

# GSNP Newsletter

## Important Deadlines

**GSNP Student Prize nominations 11/15/04**

**March meeting abstracts Wed. 12/1/04**

**GSNP Poster Gallery form deadline 2/7/05**

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## Letter from the GSNP Chair

Statistical and nonlinear physics continues to expand in exciting new directions. Our membership has grown accordingly, rising from 718 to 786 this year. The continued expansion of the group could lead to divisional status in the near future. This expansion is testimony to the exciting science being done by all of you, and its recognition by departments across the country. Please continue to encourage your colleagues and students to join the unit. This has a direct impact on the size of our representation in fellowships and at APS meetings, and our ability to engage in the activities outlined below.

The March Meeting continues to be our main annual event. Last year's meeting in Montreal set new attendance records, despite concerns about visas. Charlie Doering is Chairing the Program Committee for next year's meeting and has put together a strong

set of invited and focus sessions. I encourage you to plan to join us in Los Angeles and to submit your abstracts to the sorting categories that are listed below.

A new event debuted in Montreal, the GSNP Gallery of Nonlinear Images. Separate awards were presented for still images and videos, with three prizes and several honorable mentions in each category. The winning entries will be published in the journal *Chaos* this December and featured on a new web-site <http://chaos.aip.org/gallery/>. We hope that these accessible and enticing images will help interest the general public in the research performed by our members. Please consider submitting your own work to this year's competition.

This year we are launching a new initiative designed to highlight the talented graduate students in our field. Up to five students will receive cash awards and present their talks in a special Graduate Student Presentation Award Session at the March Meeting. One of these presentations will be singled out for an additional award after the session. Full details are given below, and I encourage you to nominate worthy students by the Nov. 15 deadline.

The Executive Committee is also working to expand our outreach efforts, and has broadened the mandate of the publication committee to include this role. We are kicking off this effort by developing a new website containing demos that illustrate one of the most accessible aspects of our field, *Chaos*. Please consider adding your animations or experiments to the list, which is being gathered by Walter Goldberg and Dan Lathrop. We also sponsored a fellowship that allowed Rob Semper to attend the Aspen Center for Physics' Workshop on Education and Outreach. Dr. Semper is Executive Associate Director of the Exploratorium and he and David Campbell are working to build on the Workshop by

developing a “demo cart” for use at science museums around the country.

I am sure that all of you are aware that next year is the World Year of Physics. Some of the invited and focus sessions at the March Meeting will tie into Einstein’s legacy and we encourage all of you to get involved in local and global activities that celebrate this event.

Let me conclude by thanking my predecessor, Bob Behringer, for his hard work as Chair, and his decision to continue his work on behalf of GSNP through new Outreach initiatives. I also want to thank Randy Kamien and Dan Lathrop who have just completed their terms as Members-at-Large. We are fortunate to have Dan staying on the Executive Committee in his new role of Secretary-Treasurer. Chairs come and go, but Secretary-Treasurers keep things going. We owe a special round of thanks to Jeffrey Urbach who has just finished his four-year stint in this role. Finally, a warm welcome to Laszlo Barabasi and Anna Lin who have joined us as Members-at-Large this year.

Mark Robbins, Chair

## Balloting for GSNP Officers

Officers of the Topical Group on Statistical and Nonlinear Physics are elected in the fall of each year with terms beginning in March of the following year. Voting instructions for the APS web-based voting will be emailed to all GSNP members. The duties and terms of service for these positions are spelled out in the Bylaws of the GSNP

(<http://www.aps.org/units/gsnp/bylaws.html>).

## GSNP Student Presentation Award

Faculty members are encouraged to nominate graduate students for a new award that will be presented at the 2005 March Meeting. Nominations should be sent by email to [GSNPaward@pha.jhu.edu](mailto:GSNPaward@pha.jhu.edu) by Nov. 15. They should include a nomination letter from the adviser (2 page max.), no more than one supporting letter, the nominee’s CV, and a contributed abstract that the nominee will present orally at the March Meeting. Acceptable formats are plain text, Word, postscript, dvi and pdf.

The Award Committee will select up to five GSNP Student Presentation Finalists who will each receive a cash award. They will present their work in a special session at the March Meeting and one will be selected for as the winner of the GSNP Student Presentation Award. All will be honored at the GSNP Business Meeting and Reception on the Tuesday evening of the meeting.

## GSNP Gallery of Statistical and Nonlinear Images

Following its successful debut at last year’s March meeting, we are continuing with a special judged poster session displaying research images. The winning images last year are to appear in the AIP journal Chaos (thanks to Dave Campbell). We encourage you and your students to enter a poster to be on display in this special gallery. Entry forms should be submitted by Feb. 7, 2004 and can be found at:

<http://www.aps.org/units/gsnp/gallery/index.cfm>.

# Minutes of 2004 GSNP Executive Committee Meeting

March 23, 2004 • Montreal, Canada

## *Attendance*

Guenter Ahlers, Albert Barabasi, Bob Behringer, David Campbell, Bulbul Chakradorty, Charles Doering, Walter Goldberg, Dan Lathrop, Herb Levine, John MacLebech, Mark Robbins, Josh Socolar, Jeff Urbach. Guests: Judy Franz, APS

## *Election results were announced:*

Vice Chair – **Herbert Levine** (UCSD)  
Member-at-Large: **Anna Lin** (Duke Univ.), **Albert Laszlo Barabasi** (Univ. of Notre Dame). There was a discussion of outreach including the “World Year of Physics 2005,” outreach efforts of speakers, and GSNP demonstrations. It was decided to sponsor a person to attend the Aspen outreach program. The fellowship committee report announced the new fellows, Eyink, Halsey, Yorke and Avraham. A discussion followed of the new Gallery of Statistics and Nonlinear images along with the new Student Speaker Prize.

## APS Fellows

Each year, the GSNP Fellowship Committee will review nominations for APS Fellows and make recommendations to the APS. The total number of APS Fellows who may be elected in a given year is limited to one-half of one percent of the total APS membership. Therefore, the selection process is quite competitive, and sponsors should be aware of this when preparing nominations.

Nominations may be made at any time during the year, but only those received by the deadline set by APS, currently April 2, will be considered for action in the same year.

Nomination forms, as well as tips on preparing an effective nomination, are available at

<http://www.aps.org/units/gsnp/nominate.html>

The nomination form was modified for 2001 so get a current version. Completed forms should be returned to the APS Fellowship Program Office. Nominations on which no favorable action is taken are generally reconsidered the following year. Sponsors may, however, resubmit the nomination with updated supporting material prior to the deadline for the following year.

In 2003, four candidates were recommended by GSNP and selected for Fellowship in the American Physical Society:

**Gregory L. Eyink**, The Johns Hopkins University. For his work in nonequilibrium statistical mechanics, in particular on the foundation of transport laws in chaotic dynamical systems, on field-theoretic methods in statistical hydrodynamics and on singularities and dissipative anomalies in fluid turbulence.

**Thomas C. Halsey**, ExxonMobil Research and Engineering. For theoretical studies of multifractality and diffusion-limited aggregation, Josephson junction arrays, electrorheological and dipolar fluids, and granular media.

**James A. Yorke**, The University of Maryland. For seminal contributions to the theory of chaotic dynamics.

**Daniel ben-Avraham**, Clarkson University. For contributions to statistical physics on the subjects of the kinetics of diffusion-limited reactions, diffusion and transport in disordered media, and non-equilibrium phase transitions.

## March Meeting Sorting Categories

The sorting categories for Statistical and Nonlinear Physics reflect the increasing breadth of GSNP interests.

### 12. Statistical and Nonlinear Physics

- 12.1 Low-Dimensional and Quantum Chaos
- 12.2 Noise and Stochastic Resonance
- 12.3 Pattern Formation & Spatio-Temporal Chaos
- 12.4 Coherent Spatial Structures: solitons, intrinsic localized modes, discrete breathers
- 12.5 Granular Media
- 12.6 Equilibrium Statistical Mechanics: fundamentals, exactly solvable models
- 12.7 Systems Far from Equilibrium
- 12.8 Networks and Complex Systems
- 12.9 Disordered nonlinear systems and glassy dynamics

#### *GSNP Special Focus Topics*

- 12.10.1 Friction, Fracture, and Deformation (DMP joint)
- 12.10.2 Methods of Statistical Physics in Population Dynamics & Epidemiology (DBP joint)
- 12.10.3 Biological Hydrodynamics (GSNP/DFD/DBP joint)
- 12.10.4 Transport and kinetics in biological systems (DBP joint)
- 12.10.5 Brownian motion & stochastic dynamics in the 100 years since Einstein (DBP joint)
- 12.10.6 Dynamics of granular gases and liquids (DFD joint)
- 12.10.7 Jamming
- 12.10.8 Structure, dynamics and resilience of complex networks
- 12.10.9 Non-equilibrium dynamics of adsorption, diffusion & reaction

## GSNP Events

Links to events of interest to GSNP members such as conferences, workshops, and summer schools are posted on the events page on the website,

<http://www.aps.org/units/gsnp/events.html>.

If you are organizing or know of an event that you think our members should know about, email the information to the secretary/treasurer, Dan Lathrop, at [dpl@complex.umd.edu](mailto:dpl@complex.umd.edu).

### APS March meeting

March 21-25, 2005, Los Angeles, CA

**Abstract Submission Deadline (5 pm EST) 12/1/04**

**Early registration deadline 1/14/05**  
(lowest fees)

**Receipt of post-deadline abstracts (5 pm EST) 2/7/05**

**Housing 2/18/05**

(APS hotel blocks released)

**Late registration deadline 2/18/05**

<http://www.aps.org/meet/MAR05>

### APS Division of Fluid Dynamics meeting

Nov. 21-23, 2004, Seattle, Washington

<http://depts.washington.edu/apsdfd04/index.html>

### Johannes M. Burgers Symposium of the Burgers Program for Fluid Dynamics

November 18, 2004, University of Maryland

<http://www.enme.umd.edu/burgers>

### Dynamics Days 2005

Jan. 7-10, 2005, Long Beach, CA

<http://www.physics.uci.edu/dynamicsdays2005>

### 92<sup>nd</sup> Statistical Mechanics conference

December 19-21, 2004, Rutgers University

<http://www.math.rutgers.edu/events/smm/index.html>

### 93<sup>rd</sup> Statistical Mechanics conference

May 15-17, 2005, Rutgers University

<http://www.math.rutgers.edu/events/smm/index.html>

## GSNP Executive Committee 2004-2005

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### **March Meeting Program Committee**

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A. Lin, M. Robbins

### **Fellowship Committee**

H. Levine (Chair), E. Bodenschatz, C.  
Doering, S. Redner

### **Nominating Committee**

B. Chakraborty (Chair), B. Ecke, K.  
Lindenberg, J. Socolar

### **Publications and Outreach Committee**

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