

Topical Group on Magnetism and its Applications

units.aps.org/units/gmag/

Note from the Chair

Dear GMAG Member,

We are looking forward to a very exciting March Meeting in Denver from March 3 – 7. Yves Idzerda and his team of GMAG focus topic leaders and sorters have assembled a full week of interesting sessions.

Among the activities at the March Meeting, I would like to call your attention to the GMAG Business Meeting on Tuesday March 4th, 2014, (5:45pm-6:45pm Session K4, Room 110/112 at the Denver Convention Center). At this meeting we will welcome four new GMAG-sponsored APS Fellows and will also honor the student dissertation and travel award winners.

Since our last newsletter, GMAG has funded an outreach proposal submitted by the National High Magnetic Field Laboratory (description below). Please find instructions below for submitting future proposals.

Finally, please note the various deadlines below for APS Fellowship nominations as well as prizes and awards. In particular, the deadline for Fellowship nominations sponsored by GMAG is June 1.

-Mark Stiles, GMAG Chair

Election of GMAG Officers for 2014-2015

The GMAG election ballot closed on February 9, and we are very pleased to announce that the newly elected GMAG Executive Committee members are:

Vice Chair:

Suzanne G.E. te Velthuis, Argonne National Laboratory

Members at Large:

John Cumings, University of Maryland

Jonathan Friedman, Amherst College

Secretary/Treasurer:

Tiffany Santos, HGST

Congratulations! We are grateful for their willingness to serve the magnetism community in the coming years. Their terms will start after the March Meeting. We thank the nominating committee, William Ratcliff (Chair), Stephane Mangin, Yumi Ijiri, and Craig Fennie for developing a strong slate of candidates. We would also like to thank outgoing Executive Committee members, including Past Chair Paul Crowell, Members-at-Large Kristen Buchanan and Olle Heinonen, and Secretary/Treasurer Shireen Adenwalla.

GMAG Sponsored APS Fellows

In 2013, from nominations from the magnetism community, GMAG identified four APS members for nomination to

be Fellows of the APS. We were very pleased that all four were approved by the APS General Fellowship Committee. The new GMAG APS Fellows, and their citations, are listed below.

Dmitry Garanin, Lehman College

Citation: For his theoretical work that shaped research on molecular magnets and helped to develop a deep understanding of their magnetic properties.

J. Ping Liu, University of Texas

Citation: For pioneering work in research on advanced permanent-magnet materials, including innovative work on bottom-up approaches to fabrication of nanocomposite magnets with reduced rare-earth content via novel techniques.

Josep Nogues, Univ. Autònoma de Barcelona

Citation: For his significant contributions to the understanding and development of exchange bias in thin films, nanostructures, and nanoparticles.

Valentyn Novosad, Argonne National Laboratory

Citation: For creative contributions to the fundamental understanding of the physics of nanomagnets, emphasizing magnetization reversal mechanisms, coupling effects, and dynamics of geometrically confined spin vortices.

GMAG Fellowship Selection in 2014

Please nominate deserving candidates for APS Fellowship. The deadline for nominations through GMAG is June 1, 2014. The link for submitting nominations is provided at the end of this newsletter.

GMAG Dissertation Awardees 2014

In order to encourage students working in magnetism, every year GMAG sponsors Outstanding Dissertation in Magnetism awards. These awards recognize students who have conducted outstanding research leading to their dissertation and consist of an invited talk in an appropriate session at the APS March Meeting, a \$500 prize to the student, and up to \$250 toward his/her travel expenses to the APS March Meeting. The award winners this year are listed below, along with their invited talk titles and session.

Radhika Barua, Northeastern University

Pathways for tailoring the magnetostructural behavior of FeRh-based systems (Z7.00001)

Chetan Dital, Boston College

Electronic Phase Separation and Magnetic Phase Behavior in the Ru-doped Spin-Orbit Mott Insulator Sr₃Ir₂O₇ (A4.00007)

The deadline for nominations for Dissertation Awards to be made at the 2015 March Meeting is October 18, 2014. See the GMAG website in the upcoming months for instructions.

GMAG Student Travel Awardees 2014

To increase student participation and involvement in activities essential to GMAG and APS as a whole, GMAG sponsors ten Student Travel Awards for the March Meeting. The award consists of \$250 in travel assistance to attend the meeting. The student is expected to attend the GMAG business meeting and serve one shift at the “Contact Congress” booth to support the APS outreach for congressional support for scientific research. This year’s award winners are:

Ali C. Basaran, University of California, San Diego
Alun Biffin, University of Oxford
Michelle Elizabeth Jamer, Northeastern University
Se Kwon Kim, Johns Hopkins University
Xiaohui Liu, University of Nebraska-Lincoln
Steven A. Moore, Temple University
Cuneyt Sahin, University of Iowa
Simranjeet Singh, University of Central Florida
Sergei Wallace, University of Alabama
Seonghoon Woo, Massachusetts Institute of Technology

March Meeting GMAG Program

GMAG is sponsoring or co-sponsoring approximately 65 contributed sessions covering 8 different focus topics (for details on the focus topics see the summer GMAG newsletter at www.aps.org/units/gmag/newsletters). We are also sponsoring or co-sponsoring 7 symposia, including:

- *Graphene Spintronics and Magnetism* (with DCMP)
Session D40 Room: Mile High Ballroom 2B-3B
- *New Magnetoresistance in Metal/Magnetic Insulator Heterostructures*
Session F40 Room: Mile High Ballroom 2B-3B
- *Artificial Spin Ice and Artificial Frustrated Systems: Designing Topology, Controlling Frustration, Engineering Emergence* (with DCMP)
Session S39 Room: Mile High Ballroom 2A-3A
- *Spin Current and Magnetization Dynamics--Pure Spin Current Generation and Transport*
Session S40 Room: Mile High Ballroom 2B-3B
- *Single Molecule Magnets*
Session T48 Room: Mile High Ballroom 1A-1B
- *Exotic Phase Transitions in 5d Compounds* (with DCMP)
Session W48 Room: Mile High Ballroom 1A-1B
- *Spin Transport in Novel 2d Electronic Systems* (with DCMP)
Session Y48 Room: Mile High Ballroom 1A-1B

GMAG Business Meeting

The GMAG annual business meeting (Session K4 in the program) will be held on Tuesday, March 4th, at 5:45 PM in Room 112/110. Please join us for the introduction of new GMAG fellows and student award winners!

Thanks to GMAG Focus Topic Organizers:

We also thank all of the focus topic organizers who contributed to the success of the March Meeting Program:

10.1.1 *Magnetic Nanostructures: Materials and Phenomena*
Kristen Buchanan, Colorado State University
Kai Liu, University of California - Davis
Tom Silva, NIST, Boulder

10.1.2 *Emergent Properties in Bulk Complex Oxides*
Hans Christen, Oak Ridge National Laboratories
Shinichiro Seki, University of Tokyo

10.1.3 *Magnetic Oxide Thin Films and Heterostructures*
Christian Binek, University of Nebraska-Lincoln
John Freeland, Argonne National Laboratories
Brian Kirby, NIST - Gaithersburg

10.1.4 *Spin Transport & Magnetization Dynamics in Metal Based Systems*
Olof “Charlie” Karis, Uppsala Universitet
Leszek Malkinski, University of New Orleans
Taku Suzuki, National Institute for Materials Science

10.1.5 *Spin Dependent Phenomena in Semiconductors*
Hanan Dery, University of Rochester
Aubrey Hanbicki, Naval Research Laboratory
Michael Oestreich, Gottfried Wilhelm Leibniz Universität

10.1.6 *Frustrated Magnetism*
Cristian Batista, Los Alamos National Laboratory
Collin Broholm, Johns Hopkins University
Chris Wiebe, University of Winnipeg, Canada

10.1.7 *Spin Dependent Physics in Carbon Based Materials*
Berd Beschoten, Aachen University
Roland Kawakami, University of California – Riverside
Eli Rotenberg, Lawrence Berkeley National Laboratories

10.1.8 *Low-Dimensional and Molecular Magnetism*
Enrique del Barco, University of Central Florida
Paul Goddard, Warwick University, Physics
Stephen Hill, Florida State University

Thanks to GMAG sorters

Thanks to everyone who participated in the abstract sorting meeting at the American Center for Physics on December 2: Kai Liu, Brian Kirby, Olof “Charlie” Karis, Aubrey Hanbicki, Collin Broholm, Roland Kawakami, Stephen Hill, Mark Stiles, Johnathan Sun, Sujoy Roy, Konrad Bussmann, Yves Idzerda, Enrique Cobas, Connie Li, Kelly Reidy, and Oleg Tchernyshyov.

Nominations for APS Prizes and Awards

APS prize descriptions and nomination deadlines appear at <http://www.aps.org/praw/>. Several prizes of interest to the GMAG membership and the corresponding deadlines are:

APS Fellowship GMAG Deadline is (June 1)
See <http://www.aps.org/units/gmag/fellowship/index.cfm>. If the nominee is a member of the GMAG Executive Committee, please make the nomination to another Unit of the APS or defer the nomination until his or her term has finished.

Oliver E. Buckley Condensed Matter Prize (July 1)
To recognize and encourage outstanding theoretical or experimental contributions to condensed matter physics.

Lars Onsager Prize (July 1)
To recognize outstanding research in theoretical statistical physics, including the quantum fluids.

James C. McGroddy Prize for New Materials (July 1)

To recognize and encourage outstanding achievement in the science and application of new materials. This shall include the discovery of new classes of materials, the observation of novel phenomena in known materials leading to both fundamentally new applications and scientific insights, and shall also include theoretical and experimental work contributing significantly to the understanding of such phenomena.

Frank Isakson Prize for Optical Effects in Solids (July 1, 2015 – given every other year)

To recognize outstanding optical research that leads to breakthroughs in the condensed matter sciences.

Prize for a Faculty Member for Research in an Undergraduate Institution (July 1)

To honor a physicist whose research in an undergraduate setting has achieved wide recognition and contributed significantly to physics and who has contributed substantially to the professional development of undergraduate physics students.

Request for Magnetism Outreach Proposals

The topical group on Magnetism (GMAG) invites proposals directed towards educating nonscientists and the general public about the role of magnetism. Funds (up to \$5000 per project, although larger proposals may be considered) are available to cover supplies and expenses associated with activities that aim to educate non-scientists about magnetism and its applications. These grants are to foster new activities and not meant to support ongoing programs. Examples of outreach activities include (but are NOT limited to) the development of magnetism kits that may be used at elementary schools and/or at museums and other public places, the development of a high school lab on magnetism, or the production of a video on magnetism that would appeal to the general public. Preference will be given to innovative activities that will be documented so that they can be reproduced elsewhere. GMAG will disseminate the outcome of the activities to the GMAG membership through the GMAG Newsletter and to the broader magnetism community through the GMAG website. The proposers are encouraged to consider alternate avenues for dissemination, this should include presentation of the results at an APS meeting.

The GMAG Executive Board will review proposals on an ongoing basis. Although partnership with a GMAG member is encouraged, all applications for projects related to outreach in magnetism will be considered. The GMAG executive board can assist in identifying potential partners for outreach proposals submitted by non-members.

Application Process

To apply for these funds, please submit the following information as one PDF file to the GMAG Chair (gmagchair@aps.org):

- Cover sheet clearly stating the name, address, phone number, and email of the main contact person for your application. Please include the name of your program, and, if affiliated with an institution, the department and institution you represent.
- One page CV for main contact person.
- Narrative description (no more than two pages) of your

program. Please include a description of the proposed activity or activities, the anticipated impact and the process of documentation to enable reproduction of the activity, details of other financial support (if any), and description of personnel working on the program (instructional lab technicians, students, professors, etc).

- Rough budget detailing your plans for utilizing the funds.
- Letter of support from your department chair or similar administrative official (this can be sent separately, as long as it clearly identifies the main contact person and institution).
- Tax ID number or Employee ID number if part of an organization, Social Security Number if an individual. For Universities, the organizational tax ID number can be obtained from the grants and contracts department.

Important Information

These funds cannot be used for salaries, stipends, etc. of the main participants, but can be used to hire a student, an intern, or professional services if that is essential for the project. An APS statement on indirect costs is available at <http://www.aps.org/programs/outreach/upload/rfp-indirectcosts12.pdf>.

This past winter GMAG has funded the proposal

Title: Magnetism Outreach: A Transportable Magnetic Induction Levitating Apparatus

Roxanne Hughes, Ph.D., National High Magnetic Field Laboratory

Brief Description: To build a magnetic induction levitating coil that could be easily transported to various outreach efforts to demonstrate the concepts of magnetism to local populations.

Ask your Colleagues to Join GMAG

For only \$8 additional dues APS members can become GMAG Members with these benefits (students are free for one year):

- Quarterly GMAG newsletter.
- Eligibility for GMAG graduate student awards and sponsorship.
- Potential to increase the number of APS Fellows sponsored by GMAG.
- Potential to increase the number of invited talks on Magnetism at the March Meeting.
- Opportunity to help shape the voice and future of the Magnetism community (your community) in the US.

See the GMAG website: <http://www.aps.org/units/gmag>. TO JOIN: Go to the APS page for “Membership Units” (<http://www.aps.org/membership/units/join-unit.cfm>) and follow instructions for adding a unit to your membership. Or call the APS at 301-209-3280 and tell a Membership Representative that you want to join topical group GMAG.

Important Deadlines

Date	Reason	Contact
June 1	GMAG Fellowship Nominations http://www.aps.org/units/gmag/fellowship/index.cfm	Suzanne te Velthuis tevelthuis@anl.gov
Early September	Invited talk nominations for March Meeting 2015	Jonathan Sun jonsun@us.ibm.com
October 18	GMAG Dissertation Award Nominations	Yves Idzerda idzerda@physics.montana.edu
December	March Meeting Student Travel Grants	Suzanne te Velthuis tevelthuis@anl.gov
ongoing	Outreach Proposals	Yves Idzerda gmagchair@aps.org

Thanks for being involved with GMAG and do not hesitate to get actively involved in the many activities described above.

The GMAG Executive Committee:

Chair: Mark Stiles (mark.stiles@nist.gov)

Chair-Elect: Yves Idzerda
(idzerda@physics.montana.edu)

Vice-Chair: Jonathan Sun (jonsun@us.ibm.com)

Past Chair: Paul Crowell (crowell@physics.umn.edu)

Secretary-Treasurer: Shireen Adenwalla
(sadenwalla1@unlnotes.unl.edu)

Members-at-Large:

Yuri Suzuki, Stanford University

William Ratcliff, Nat. Inst. Std. and Tech.

Kristen Buchanan, Colorado State University

Olle Heinonen, Argonne National Laboratory

P. Chris Hammel, Ohio State University

Yumi Ijiri, Oberlin College

Upcoming Conferences

APS March Meeting 2014

March 3-7, 2015

Denver, CO

2014 Intermag Conference

May 4-8, 2014

Dresden, Germany

59th Conference on Magnetism and Magnetic Materials

November 3-7, 2014

Honolulu, HI

APS March Meeting 2015

March 2-6, 2015

San Antonio, TX