

**99th Statistical Mechanics Conference
RUTGERS UNIVERSITY,
HILL CENTER, ROOM 114
SUNDAY, MONDAY AND TUESDAY
MAY 11-13, 2008**

CONFERENCE PROGRAM

SATURDAY, MAY 10, 2008

Dinner at 7:00pm at Hyatt. Transportation from Howard Johnson at 6:35pm

SUNDAY, MAY 11, 2008

8:00-9:00 **Breakfast and registration**

9:00 – 9:20 R. Monasson, ENS
On the Inverse Random Walk Problem

9:20 – 9:40 E. Bouchaud, CEA, France
Some Scaling Properties of Fracture Surfaces

9:40 – 9:50 C. Dasgupta, Indian Institute of Science
Growing Length and Time Scales in Glass Forming Liquids

9:50 – 10:00 P. Young, University of California, Santa Cruz
Size Dependence of the Minimum Excitation Gap in the Quantum Adiabatic Algorithm

10:00 – 10:20 S. Hikami, University of Tokyo
Topological Invariance in Random Matrices

10:20 – 10:50 **Coffee break**

10:50 – 11:10 J.P. Bouchaud, CEA, France
On an Explicit Construction of Parisi Landscapes in Finite Dimensional Euclidean Spaces

11:10 – 11:30 S. Franz, ICTP
Interfaces in Hierarchical and Finite Dimensional Spin Glasses

11:30 – 11:55 E. Andrei, Rutgers University
Graphite, Graphene and Relativistic Electrons

11:55 – 12:20 G. Jona-Lasinio, University of Roma I
What is an equilibrium state? A nonequilibrium point of view

12:20 – 1:50 **LUNCH**

1:50 – 2:10 R. Lipowsky, Max-Planck Institute, Berlin
Multi-scale Motility of Molecular Motors

2:10 – 2:30 M. Kardar, MIT
Specificity and Diversity of T-cell Receptors by Thymic Selection

2:30 – 2:50 A. Grosberg, University of Minnesota
Branched Polymers and Shapes of Neurons

2:50 – 3:10 C. Callan, Princeton University
Stochastic Dynamics of the Evolution of Gene Regulation: Simple Theory Meets Real-World Data (and Survives)

3:10 – 3:40 **COFFEE BREAK**

3:40 – 4:00 J. Zinn-Justin, CEA, France
RG Fixed Point Stability and Decay of Correlations

4:00 – 4:20 J.B. Zuber, Universite Paris, VI
Revisiting Old Matrix Integrals

4:20 – 4:40 E. Marinari, INFN, Italy
Loops in Random Graphs

4:40 – 5:00 B. Halperin, Harvard Univerity
Theoretical Considerations and Experimental Probes of the $\nu = 5/2$ Fractional Quantized Hall State

5:00 – 5:25 N. Surlas, ENS, France
Scale Invariance and Self-Averaging in Disordered Systems

5:25 – 5:50 E. Siggia, Rockefeller University
Predicting the Course of Evolution

**6:00 COCKTAILS AND CONCERT IN HONOR OF EDOUARD BREZIN & GIORGIO PARISI.
SPONSORED BY SPRINGER, PUBLISHER OF THE JOURNAL OF STATISTICAL PHYSICS AND
COMMUNICATIONS IN MATHEMATICAL PHYSICS. ALL ARE INVITED.**

**COCKTAILS WILL BE HELD IN ROOM 705 OF HILL CENTER AT 6:00PM. THE CONCERT AT 7:00PM AND
BANQUET AT 8:00PM WILL FOLLOW AT THE MULIT-PURPOSE ROOM OF THE BUSCH CAMPUS
CENTER.**

**THE CONCERT WILL BE GIVEN BY FARSHAD TAHVILDAR-ZADEH WITH THE ASSISTANCE OF
RICHARD LYONS.**

SEE MAP FOR DIRECTIONS: <http://maps.rutgers.edu/maps/default.aspx?preadj=true&campus=4?1326,322>.

MONDAY, MAY 12, 2008

8:00 – 8:40 BREAKFAST & REGISTRATION

8:40 – 9:55 Short talks - Session A

9:55 – 10:15 COFFEE BREAK

10:15 – 10:35 P. Stamp, University of Bristish Columbia
Quantum Glasses

10:35 – 11:00 M.E. Fisher, University of Maryland
On Rubel's Magical Differential Equation: Its solution can approximate any continuous $f(x)$

11:00 – 11:25 E. Witten, Institute for Advanced Study
Electric-Magnetic Duality on a Half-Space

11:25 – 11:50 S. Leibler, Rockefeller University
Some Inverse Problems in Biology

11:50 – 12:35 Human Rights session: Mona Younis, AAAS

12:35 – 2:00 LUNCH

2:00 – 2:25 B. Shraiman, University of California, Santa Barbara
Sex and Asymptotic Freedom

2:25 – 2:50 D. Chandler, University of California, Berkeley
Constrained Collective Dynamics and the Glass Transition

- 2:50 – 3:15 J. Garrahan, University of Nottingham
Structural Glass Transition as a First-Order Phase Transition in Space-Time
- 3:15 – 3:40 L. Cugliandolo, Univ. Pierre et Marie Curie, Paris VI
On a Field Theory for Interacting Brownian Particles
- 3:40 – 4:10 COFFEE BREAK**
- 4:10 – 4:35 J. Langer, University of California, Santa Brbara
What is the Temperature of a Deforming Glass?
- 4:35 – 5:00 H. Makse, CUNY
Statistical Mechanics of Jammed Matter and the Nature of Random Loose and Random Close Packings of Spheres
- 5:00 – 5:25 D. Nelson, Harvard University
Gene Surfing in Microorganisms
- 5:25 – 5:50 M. Schick, University of Washington
Results from a Field-Theoretic Approach to Membrane Fusion
- 5:50 – 6:15 G. West, Santa Fe Institute
Growth, Innovation and the Pace of Life from Cells to Cities
- 6:15 – 8:00 Cocktails and dinner**
- 8:10 – 9:30 Round table: “Random Matrices and Random Materials”. Participants include:
M. Aizenman, E. Brezin, G. Parisi and T. Spencer

TUESDAY, MAY 13, 2008

- 8:00 – 8:40 BREAKFAST AND REGISTRATION**
- 8:40 – 10:05 Short talks - Session B**
- 10:05 – 10:35 COFFEE BREAK**
- 10:35 – 11:00 F. Guerra, University of Rome “La Sapienza”
Functional Order Parameters and their Legendre Conjugates in Disordered Statistical Systems
- 11:00 – 11:20 D. Sherrington, University of Oxford
Local Field Distributions in Spin Glasses
- 11:20 – 11:40 R. Livi, University of Florence
The Role of Initial Conditions in the FPU Problem
- 11:40 – 12:00 J. Diaz-Herrera, Universidad Autonoma Metropolitana- Iztapalapa
Phase and Interfacial Behavior in Fluid Mixtures with Spherical Interactions
- 12:00 – 12:20 D. Mukamel, Weizmann Institute of Science
Statistical Mechanics of Systems with Long Range Interactions
- 12:20 – 1:40 LUNCH**
- 1:40 – 2:00 A. Giuliani, University of Rome 3
Periodic Ground States in Spin Systems with Long Range Competing Interactions
- 2:00 – 2:20 E. Carlen, Rutgers University
Droplet Minimizers of the Mesoscopic Free Energy of a Particle System with Kac Type Potentials
- 2:20 – 2:40 L. Koralov, University of Maryland
Mathematical Model for Polymers

2:40 – 3:00 T. Dorlas, Dublin Institute for Advanced Studies
Thermodynamic Limit of the Six-Vertex Model

3:00 – COFFEE AND DISCUSSIONS