100TH STATISTICAL MECHANICS CONFERENCE, DECEMBER 13 – 18, 2008
HILL CENTER, ROOM 114, SATURDAY - TUESDAY
CORE BUILDING - LECTURE HALL, WEDNESDAY – THURSDAY

<u>CONFERENCE PROGRAM</u>

<u>Friday, December 12</u>
6:00 – 8:00pm Reception, Winants Hall, 7 College Avenue, New Brunswick, NJ 08901
Philip Furmanski, Executive Vice President for Academic Affairs – welcoming remarks

<u>Saturday, December 13</u>
8:00 – 9:15   Registration and breakfast

9:15 – 9:20   Mathematical Sciences Dean Michael Carr - Welcoming Remarks

9:20 – 9:50   E. Lieb, Princeton University
A retrospective on rigorous results on the Bose gas

9:50 – 10:10   R. Seiringer, Princeton University
The Lieb-Liniger Model as a Limit of Dilute Bosons in Three Dimensions

10:10 – 10:30   T. Natterman, University of Cologne, Institute for Theoretical Physics
Localized states and interaction induced delocalization in Bose gases with quenched disorder

10:30 – 11:00   COFFEE

11:00 – 11:25   M. Batchelor, The Australian National University
Scaling function of the 2D Ising model in a magnetic field

11:25– 11:50   V. Korepin, Stony Brook University
Application of-Hartwig Formula to Quantum Spin Chains

11:50 – 12:15   E. Titi, Weizmann Institute of Science and University of California, Irvine
Recent Advances in the Three-dimensional Navier-Stokes Equations, Geophysical and Turbulence Models

12:15 – 1:45   LUNCH

1:45 – 2:15   D. Ceperely, University of Illinois at Urbana-Champaign
The 2D quantum one component plasma as seen by Path Integral Monte Carlo

2:15– 2:45   H. Spohn, Universitat Munchen
Kinetics of the Bose-Einstein Condensation

2:45 – 3:15   J. Fröhlich, ETH Zurich
Out of Equilibrium

3:15– 3:45   COFFEE

3:45 – 4:10   E.G.D. Cohen, Rockefeller University
Nonequilibrium Statistical Mechanics in its Bronze Age

4:10 – 4:35   Y. Sinai, Princeton University
Chaos: Yesterday, Today and Tomorrow

4:35 – 5:00   G. Gallavotti, Rome I/Rutgers University
On the physical significance of finite thermostats

5:00 – 5:25   C. Jarzynski, University of Maryland
Fluctuation theorems, work relations, and the Arrow of Time

5:25 – 5:50   S. Redner, Boston University
Consensus Formation on Simple and Complex Social Networks

President Richard McCormick – Welcoming remarks
6:00 – 7:00   Cocktails (same location as conference)

7:00 – 8:00   Concert at Busch Campus Center multi-purpose room by Reza Najfar and Erich Faltermeier.
All are invited; courtesy of Rutgers University

8:00 -   Buffet dinner at Busch Campus Center multi-purpose room/reservation required

Sunday, December 14

8:00 – 9:00   Registration and breakfast

9:00 – 9:30   H. Widom, University of California, Santa Cruz
Formulas and Asymptotics for the Asymmetric Simple Exclusion Process

9:30 – 10:00   E. Brezin, ENS, Paris
Non-linear sigma models : a retrospective look

10:00 – 10:20   P. Bleher, Indiana University-Purdue University Indianapolis
Exact solution of the six vertex model with domain wall boundary conditions

10:20 – 10:50   COFFEE

10:50 – 11:10   M. Aizenman, Princeton University
A Dynamical Perspective on the Success of Parisi's Hierarchical Ansatz

11:10 – 11:30   S. Smirnov, Universite de Geneve
10 years of Schramm Loewner Evolution

11:30 – 12:00   J. Cardy, University of Oxford
Universality, , Integrability and Analyticity

12:00 – 12:30   M.E. Fisher, University of Maryland
Landau & Zeldovich, 1943; Stillinger & Lovett, 1968: Are Electrolytes Metallic at Criticality?

12:30 – 2:00   LUNCH

2:00 – 2:30   B. Widom, Cornell University
Critical points on the surfaces and lines at which phases meet

2:30 – 3:00   J. Sengers, University of Maryland
Critical Phenomena in Macromolecular Solutions

3:00 – 3:30   Human Rights Session with J. Lebowitz and Sophie Cook, Director Committee of Concerned Scientists

3:30 – 4:00   COFFEE

4:00 – 4:30   K. Binder, Universitat Mainz
Surface-directed spinodal decomposition: Lattice model versus Ginzburg-Landau Theory

4:30 – 4:50   H. E. Stanley, Boston University
Liquid Water: New Results in Bulk, Nanoconfined, and Biological Environments

4:50 – 5:10   J. Percus, NYU, Courant Institute
Classical fluid transport under molecular scale confinement

5:10 – 5:40   Short talks, Session A1

5:40 – 6:40   Cocktails (same location as conference)
Concert at Busch Campus Center multi-purpose room by members of the Tahvildar-Zadeh family and the well known duo of Richard Lyons, Chair of the Mathematics Department, Rutgers and Pierre Hohenberg, Senior Vice Provost for Research at NYU (All are invited; courtesy of Springer)

7:45 -   Conference Banquet/reservation required

Monday, December 15

7:00 – 7:40   Registration and breakfast

7:40 – 9:50   Short talks, Session A2

9:50 – 10:20   COFFEE

10:20 – 11:00   A. Levine, IAS, Princeton
Evolutionary selection and counter selection in human genes involved in reproduction over the past 30,000 years

11:00 – 11:30   B. Shraiman, University of California, Santa Barbara
Alleles versus genotypes: collective behavior of interacting genes in the presence of recombination

11:30 – 12:00   B. Bollobas, University of Memphis
Models of real-world networks: Inhomogeneous Random Graphs and Convergent Graph Sequences

12:00 – 12:30   R. Zia,Virginia Tech.
Twenty five years after KLS: A celebration of non-equilibrium statistical mechanics

12:30 – 2:00   LUNCH

2:00 – 2:25   A. Liu, University of Pennsylvania
Jamming: How far have we come, and what still lies ahead?

2:25 – 2:50   E. Yuzbashyan, Rutgers University
The Link between Integrability, Level Crossings, and Exact Solution in Quantum Models

2:50 – 3:15   P. Choquard, EPFL, Lausanne
Bound states of mean field equations for a gravitational Bose Einstein condensate gas

3:15 – 3:40   J. Yeomans, Oxford University
Hydrodynamic interactions between microswimmers

3:40 – 4:10   COFFEE

4:10 – 4:40   S. Solla, Northwestern University
Statistical physics, Bayesian inference, and neural information processing

4:40 – 5:10   D. Fisher, University of Stanford
Sex and evolutionary dynamics of microbes

5:10 – 5:40   J. Maldacena, IAS, Princeton
Black holes as source of information

5:40 – 7:40   Cocktails and dinner in Hill Center room 703/705

7:40 – 8:20   P. Anderson, Princeton University
The Unreasonable Effectiveness of Experimental Physics in Mathematics

8:20 – 9:00   F. Dyson, IAS, Princeton
Birds and Frogs

Tuesday, December 16

7:00 – 7:30   Registration and breakfast

7:30 – 10:30   Short talks, Session B

10:30 – 11:00 COFFEE

11:00 – 11:30   K. Sreenivasan, The Abdus Salam Inter. Centre for Theo. Physics, Trieste,
Hydrodynamic Turbulence

11:30 – 12:30   Human Rights Session with talk by A. Beyerchen, Ohio State University
Some Thoughts on Scientists and the Onset of Dictatorships

12:30 – 2:00   LUNCH

2:00 – 2:30   B. Derrida, ENS, France

Current Fluctuations in non-equilibrium steady states

2:30 – 3:00   M. Mezard, CNRS and Universite Paris-Sud
Message passing strategies in physics and computer science

3:00 – 3:30   P. Contucci, Universita di Bologna
Short-Range Spin Glasses: Looking Back, Looking Forward

3:30 – 4:00   COFFEE

4:00 – 4:30   R. Varadhan, NYU Courant Institute
Scaling Limits of Large Systems: Past, Present and Future

4:30 – 5:00   L. Barabasi, University of Notre Dame
From Networks to Human Mobility Patterns

5:00 – 6:30   Short talks, Session C

6:30 -   Cocktails and dinner in Hill Center room 703/705
Klezmer music by Klez Dispensers - <u>Click here for group website</u> (Contributed by friends of Joel Lebowitz
to celebrate the 100th meeting)

<u>Wednesday, December 17</u> (DIMACS WORKSHOP: DIMACS LECTURE HALL)

8:00 – 9:00   Registration and breakfast (DIMACS Room 401)

9:00 – 9:35   S. Havlin, Bar-Ilan University
Novel Percolation in Networks

9:40 – 10:15   O. Haggstrom, Chalmers University of Technology
Random walk on a one-dimensional percolation cluster

10:20 – 10:50 COFFEE

10:50 – 11:25   R. Kenyon, Brown University
Dimers and Harnack curves

11:30 – 12:05   Y. Peres, Microsoft Research, Redmond
Internal DLA and the abelian sandpile

12:10 – 12:45   J. Beck, Rutgers University
Randomness of the irrational rotation by square root of two

12:50 – 2:10   LUNCH

2:10 – 2:45   G. Grimmett, University of Cambridge
Using Sharp Threshold Theorems in Statistical Mechanics

2:50 – 3:25   V. Sidoravicius, CWI-Amsterdam and IMPA-Rio de Janeiro
Recurrence of Markov chains and DLA type growth

3:30 – 4:00   COFFEE

4:00 – 4:35   B. Duplantier, CEA Saclay
Liouville Quantum Gravity and KPZ

4:40 – 5:15   J. Steif, Chalmers University of Technology
Stochastic domination and the Ising model

5:20 – 5:55   A. Sinclair, University of California, Berkeley
Mixing time for the solid-on-solid model

Open dinner

Thursday, December 18 (DIMACS WORKSHOP: DIMACS LECTURE HALL)

8:00 – 9:00   Registration and breakfast (DIMACS Room 401)

9:00 – 9:35   D. Randall, Georgia Tech
Mixing times of local Markov chains on biased lattice configurations

9:40 – 10:15   M. Newman, University of Michigan and Santa Fe Institute
Random Graphs as Models of Networks

10:20 – 10:50 COFFEE

10:50 – 11:25   J. Van den Berg, Netrum Wiskunde and Informatica
Connections between 2D invasion and critical percolation

11:30 – 12:05   G. Ben Arous, NYU Courant Institute
Random walks on random trees: trapping, scaling limits, and fluctuation-dissipation

12:10 – 12:45   S. Shlosman, Centre de Physique Theorique, Marseilles
Gibbs Ensemble of Nonintersecting paths and determinantal processes

12:50 – 2:10   LUNCH

2:10 – 2:45   C. Borgs, Microsoft
Polya Urns and Convergence of Preferential Attachment Graphs

2:50 – 3:25   D. Galvin, University of Notre Dame
A threshold phenomenon for independent sets in the hypercube

3:30 – 4:05   G. Sorkin, IBM, Watson Research Center
First-Passage Percolation on a Ladder and the Path Cost in a VCG Auction

4:10 -   Coffee and chatting