



GSNP Newsletter

Topical Group on Statistical and Nonlinear Physics

<http://units.aps.org/units/gsnp>

Letter from the Chair

GSNP turns 10 years old this year and its membership is growing steadily. With nearly 900 members, GSNP is today the largest of the APS Topical Groups, with ambitions to become a Division.

The group is very interdisciplinary, bringing together researchers working on a wide spectrum of nonlinear and nonequilibrium problems spanning many disciplines. It overlaps naturally with fluid dynamics, computational physics, biological physics, condensed matter physics and polymer physics. The field has its roots in equilibrium statistical physics, but has evolved to encompass and emphasize nonequilibrium and dynamical phenomena. It is a field in rapid evolution, with a constantly changing focus. An important mission of the Group has been to strengthen and highlight the connections between these disparate fields and topics.

All are invited to the GSNP Business Meeting
Tuesday, March 11
5:45 p.m. - 6:45 p.m.
Convention Center, Room 221
Refreshments Provided

Most of the group’s activities take place at the March Meeting, where every year GSNP sponsors many Focus Sessions and Invited Symposia, often in conjunction with other units (see p. 2 for this year’s list). I wish to thank our Vice Chair, Sid Redner, for a splendid job on the 2008 March Meeting Program Committee. There is also significant GSNP representation at the annual DFD November meeting.

In recent years GSNP has started exciting new activities at the March Meeting. The first is the “Gallery of Images” modeled after a similar exhibition started years ago by DFD. GSNP members are invited to submit a poster or video that provides striking, yet informative display of work in the area of statistical or nonlinear physics. All submitted entries are displayed at the March Meeting. Selected entries are published in the journal Chaos. Starting this year there is a cash prize for the winning entry from each category. A second GSNP-sponsored event is the Student Talk Award, given for the best graduate student talk in the field. Five students are selected each year from nominations submitted by GSNP members to give a presentation in a special GSNP Student Award session at the March Meeting. Cash prizes are awarded to the winner and to all the finalists. Finally, GSNP sponsors “Lunch with the Experts” sessions. The GSNP table was sold out last year and we are confident this year’s session will be equally successful.

The Group also has a deep interest in education. Last year, GSNP and the Forum on Education jointly held a symposium on the teaching of non-equilibrium statistical physics, a subject that is not systematically taught in graduate schools. The Symposium was very well attended and generated much discussion.

Finally, I would like to solicit your comments and suggestions and your involvement in the GSNP activities described above and inside this newsletter. Also, I urge you to send our secretary/treasurer Arshad Kudrolli (akudrolli@clarku.edu) announcements of relevant meetings to be posted on the GSNP website.

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M. Cristina Marchetti, GSNP Chair

2008 Student Speaker Award Finalists

Every year the Group for Statistical and Nonlinear Physics sponsors a Student Speaker Award at the March Meeting of the American Physical Society.

From the nominated talks GSPNP chooses 5 student finalists to speak in a special award session. A committee selects a winner at the meeting. In 2008 the winner will receive a cash prize of \$1000 and each finalist will receive \$200.00.

The five finalists this year are:

- Sharon Gerbode, Cornell University
- Luca Giomi, Syracuse University
- Carl Modes, University of Pennsylvania
- Andrew Missel, UIUC
- Matthew Paoletti, University of Maryland

They will speak at the **Student Prize Section H39 on Tuesday, March 11, 8:00AM**, 231 MCC.

Congratulations and good luck to all the finalists!

2008 Gallery of Statistical & Nonlinear Images

The GSPNP Gallery of Images is now in its fifth year. All submitted posters and video entries **will be displayed on Monday, Tuesday and Wednesday in Exhibit Hall A, MCC**. They can also be viewed at <http://physics.clarku.edu/~akudrolli/gni2008/>. A committee will select the top three images and an overall winner from each category (posters and videos). The winners will receive a \$500 cash award. All selected images will be published, with a brief commentary in a special issue of the journal Chaos.

Student Lunch with the Experts

Wednesday, March 12, 1:00 pm– 2:30 pm MCC

GSPNP is sponsoring the following topic: *What's Up with Correlated Percolation?* Jennifer Schwarz, Syracuse University

Students can sign up to enjoy a complimentary box-lunch while participating in an informal discussion with Prof. Schwarz. Sign-up will begin on Monday, March 10 at the APS registration desk. Attendance is limited to eight students per topic.

GSPNP - Sponsored Focus Sessions in New Orleans

A39 Elasticity and Geometry of Thin Objects (GSPNP) MCC 231, Monday, 8:00am–11:00am (Boudaoud)

B39 Collective Dynamics of Self-driven Particles (DFD/GSPNP) MCC 231, Monday, 11:15am–2:15pm (Marchetti)

D8 Granular Flows (DFD/GSPNP) MCC RO6, Monday, 2:30pm–5:30pm (Shattuck)

D39 Econophysics (GSPNP) MCC 231, Monday, 2:30pm–5:30pm (Stanley)

J39 Friction and Contact (DMP/GSPNP) MCC 231, Tuesday, 11:15am–2:15pm (Fineberg)

L39 Deformation and Fracture (DMP/GSPNP) MCC 231, Tuesday, 2:30pm–5:30pm (Duxbury)

Q39 Models and Materials Far from Equilibrium (GSPNP) MCC 231, Wednesday, 11:15am–2:15pm (van Wijland)

U18 Polymer Collapse and Protein Folding (GSPNP/DPOLY) MCC 210, Thursday, 8:00am–11:00am (Shell)

U39 Structure and Dynamics of Complex Networks (GSPNP) MCC 231, Thursday, 8:00am–11:00am (Barabasi)

VI17 Nonequilibrium Thermodynamics of Small Systems (DBP/GSPNP) MCC 209, Thursday, 11:15am–2:15pm (Van den Broeck)

V39 Jamming (GSPNP) MCC 231, Thursday, 11:15am– 2:15pm (Lois)

W40 Networks, regulations and pathways in cell biology (DBP/GSPNP) MCC 232, Thursday, 2:30pm–5:30pm (Almaas)

GSPNP - Sponsored Invited Symposia in New Orleans

D7 Locomotion in Complex Fluids (GSPNP/DBP/DFD), Monday 3/10 2:30pm, MCC RO5 (Lauga, Fu, Fauci, Hu, Goldman)

P4 Fluctuations and Rare Events in Physical, Chemical, and Biological Systems, Wednesday, 8am, MCC 206 (Kamenev, Jhe, Chan, Meerson, Newman)

S3 Aging, Shear and Rejuvenation: Mechanics of Glasses, Colloids and Granular Matter, Wednesday, 2:30pm, MCC RO2 - RO3 (Liu, Falk, Weeks, Rottler, Daniels)

V4 Minisymposium on Fluctuating Fronts: Beyond a Popular Mean Field Theory, Thursday, 1:30pm, MCC - 206 (Ebert, Douglas)

New 2008 APS Fellows

Each year, the GSNP Fellowship Committee reviews nominations for APS Fellows and makes 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. In 2008, 5 candidates were recommended by GSNP and selected for Fellowship in the American Physical Society:

Mehran Kardar *MIT*

Citation: *For pioneering work in a broad range of topics in statistical physics, including the dynamics of growing interfaces, directed polymers in random media, tethered surfaces, stability of charged polymers and, more recently, biophysical systems.*

Alain Karma *Northeastern University*

Citation: *For innovative ideas and results in the study of non-equilibrium spatially-extended processes, especially the phase-field method for solidification and the role of restitution in the excitable dynamics of cardiac tissue.*

Mark Newman *University of Michigan*

Citation: *For pioneering work on the statistical physics of complex systems, especially the theory and characterization of networks.*

Wim Van Saarloos *University of Leiden*

Citation: *For his seminal contributions to the understanding of the complex Ginzburg-Landau equation, spatiotemporal chaos, pattern formation, and front propagation.*

Annette Zippelius *Universität Göttingen*

Citation: *For her many deep, innovative and lasting contributions to statistical physics, especially in the areas of spin glasses, neural networks, vulcanized matter and granular media.*

Please visit the GSNP Events page at

<http://units.aps.org/units/gsnp/events.cfm>

For a list of upcoming events and conferences of interest to the statistical and nonlinear physics community.

2009 Fellow Nominations

Nominators must ensure that the case they prepare for the Fellowship Committee is well documented. Information such as complete publication list, lists of invited talks, awards, committee service, and organization of conferences is very helpful. Reprints of papers are generally not useful. A detailed statement, discussing the candidate's "exceptional contributions" can aid the committee considerably. In general, the Fellowship Committee looks for sustained contributions to the field over a period of time rather than a single, albeit brilliant, piece of research. Supporting letters evaluating the candidate's work are particularly useful.

Nominations may be made at any time during the year, but only those received by the GSNP deadline, currently April 4, 2008 will be considered for action in the same year. Nominations are submitted online at <http://www.aps.org/programs/honors/fellowships/>.

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.

Special thanks to Beate Schmittmann for chairing the 2007-2008 Fellowship Committee.

GSNP Elections

New GSNP officers are elected in the fall of each year, with terms beginning in March of the following year. 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.cfm>). Balloting is done by e-mail. The results of the 2008 elections are just in.

Congratulations to the newly elected officers of GSNP:

Vice-Chair: Thomas Halsey (Exxon)

Members-at-large: Karen Daniels (North Carolina State) and Wolfgang Losert (Maryland).

GSNP Executive Committee 2007—2008

Chair:

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2008 March Meeting Program Committee

Sid Redner

2007-2008 Fellowship Committee

Beate Schmittmann

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