
Instrumentation and Measurement Science

Topical Group of the American Physical Society

GIMS Newsletter 45, Winter 2017

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GIMS Service to Members

GIMS provides services to its membership that include:

- A path to APS fellowship based on work in instrumentation and measurement science
- The Keithley Award for instrumentation
- Focus sessions at the March Meeting
- Organization of regular March meeting sessions.
- Student Travel Grants
- A voice in governance of the APS

These efforts can only be maintained through the efforts of members who volunteer to serve as officers and committee members. We thank all present and past officers and committee members.

Please consider serving as an officer or committee member.

Please bring GIMS to the attention of your colleagues and encourage them to join – particularly younger colleagues. We need constant infusion of young physicists to maintain the organization.

GIMS Elections

Current officers are listed at

<https://www.aps.org/units/gims/governance/officers/>

along with contact information. Each year GIMS holds an election to fill vacant offices in accordance with the GIMS Bylaws; see

www.aps.org/units/gims/governance/bylaws.cfm

In general, each year we need to fill slots for two executive committee members at large and the vice-chair, which is the entry position for the vice-chair, chair-elect, chair, past-chair sequence. Every third year the secretary-treasurer position must be filled.

Our next election will take place in January 2017.

Anyone interested in helping with GIMS governance as an officer, executive committee member or as a member of any of the appointed committees (Keithley Award, Fellowship, Nomination) should contact the GIMS Secretary-Treasurer. Volunteers are welcome at any time.

GIMS Business Meeting

Please consider attending our annual business meeting. We need volunteers to staff committees (Nomination, Fellowship, Keithley) that will be formed at the business meeting. The business meeting will be held on Tuesday evening during the March 2017 Meeting: Session J36, Room 299, at 1745. Please confirm on the meeting schedule.

GIMS Statistics

For more detail see

www.aps.org/membership/units/statistics.cfm

APS Membership: 53,096

GIMS Membership: 562 (~1.06% of APS membership)

This has changed little over the past 5 years.

GIMS Regular Fellows: 60 (~10% of GIMS membership)

GIMS Senior Fellows: 19 (~ 3% of GIMS membership)

GIMS Life Fellows: 14 (~ 2% of GIMS membership)

GIMS Treasury

Contact Secretary-Treasurer for more detail

- Current Balance: \$74,619
- Past year (2016) expenses: \$1,858 through Nov.

APS Keithley Award

The Keithley Award is presented annually to recognize physicists who have been instrumental in the development of measurement techniques or equipment that have impact on the physics community by providing better measurements. Details of the award may be found at

www.aps.org/programs/honors/awards/keithley.cfm .

Nominations for the award are submitted in the early spring to summer, a year in advance of the presentation of the award at a March Meeting; nominations close in July. Check the website for details.

If you are considering submitting a nomination, now is the time to begin preparation.

The recipient for 2017 is shown below.

Recipient: 2017



Peter Denes

Lawrence Berkeley National Laboratory

“For his pioneering advances in detectors for electron and X-ray microscopy, especially the development of complementary metal oxide semiconductor detectors for electron microscopy, and column parallel readout charge coupled devices for ptychographic X-ray microscope.”

APS/GIMS Fellows

GIMS can nominate APS members to APS Fellowship. GIMS has a committee for fellowship nominations that selects nominees from proposals made by GIMS members. GIMS members may propose APS members for fellowship through GIMS; the nomination process is described at

www.aps.org/programs/honors/fellowships/nominations.cfm . Fellowship nominations close in June each year.

If you are considering submitting a nomination, now is the time to begin preparation.

Fellows elected in 2016 are listed below.

2016

Bell, L. Douglas

California Institute of Technology

Citation: For the invention of ballistic electron emission microscopy, which is used worldwide for nanometer resolution imaging of device interface electronic structure, and for contributions to understanding electron transport.

Glebov, Vladimir

Laboratory for Laser Energetics

Citation: For the development and implementation of advanced neutron-based diagnostic systems on the National Ignition Facility and the OMEGA laser.

Werner, James H.

Los Alamos National Laboratory

Citation: For pioneering contributions to single molecule tracking, optical microscopy, and the development of fluorescent probes for biological imaging and sensing.

March 2017 Meeting GIMS Sessions

Our thanks to the organizers of these sessions.

The Keithley Award Session will be K21 at 0800 on Wednesday March 15:

- 0800: K21.00001: Observing Fast Fluctuations in Condensed Matter: X-Ray Photon Correlation Spectroscopy (XPCS) Performed with the Fast CCD (FCCD)
Invited Speaker: Alec Sandy
- 0836: K21.00002: You can't measure what you can't see -- detectors for microscopies
Invited Speaker: Peter Denes
- 0912 K21.00003: Ultra-high Resolution Coherent X-ray Imaging of Nano-Materials
Invited Speaker: David Shapiro
- 0948 K21.00004: Fast x-ray and electron detectors at SLAC user facilities using CCD and CMOS technology.
Invited Speaker: Gabriella Carini
- 1024 K21.00005: New modes of electron microscopy for materials science enabled by fast direct electron detectors
Invited Speaker: Andrew Minor

For details see

<http://meetings.aps.org/Meeting/MAR17/Session/K21>

The GIMS focus and regular sessions are

All	Tuesday	Wednesday	Thursday
Session E			
E36. Focus Advances in Scanned Probe Microscopy I			
Session F			
F36. Neutron, X-Rays and Scattering			
Session H			
H36. Focus Advances in Scanned Probe Microscopy II			
Session L			
L36. Instrumentation and Measurements I			
Session P			
P36. Instrumentation and Measurements II			
Session R			
R36. Focus Optical Spectroscopic Measurements of 2D Materials			

For details see

<http://meetings.aps.org/Meeting/MAR17/SessionIndex2?SponsorID=GIMS> .

March 2018 Meeting Planning

If any GIMS member would like to propose a focus session for the March 2018 meeting, they should contact the Secretary-Treasurer and/or attend the GIMS Business Meeting. The business meeting is normally held on the Tuesday of the March Meeting. Check the March meeting schedule for details.

Student Travel Grants

GIMS is able to provide a limited number of travel grants for students who are attending the March Meeting to present a paper in one of the GIMS sponsored sessions.

The process for awarding a grant is currently as follows:

1. The applicant must be an active student at an accredited degree granting institution.
2. The applicant must be the first author of a paper in a GIMS sponsored session at the March meeting – focus or regular session.
3. Applicants must be GIMS members.
4. Awards are capped at \$500; this covers travel, accommodation and food. Awards do not cover registration fees.
5. The applicant may apply for the grant by sending a package consisting of the following items to the GIMS Secretary-Treasurer via email:
 - a. An application letter that provides the (a) paper name, (b) abstract, (c) log number for the online submission, (d) sorting category, (e) a description of the applicant's role(s) in the paper, (f) full contact information for the student (Name, Institution, Address, phone, email) and (g) an itemized estimate of the expenses the applicant plans to submit if awarded a grant.
 - b. A copy of the applicant's CV; this should include other publications.
 - c. A letter of recommendation from the applicant's faculty advisor -- this may be sent separately.
 - d. A copy of the paper being presented. This may be only the abstract if that is all that is ready. However, a full paper provides better information upon which to base an award decision than an abstract alone.
6. Deadline for application two weeks after the sorting session for the March Meeting which is normally held in early December...
7. Evaluation of the applications will take place by email, by the GIMS executive committee.
8. The selection of awardees will be based on the quality of the paper and the applicant's CV and recommendation. Incomplete applications will not be considered.
9. The selection(s) will be announced six weeks after the paper assignments to sessions have been made available to the GIMS Secretary-Treasurer.
10. Awardee sends receipts and a completed APS travel and expense report form to GIMS Secretary-Treasurer after the meeting – form is available at www.aps.org/about/governance/committees/travel.cfm
11. Secretary-Treasurer submits expenses to APS and requests that the expense check be sent directly to the awardee. The awardee should allow at least 6 weeks after the receipt of the expense form by the Secretary-Treasurer for receipt of the check.

GIMS Governance

The most up information for GIMS officers may be found at www.aps.org/units/gims/governance/officers

Notes & Disclaimer

The APS Topical Group for Instrument and Measurement Science (GIMS) was formed in 1984 to encourage precision in measurements, to encourage development of instrument and measurement science, to provide a forum for discussions of these topics, and to provide professional recognition of the importance of instrument and measurement science.

The articles in this issue represent the views of the GIMS publication committee and are not necessarily those of individual GIMS members or the APS.

This newsletter was edited by James R. Matey, Secretary-Treasurer, with input from the Executive Committee.

Any questions, comments or corrections regarding the newsletter should be directed to the GIMS Secretary-Treasurer. Contact information for GIMS officers is at www.aps.org/units/gims/governance/officers

Diversity Statement

With respect to the nominations mentioned in this newsletter, it is important to remember the membership of APS is diverse and global, so officers, committee members, Prize and Award winners as well as Fellows of the APS should reflect that diversity. Nominations of women, members of underrepresented minority groups, and scientists from outside the United States are especially encouraged.