



GSNP Newsletter

Topical Group on Statistical and Nonlinear Physics

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

Letter from the Chair

I hope everybody is having a good 2014 so far, and I look forward to seeing many of you at the March Meeting in Denver. At this point I'm finishing up my year as GSNP Chair, having served the prior two years as Vice Chair and Chair Elect. At this point I feel qualified to explain what your annual dues to GSNP buys you, in addition to this yearly electronic newsletter.

GSNP's biggest activity by far is planning for our areas of physics at the March Meeting. This year's planning was led by GSNP Chair Elect Bulbul Chakraborty. Statistical and Nonlinear Physics bridges a variety of areas: soft matter, statistical physics, nonlinear dynamics, biological physics, and has connections with many other areas of science. Accordingly, GSNP members proposed a variety of fascinating focus sessions and invited speakers, and Bulbul worked hard to organize all of this. Here's a list of the invited sessions we are co-sponsoring this year:

- B12: Exploring the dynamics of evolution and ecology of biological systems
- D14: Algorithms from statistical physics and the physics of algorithms
- G14: Toys and Mechanisms
- M40: Onsager / Lilienfeld / Undergraduate Institution / Apker Prize Session
- Q12: Irreversibility and entropy production in biological dynamics
- W14: Patterns in polymers: Elasticity, fluids, and surfaces
- Y12: Novel modeling approaches to cell motility
- Z12: Application of synchronization in the micro and macro world

Additionally, each year at the March Meeting, we host a Student Speaker Award Session featuring five student finalists (session D17, Monday 2:30pm, room 402, more details below). These are always outstanding talks and represent the broad variety of work being done by GSNP student members, and I urge you to attend their talks.

Next year's March Meeting GSNP organization will be done by Katja Lindenberg. She'll send out information soon about planning for the 2015 meeting, and accordingly I encourage everybody to think of potential topics for sessions for next year. We rely on your high-quality proposals for these topics.

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In addition to the organizational aspects of the March Meeting, there's also the social aspects. You are all invited to the GSNP business meeting in Denver, Tuesday evening 5:45 – 6:45 pm in room 401 of the Conference Center, where as always we will provide tasty refreshments.

At the business meeting, we will celebrate the five newest APS fellows coming from GSNP (listed below). The number of APS fellows that GSNP can sponsor is directly linked to our membership size, which has been around 2.0% of the APS total membership over the past few years (we're one of the largest topical groups). This is another way that your GSNP membership is important: in addition to the honor the individual fellows have earned, this is a public way to recognize the outstanding work done in our various research areas. In a similar fashion to the APS sessions which are proposed by members, APS fellows need to be nominated by members. Information about the nominations process for next year is below; the deadline is May 1.

GSNP is also soliciting proposals for conference support for conferences and workshops on GSNP-related research topics. The deadline for the application is March 1, 2014, so submit your applications as soon as possible. (See p. 2 for application details.)

Any comments or suggestions for the GSNP are most welcome, and both

Bulbul Chakraborty (bulbul@brandeis) and I (erweeks@emory.edu) would be happy to hear from you about new ideas you may have for the GSNP. Also, please send announcements of relevant meetings to our secretary/treasurer Robin Selinger (rselinge@kent.edu); we will post events of GSNP interest on our website and distribute via email to our members.

Thanks are due to Michael Falk and Chris Santangelo, GSNP members-at-large whose terms are ending.

Finally, a special thanks to our outgoing GSNP Past Chair Sue Coppersmith! She did great work organizing the 2012 March Meeting GSNP sessions, and she has contributed behind the scenes in many of the discussions about the APS and Soft Matter (see below).

Best wishes,

--Eric Weeks

Student Speaker Award

GSNP sponsors a Student Speaker Award at the APS March Meeting. From 19 nominations, the GSNP chose 5 finalists to speak in the award session. Members of the GSNP executive committee select a winner at the meeting. The winner will receive a cash prize of \$1000 and each finalist receives \$300. In addition, March meeting expenses up to \$500 will be covered for each finalist. This year's finalists are:

- Diana Fusco (Duke University)
- Mohammad Khalid Jawed (MIT)
- Alex Lang (Boston University)
- Sumantra Sarkar (Brandeis University)
- Jesse Silverberg (Cornell University)

Hear them at the **Student Prize Session D17, Monday 2:30pm**, in room **402** of the Convention Center. Congratulations and good luck to all of the finalists!

Student Lunch with the Experts

Student Lunch with the Experts will be held Tuesday, March 4, 12:30 – 2 pm at the Convention Center. GSNP is sponsoring two tables: Corey O'Hern, Yale University, will discuss "Granular Materials as Materials," and Oleg Lavrentovich, Kent State University, will discuss "Liquid Crystals: New Frontiers." Students can sign up to join one of the experts and enjoy a complimentary box-lunch while participating in an informal discussion. Sign-up will open Monday, March 3 near the APS Registration Desk. Attendance is limited to eight students per table. A complete list of experts/topics is available at <http://www.aps.org/meetings/march/events/experts.cfm>.

Soft Matter update

As was announced via email a few months ago, the APS convened a working group on soft matter to decide where soft matter best fits into the APS structure. This working group included representatives from all APS units that had any interest in soft matter, including GSNP. The consensus was to start a new topical group, GSOF, to focus on soft matter. Sharon Glotzer (University of Michigan) is heading the organizing committee for GSOF. The first step is to have 200 people sign a petition expressing interest, and at some point within the next few weeks we will likely send an email about this to the GSNP members (and members of other relevant APS units) asking people to sign up. The second step is to have formation of the

new unit approved by the APS Council, the governing body of the APS, which could be done as early as April.

Conference/Workshop Support

GSNP announces a grant opportunity of up to \$1500 per award to support travel costs of conference and workshop attendees. The organizer of the conference/ workshop who submits the grant application must be a primary organizer and GSNP member by the due date of the application, March 1, 2014. Awards will be announced shortly after the March Meeting 2014. GSNP funding should be acknowledged on the conference/workshop website and speaker/participant invitations. See <http://www.aps.org/units/gsnp/support/index.cfm> for complete application details. Email completed applications as a single PDF to gsnpmail@gmail.com.

GSNP Fall 2013 Election Results

Congratulations to the newly elected officers of GSNP!

Vice-Chair:

Adilson Motter (Northwestern University)

Members-At-Large:

Michelle Girvan (University of Maryland/College Park)

Ben Vollmayr-Lee (Bucknell University)

New 2013 APS Fellows in the GSNP

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. In 2013, five candidates were recommended by GSNP and selected for Fellowship in the American Physical Society:

Luis A. Amaral, Northwestern University

For seminal advances in the characterization and modeling of complex systems, especially the proposal and development of cartographic methods for the representation of large complex networks.

Karin Dahmen, University of Illinois – Urbana/Champaign
For establishing and exploring the deep connections between non-equilibrium phase transitions and avalanche phenomena in diverse fields encompassing materials, geophysics and neuroscience.

Adilson Motter, Northwestern University

For his contributions to the foundations of chaos and the

study of nonlinear dynamics in complex networks, including the discovery of synthetic rescues and pioneering work on network synchronization phenomena, cascading failures, and the control of nonlinear network dynamics.

Michael Schatz, Georgia Tech

For pioneering and creative experimental contributions to the characterization and control of complex fluid and pattern formation phenomena.

Uwe Täuber, Virginia Tech

For seminal and sustained contributions to the understanding of non-equilibrium, universal properties of reaction diffusion processes and driven diffusive systems, with applications in materials science and biological systems.

2014 Fellow Nominations

Nominators must ensure that the case they prepare for the Fellowship Committee is well-documented, following the guidelines and requirements outlined at

<http://aps.org/programs/honors/fellowships/nominations.cfm>.

The Fellowship Committee generally looks for sustained contributions to the field over a period of time rather than a single, even brilliant, piece of research. Supporting letters that provide specific details about the candidate's work, its impact, and the breadth of her/his contributions are particularly useful. Nominations may be made at any time during the year, but only those received by the GSNP deadline, currently May 1, 2014, are 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 Katja Lindenberg for chairing the 2013 Fellowship Committee.

Visit the GSNP Meetings page at <http://www.aps.org/units/gsnp/meetings/index.cfm>. This webpage contains links to upcoming events and conferences of interest to the statistical and nonlinear physics community.

Join the GSNP discussion group at LinkedIn here: <http://www.linkedin.com/groups?gid=5105028>

Considering that GSNP members analyze the properties of social networks, it's time for us to have one of our own. This LinkedIn group allows easy one-to-many communication among members of GSNP, e.g. to announce an upcoming event, post a link to a video of a new experiment or online talk, or just discuss research issues. The group currently has 283 members and is growing. All GSNP members are welcome to come and join the conversation.

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