

Note from the Chair

Dear GMAG Members:

In this Winter Newsletter recent GMAG activities and programs are highlighted. Foremost, you will find information about the 2018 March Meeting, which will be held in Los Angeles CA, from March 5-9. Our GMAG program chair, Steve Hill and his team, have put together a very exciting program, covering many important recent advances in magnetism.

Among the many activities at the March Meeting, I would like in particular to call your attention to the annual GMAG Business Meeting on Tuesday March 6th, 2018, (5:45pm-6:45pm, Session J24, Room 403A at the Los Angeles Convention Center). At this meeting we will welcome our newly elected GMAG-sponsored APS Fellows, newly elected GMAG officers, and honor the student dissertation and travel award winners. We very much hope to see you there!

Finally, please note the various deadlines listed towards the end of this newsletter. In particular, the deadline for Fellowship nominations sponsored by GMAG is June 1, 2018.

-Chris Leighton, University of Minnesota, GMAG Chair

Election of GMAG Officers for 2018-2019

The GMAG election ballot closed on January 23, 2018. Congratulations to our newly elected officers:

Vice Chair:

Geoff Beach (Massachusetts Institute of Technology)

Members-at-Large:

Sara Haravifard (Duke University)

Vanessa Sih (University of Michigan)

We are delighted to have these new Executive Committee members join us in serving the magnetism community. Their terms will start after the 2018 March Meeting. We thank the Nominating Committee - David Lederman (Chair), Julie Borchers, Ilya Krivorotov, and Dan Ralph (APS Council Representative) - for putting together an excellent slate of candidates.

We would also like to thank outgoing Executive Committee members for their dedicated service: Past Chair Suzanne Velthuis, and Members-at-Large Ilya Krivorotov and David Lederman.

GMAG Sponsored APS Fellows

In 2017, from nominations by the magnetism community, GMAG recommended our full allotment of 4 outstanding APS

members to be elected as Fellows of the APS. We were very pleased that all 4 nominations were selected by the APS General Fellowship Committee. The new GMAG APS Fellows are listed below along with their citations.

Enrique Del Barco, University of Central Florida, USA

Citation: For seminal and sustained contributions to the understanding of quantum phenomena in low dimensional magnetic materials, primarily through experimental studies of quantum tunneling in molecular magnets.

Stephane Mangin, Université de Lorraine, France

Citation: For significant contributions to the understanding of spin transfer torque switching of perpendicularly magnetized layers and pioneering studies of light induced magnetization switching in technologically important materials

Robert Stamps, University of Glasgow, UK

Citation: For influential and seminal works relevant to fundamental and applied aspects of spintronics, magnetic data storage, and non-volatile magnetic memory, from the perspective of microwave and optical frequency excitations of complex magnets, and ordering dynamics in spin systems far from equilibrium.

Vivien Zapf, Los Alamos National Laboratory, USA

Citation: For seminal contributions to the understanding of quantum mechanical properties of superconductors, quantum magnets, and multiferroic systems at low temperatures and in extreme magnetic fields to 100 T.

GMAG Fellowship Selection in 2018

Please nominate deserving candidates for APS Fellowship. Send inquiries regarding nominations to Prof. Geoff Beach, our new Vice Chair. The deadline for nominations through GMAG is **June 1, 2018**. Previous nominators should note that APS has revised the submission system. More detailed information and nomination instructions can be found at the links provided at the end of this newsletter.

GMAG Dissertation Awardees for 2018

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. The award consists 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 attend the APS March Meeting.

The 2018 recipients of the GMAG Outstanding Dissertation in Magnetism Award are:

Dennis Christensen, Technical University of Denmark
Thesis title: Exploring magnetic and electronic properties in γ -Al₂O₃/SrTiO₃.
Invited talk: C23.00008

Rebecca Dally, University of California, Santa Barbara
Thesis title: Complex Spin Interactions in Spin-orbit Intertwined Antiferromagnets NaMnO₂ and Na₄Ir₃O₈.
Invited talk: V24.00008

Congratulations to both!

The deadline for nominations for the 2019 Outstanding Dissertation in Magnetism Awards is **September 14th, 2018**. See the GMAG website (<http://www.aps.org/units/gmag/awards/index.cfm>) and the August Newsletter for detailed instructions.

GMAG Student Travel Awardees 2017-18

To increase student participation and involvement in activities essential to GMAG, and the APS as a whole, GMAG will sponsor 14 Student Travel Awards for the March Meeting. The awards will consist of \$250 in travel assistance to attend the meeting. The selected students will be expected to attend the GMAG business meeting, and also help at the GMAG membership table and/or serve one shift at the "Contact Congress" booth as part of APS outreach for congressional support for scientific research. This year's (March Meeting 2018) award winners are:

Bassim Arkook, UC Riverside
Dhritiman Bhattacharya, Virginia Commonwealth University
Dinah Simone Bouma, UC Berkeley
Grace Causer, University of Wollongong
Eleanor Clements, University of South Florida
Noah Kent, UC Santa Cruz and LBNL
Yunqiu (Kelly) Luo, The Ohio State University
Stephen McMillan, University of Iowa
Dante O'Hara, UC Riverside
Shengjie Shi, Cornell University
Phoebe Tengdin, University of Colorado Boulder
Priyanka Vaidya, University of Central Florida
Aaron Wegner, University of Virginia
Jacob Wisser, Stanford University

March Meeting 2018 GMAG Program

GMAG is sponsoring or co-sponsoring 88 scientific sessions, including 11 symposia and 73 Focus Sessions.

The GMAG sponsored/co-sponsored symposia are:

- A25. Topological/Skymion Hall Transport and Related Phenomena in Chiral Magnets (GMAG/DCMP)**
- C04. Coherent Magnonics: Progress to the Quantum Regime (DCMP/DMP/GMAG)**

- C41. Magnetism, Unconventional Superconductivity and Pressure Effects in CaKFe₄As₄ (DCMP/GMAG)**
- E05. Anomalous Transverse Transport in Mn₃X Non-collinear Antiferromagnets (DCMP/DCOMP/GMAG)**
- F05. Field Induced Phenomena in a-RuCl₃ (DCMP/DMP/GMAG)**
- F25. Spin Current in Antiferromagnets (GMAG)**
- H25. Topological Materials for Conversion between Charge and Spin Currents (GMAG/DCMP)**
- K42. Simulating Magnetization Switching Across Multiple Time and Length Scales (DCOMP/DCMP/GMAG)**
- S04. Dynamics of Chiral Spin Textures in Topological and Magnetic Materials (DCMP/DMP/GMAG)**
- V25. Spin-Orbit, Interface, and Domain Wall Physics in Magnetic Iridates (GMAG/DMP)**
- X25. Magnon BEC and Spin Superfluidity (GMAG/DCMP)**

GMAG Business Meeting

The GMAG annual Business Meeting (Session J24 in the program) will be held on Tuesday March 6th, 2018, 5:45pm - 6:45pm in Room 403A at the Los Angeles Convention Center. Please join us for the introduction of new GMAG-sponsored APS fellows, newly-elected GMAG officers, and to honor student travel award and dissertation award winners! Food and drink refreshments will be served at the meeting.

Thanks to GMAG Focus Topic Organizers

We 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
Karen Livesey, University of Colorado – Colorado Springs
Olivier Klein, SPINTEC, CEA-Grenoble
- 10.1.2 Emergent Properties of Bulk Complex Oxides**
Turan Birol*, University of Minnesota
Janice Musfeldt, University of Tennessee
Yasujiro Taguchi, RIKEN
- 10.1.3 Magnetic Oxide Thin Films and Heterostructures**
Alex Grutter*, NIST Gaithersburg
Satoshi Okamoto, Oak Ridge National Laboratory
Maria Varela, Universidad Complutense Madrid
- 10.1.4 Spin Transport and Magnetization Dynamics in Metals-Based Systems**
Barry Zink*, University of Denver
Fengyuan Yang, Ohio State University
Liam O'Brien, University of Liverpool

10.1.5 Spin-Dependent Phenomena in Semiconductors
Peng Xiong*, Florida State University
Ezekiel Johnston-Halperin, Ohio State University
Guido Burkard, University of Konstanz

10.1.6 Frustrated Magnetism
Kate Ross*, Colorado State University
Marcelo Jaime, Los Alamos National Laboratory
George Jackeli, Max Planck Institute for Solid State Research

10.1.7 Chiral Spin Textures and Dynamics, Including Skyrmions
Satoru Emori*, Stanford and Virginia Tech.
Olle Heinonen, Argonne National Laboratory
André Thiaville, Université Paris-Sud

10.1.8 Low-Dimensional and Molecular Magnetism
Matt Stone*, Oak Ridge National Laboratory
Jonathan Friedman, Amherst College
Ben Powell, University of Queensland

Sorting of the GMAG March Meeting Program

As many of you may have realized, the process for submitting and sorting abstracts for the March meeting was handled very differently this year. In particular, the sorting of abstracts into sessions was handled entirely online using the ScholarOne system. This resulted in a significant workload for the Focus Topic organizing teams right around the Thanksgiving break. These teams performed a tremendous service to GMAG, particularly the eight Focus Topic Leads (indicated by * in the above list), who essentially completed the work that had previously been undertaken by more than double the number of people during the one-day December sorters meeting (RIP). Our thanks also go out to Jim Egan and Eric Barth at APS who worked long hours to ensure that the changeover was a success.

Nominations for APS Prizes and Awards

APS prize descriptions and nomination deadlines appear at <http://www.aps.org/programs/honors/index.cfm>. Several prizes of potential interest to the GMAG membership and their corresponding deadlines are:

APS Fellowship (GMAG Deadline is June 1, 2018)

For more details and instructions see <http://www.aps.org/units/gmag/fellowship/index.cfm> and <http://www.aps.org/programs/honors/fellowships/nominations.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.

David Adler Lectureship Award in the Field of Materials Physics (June 1, 2018)

To recognize an outstanding contributor to the field of materials physics, noted for the quality of their research, review articles, and lecturing.

Distinguished Lectureship Award on the Applications of Physics (June 1, 2018)

To recognize and honor physicists in industrial and other non-academic careers for their significant contributions to the advancement of physics of a technical, industrial, or entrepreneurial nature.

Frank Isakson Prize for Optical Effects in Solids (June 3, 2019)

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

George E. Valley Jr. Prize (July 1, 2018)

To recognize one individual in the early stages of his or her career for an outstanding scientific contribution to physics that is deemed to have significant potential for a dramatic impact on the field.

James C. McGroddy Prize for New Materials (June 1, 2018)

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.

Lars Onsager Prize (June 1, 2018)

To recognize outstanding research in theoretical statistical physics, including the quantum fluids.

Oliver E. Buckley Condensed Matter Prize (June 1, 2018)

To recognize and encourage outstanding theoretical or experimental contributions to condensed matter physics.

Prize for a Faculty Member for Research in an Undergraduate Institution (June 30, 2017)

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

GMAG invites proposals directed towards educating non-scientists and the general public about the role of magnetism. Funds up to \$5000 per project (larger proposals may be considered) are available to cover supplies and expenses. These grants should foster new activities, and are 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 high school labs on magnetism, and the production of videos on magnetism that would appeal to the general public. Preference will be given to innovative activities that are properly 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. For these purposes, proposers will be required to provide GMAG with appropriate material when requested. Proposers are also encouraged to consider alternate avenues for dissemination; this could include presentation of the results at an APS meeting. The GMAG Executive Committee 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 Committee 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 incoming GMAG Chair (shill@magnet.fsu.edu):

- Cover sheet clearly stating the name, address, phone number, and email of the main contact person for your application. 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. 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 essential for the project. An APS statement on indirect costs is available at (<http://www.aps.org/programs/outreach/upload/rfp-indirectcosts15.pdf>)

Recently funded proposals include:

- *Physics Youth Scholastic and Instructing Camp for Orlando Scientists*, Dr. Enrique Del Barco, Department of Physics, University of Central Florida. A week long camp was offered to high school students in the Summer of 2017.

A summary of this camp is available on the GMAG website: (<https://www.aps.org/units/gmag/outreach/index.cfm>).

Ask Your Colleagues to Join GMAG

For only \$10 additional dues, APS members can become GMAG Members with the following benefits (students join for free!):

- The opportunity to help shape the voice and future of the magnetism community (your community) in the US.
- Receipt of the GMAG newsletter.
- Eligibility for GMAG graduate student awards and Fellowship sponsorship.
- The potential to increase the number of invited talks on magnetism at the March Meeting.
- The potential to increase the number of APS Fellows sponsored by GMAG.

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 the 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 GMAG.

Other Recent Magnetism-related News

GMAG was proud to sponsor Best Student Presentation Awards at the 2017 MMM Conference in Pittsburgh. The winner received a \$1000 award, and the four other finalists received \$250 awards. Congratulations to the winner and finalists! For details see: http://magnetism.org/?page=student_presentation_awards

The winner was:

Jiamin Chen, University of Tsukuba
Enhancement of L_2 order and spin-polarization of Co_2FeSi thin film by substitution of Fe with Ti

The other finalists were:

Mukund Bapna, Carnegie Mellon University
Spin Hall Effect Switching Detection in $CoFeB$ - MgO Perpendicular MTJs on Ta Using Conductive Atomic Force Microscopy

Bryan Esser, The Ohio State University
Understanding the Role of Microstructure in the Formation and Stability of Skyrmion Lattices in B20 Compounds Using Aberration Corrected Electron Microscopy

Hwaider Lin, Northeastern University
Acoustically Actuated Ultra-Compact NEMS Magnetolectric Antennas

Naveen Sisodia, IIT Delhi
Temperature Dependent Néel to Bloch Transformation of Isolated Skyrmions in a Nanodisk: A Micromagnetic Study

Important Deadlines

Date	Reason	Contact
June 1, 2018	GMAG Fellowship Nominations	Geoff Beach gbeach@mit.edu
Aug./Sept. 2018	Invited speaker and symposium nominations for 2019 March Meeting	Eric Fullerton efullerton@ucsd.edu
September 14th, 2018	GMAG Dissertation Award Nominations	Steve Hill shill@magnet.fsu.edu
December 1, 2018	Student Travel Grants for 2019 March Meeting	Geoff Beach gbeach@mit.edu
ongoing	Outreach Proposals	Steve Hill shill@magnet.fsu.edu

Thanks for your interest in GMAG and please do not hesitate to get actively involved in any of the many activities described above.

The GMAG Executive Committee:

Chair: Chris Leighton (leighton@umn.edu)
Chair-Elect: Stephen Hill (shill@magnet.fsu.edu)
Vice-Chair: Eric Fullerton (efullerton@ucsd.edu)
Past Chair: Suzanne G.E. te Velthuis (tevelthuis@anl.gov)
Secretary-Treasurer: Yumi Ijiri (yijiri@oberlin.edu)
Members-at-Large: Elke Arenholz, *Lawrence Berkeley National Laboratory*

June Lau, *National Institute of Standards and Technology*
Ilya Krivorotov, *University of California, Irvine*
David Lederman, *University of California, Santa Cruz*
Christian Binek, *University of Nebraska, Lincoln*
Peter Fischer, *Lawrence Berkeley National Laboratory, University of California, Santa Cruz*

Upcoming Conferences

IEEE International Magnetics Conference (Intermag 2018)
April 23-27, 2018
Singapore

International Conference on Microwave Magnetics (MM 2018)
June 24-27, 2018

Research in High Magnetic Fields (RHMF 2018)
June 24-28, 2018
Santa Fe, NM

9th International Conference on Highly Frustrated Magnetism 2018 (HFM 2018)
July 10-14, 2018
Davis, CA

21st International Conference on Magnetism (ICM 2018)
July 16-20, 2018
San Francisco, CA

23rd International Colloquium on Magnetic Films and Surfaces (ICMFS 2018)
July 22-27, 2018
Santa Cruz, CA

IEEE Magnetic Recording Conference (TMRC 2018)
August 8-10
Milpitas, CA

Gordon Research Conference on Conductivity and Magnetism in Molecular Materials
August 12-17, 2018
Bryant University, RI

International Conference on Molecule-based Magnets
September 1-5, 2018
Rio de Janeiro, Brazil

14th Joint MMM-Intermag Conference 2019
January 14-18, 2019
Washington, DC

A list of APS and GMAG related conferences can be found on the GMAG website: <http://www.aps.org/units/gmag/meetings/index.cfm>

An additional list of magnetism-related meetings can be found here (from the European Magnetism Association): http://magnetism.eu/TPL_CODE/TPL_AGENDALISTE/6-agenda.htm