Cornell University
"The Protein Folding Problem: Structure, Dynamics, Thermodynamics, and Folding Pathways"

2:25 – 2:50 Eric Siggia, Rockefeller University
"Geometry, Epistasis and Developmental Patterning"

2:50 – 3:15 Daniel S. Fisher, Stanford University
"Genomic redundancy and evolutionary dynamics"

3:15 – 3:40 David R. Nelson, Harvard University
"Dislocation Mediated Elongation of Bacteria"

3:40 – 4:10 COFFEE

4:10 – 4:35 Charles S. Peskin, New York University
"A Cell Migration Model with Shock-like Discontinuities"

4:35 – 5:00 Alexander Grosberg, New York University
"From topology to statistical mechanics of ring polymers to genome folding"

5:00 – 5:25 Michael Widom, Carnegie Mellon University
"Thermodynamics from first principles"

5:25 – 5:50 Elisabeth Widom, Miami University
"Timescales of Magmatic Processes"

6:00 – 8:00 COCKTAILS AND CONCERT ARE SPONSORED BY SPRINGER, PUBLISHER OF JOURNAL OF STATISTICAL PHYSICS AND COMMUNICATIONS IN MATHEMATICAL PHYSICS. THE MUSIC WILL BE PRESENTED BY DOUG LUNDEEN, HORN, ERIC DAVIS, HORN AND ROE GOODMAN, BASSOON. ALL ARE INVITED.

8:00 – BANQUET. ADVANCED RESERVATIONS ARE REQUIRED. COCKTAILS AND CONCERT WILL BE HELD AT THE FIBER OPTICS AUDITORIUM, AND THE BANQUET DINNER WILL TAKE PLACE AT THE BUSCH CAMPUS FACULTY DINING HALL, ROOMS A & B. PLEASE SEE BUSCH CAMPUS MAP FOR DIRECTIONS: <http://maps.rutgers.edu/maps>

Monday, December 19, 2011

7:00 – 7:35 REGISTRATION AND BREAKFAST

7:35 – 9:20 Short talks – Session A

9:20 – 9:50 COFFEE

9:50 – 10:15 Allon Percus, Claremont Graduate University
"The Peculiar Phase Structure of Random Graph Bisection"

10:15 – 10:40 Sidney Redner, Boston University
"Fate of the Kinetic Ising Model in Three Dimensions"

10:40 – 11:05 Matthew P. A. Fisher, University of California, Santa Barbara
"Non-Fermi liquid phases for 2d itinerant electrons"

11:05 – 11:30 David Huse, Princeton University
"Spin transport in an ultracold atomic Fermi gas"

11:30 – 11:55 Jorge Kurchan, Ecole Supérieure de Physique
"An infinite family of generalizations of the second law"

11:55 – 12:20 HR session with Martin J. Fisher, KickStart International

12:20 – 1:40 LUNCH

1:40 – 2:05 Michael Kiessling, Rutgers University
"Order and Chaos in some Trigonometric Series"

2:05 – 2:30 Michael Schick, University of Washington
"Rafts in the Plasma Membrane: A Curvature-Induced Microemulsion"

2:30 – 2:55 William Gelbart, University of California, Los Angeles
"Self-assembly of RNA Viruses"

2:55 – 3:25 COFFEE

3:25 – 3:50 David Mukamel, The Weizmann Institute
"On the steady state of particle-nonconserving driven models"

3:50 – 4:15 Satya Majumdar, CNRS/Universite Paris-Sud
"Vicious Walkers, Random Matrices and 2-d Yang-Mills theory"

4:15 – 4:40 Craig A. Tracy, University of California, Davis
"Recent progress and open problems for the asymmetric simple exclusion process"

4:40 – 5:05 Jeremy Quastel, University of Toronto
"Exact formulas for KPZ and directed polymers in 1+1 dimensions"

5:05 – 5:30 Andrea J. Liu, University of Pennsylvania
"Criticality and the jamming transition"

5:30 – 5:55 Rajarshi Roy, University of Maryland
"Synchronization in Real Optical Networks"

6:00 – 8:00 COCKTAILS & DINNER – HILL CENTER, ROOM 705

8:00 – 8:25 Michael E. Fisher, University of Maryland
"COUNTER-EXAMPLES: Charms, Cautions, and Cognition"

8:25 – 8:50 Jerome Percus, New York University
"A Random Walk to Fundamental Measure Theory"

8:50 – 9:15 Benjamin Widom, Cornell University
"Tales of an Obsession: Solvophobia and Solvophilia"

Tuesday, December 20, 2011

7:30 – 7:55 REGISTRATION AND BREAKFAST

7:55 – 9:55 Short talks – Session B

9:55 – 10:25 COFFEE

10:25 – 10:50 Kevin Jensen, Naval Research Laboratory
"A Comprehensive Approach to Electron Emission Theory"

10:25 – 10:50 Yan Levin, Instituto de Fisica UFRGS, Brazil
"Statistical Mechanics of Systems with Long-Range Interactions"

10:50 – 11:15 Douglas Abraham, University of Oxford
"Strips, Bubbles and Interface Structure"

11:15 – 11:40 Alex Neimark, Rutgers University
"Breathing Crystals: Adsorption-Induced Deformation and Structural Transitions in Metal-Organic Frameworks"

12:05 – 12:30 Paul Federbush, University of Michigan
"Asymptotic Expansions for $\lambda d(p)$ of the Monomer-Dimer Problem"

12:30 – 1:40 LUNCH

1:40 – 2:05 David Brydges, University of British Columbia, Canada
"The Mayer and Virial Expansions"

2:05 – 2:30 Martin Fraas, Technion Israel Institute of Technology
"On a definition of current in Markovian open quantum systems"

2:30 – 2:55 Leonid Korolov, University of Maryland
"Polymer measures and branching diffusions"

2:55 – 3:20 Charles Radin, University of Texas
"Rigidity in solids"

3:20 – 3:45 Giambattista Giacomin, Universite Paris 7
"Synchronization of active and inactive rotators"

3:45 – Short talks – Session C