

## GMAG NEWSLETTER, February 2020

### 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 2020 March Meeting, which will be held in Denver CO, from March 2-6. Our GMAG program chair, Geoff Beach 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 3<sup>rd</sup> (5:45pm-6:45pm, Session K46, Room 708 in the Colorado Convention Center). At this meeting we will welcome our newly elected GMAG-sponsored APS Fellows, newly elected GMAG officers, and honor the student 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, 2020.

*-Eric Fullerton, University of California – San Diego  
GMAG Chair*

### Election of GMAG Officers for 2020-2021

The GMAG election ballot closed on December 20, 2019. Congratulations to our newly elected officers:

*Vice Chair:*

Marcelo Jaime (Los Alamos National Laboratory)

*Secretary/Treasurer:*

Jaime Fernandez-Baca (Oak Ridge National Laboratory)

*Members-at-Large:*

Christianne Beekman (Florida State University)

Sarah Watzman (University of Cincinnati)

We are delighted to have these new Executive Committee members join us in serving the magnetism community. Their terms will start after the 2020 March Meeting. We thank the Nominating Committee - Alexander Chernyshev, Sara Haravifard (chair), June Lau, and John Mitchell for putting together an excellent slate of candidates.

We would also like to thank outgoing Executive Committee members for their dedicated service: Past Chair Stephen Hill, Secretary/Treasurer Yumi Ijiri, and Members-at-Large Elke Arenholz and June Lau.

### GMAG Sponsored 2019 APS Fellows

In 2019, from nominations by the magnetism community, GMAG recommended our full allotment of 3 outstanding APS members to be elected as Fellows of the APS. We were very pleased that all

3 nominations were selected by the APS General Fellowship Committee. The new GMAG APS Fellows are listed below along with their citations.

**Can-Ming Hu**, University of Manitoba, Canada: *For outstanding contributions to the fields of cavity spintronics and cavity magnonics, and for significant contributions to the development of electrical methods for studying magnetization dynamics.*

**William D. Ratcliff**, NIST, USA: *For seminal neutron scattering studies of the magnetic order and spin dynamics in multiferroic materials.*

**Oleg V. Tchernyshyov**, Johns Hopkins University, USA: *For seminal advances in magnetic solitons and the development of collective- - coordinate formalism of dynamics of magnetic solitons for ferromagnetic thin wires, skyrmion crystals and extended domain walls.*

### **GMAG Fellowship Selection in 2020**

Please nominate deserving candidates for APS Fellowship. Send inquiries regarding nominations to Marcelo Jaime, our new Vice Chair. The deadline for nominations through GMAG is **June 1, 2020**. 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 March Meeting 2021**

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 deadline for nominations for the 2021 Outstanding Dissertation in Magnetism Awards is **September 14th, 2020**. See the GMAG website (<http://www.aps.org/units/gmag/awards/index.cfm>) and the August Newsletter for detailed instructions.

### **GMAG Student Travel Awardees 2019-20**

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 2020) award winners are:

**Shiva Bhattarai**, Kent State University  
**Ramakanta Chapai**, Louisiana State University  
**Alexandra Churikova**, Massachusetts Institute of Technology  
**Sofia Ferreira Teixeira**, University of Porto  
**Benjamin Fortman**, University of Southern California

**Alyssa Henderson**, Florida State University and National High Magnetic Field Laboratory  
**Kwangyul Hu**, University of Iowa  
**Poonam Lathiya**, University of South Florida  
**Zach Porter**, University of California, Santa Barbara  
**David Smith**, Virginia Tech  
**Mojtaba Taghipour Kaffash**, University of Delaware  
**Ryan Tapping**, Cornell University  
**Ahsan Ullah**, University of Nebraska-Lincoln  
**Anuradha Vibhakar**, University of Oxford

## **March Meeting 2020 GMAG Program**

GMAG is sponsoring or co-sponsoring 67 scientific sessions, including 6 symposia and 61 Focus Sessions.

The GMAG sponsored symposia are:

**B19. Skyrmions in Oxide Materials and Heterostructures**

**D19. Topological Spintronics using Chiral Antiferromagnets**

**F19. Correlated and Magnetic Topological Materials**

**R19. Magnetic interactions at complex oxide interfaces**

**S19. New Opportunities in Spin Sensing, Manipulation and Resonance without Time-Varying Magnetic Fields**

**W19. Spin Ice - From Freezing to Cerenkov Radiation**

## **GMAG Business Meeting**

The GMAG annual Business Meeting March 3 (5:45pm-6:45pm, Session K46, Room 708 in the convention center). (Session K46 in the program) will be held on Tuesday March 3<sup>rd</sup>, 2020, 5:45pm - 6:45pm in Room 708 at the Colorado Convention Center. Please join us for the introduction of new GMAG-sponsored APS fellows, newly-elected GMAG officers, and to honor student travel 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**  
Dustin Gilbert\*, University of Tennessee – Knoxville  
Vincent Sokalski, Carnegie Mellon University  
Beth Stadler, University of Minnesota

**10.1.2** *Emergent Properties of Bulk Complex Oxides*

Stephen Wilson\*, University of California, Santa Barbara  
Riccardo Comin, Massachusetts Institute of Technology  
Mohit Randeria, Ohio State University

**10.1.3** *Magnetic Oxide Thin Films and Heterostructures*

Tiffany Kaspar\*, Pacific Northwest National Laboratory  
Laurent Bellaiche, University of Arkansas  
Satoru Emori, Virginia Tech

**10.1.4** *Spin Transport and Magnetization Dynamics in Metals-Based Systems*

Luqiao Liu\*, Massachusetts Institute of Technology  
Maxim Tsoi, University of Texas at Austin  
Hyunsoo Yang, National University of Singapore

**10.1.5** *Spin-Dependent Phenomena in Semiconductors, Including 2D Materials and Topological Insulators*

Gregory Fuchs\*, Cornell University  
Michael Flatté, University of Iowa  
Jing Shi, University of California – Riverside

**10.1.6** *Frustrated Magnetism*

Adam Aczel\*, Oak Ridge National Laboratory  
Oleg Tchernyshyov, Johns Hopkins University  
Haidong Zhou, University of Tennessee – Knoxville

**10.1.7** *Chiral Spin Textures and Dynamics, Including Skyrmions*

Seonghoon Woo\*, IBM T. J. Watson Research Center  
Jiadong Zang, University of New Hampshire  
Christos Panagopoulos, Nanyang Technological University

**10.1.8** *Low-Dimensional and Molecular Magnetism*

Vivian Zapf\*, Los Alamos National Laboratory  
Selvan Demir, Michigan State University  
Martin Mourigal, Georgia Tech

These teams performed a tremendous service to GMAG, particularly the eight Focus Topic Leads (indicated by \* in the above list). Our thanks also goes out to Eric Barth and Ruth Teferi at APS, who worked long hours to ensure that the program came together successfully.

**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, 2020)*

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, 2020)*

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, 2020)*

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 2, 2021)*

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

*George E. Valley Jr. Prize (July 1, 2020)*

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, 2020)*

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, 2020)*

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

*Oliver E. Buckley Condensed Matter Prize (June 1, 2020)*

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 1, 2020)*

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.

*LeRoy Apker Award, An Undergraduate Physics Achievement Award (June 1, 2020)*

The LeRoy Apker Award recognizes outstanding achievements in physics by undergraduate students, and provides encouragement to young physicists who have demonstrated great potential for future scientific accomplishment. Two awards are presented each year, one to a student from a Ph.D. granting institution, and one to a student from a non-Ph.D. granting institution.

## **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 ([gbeach@mit.edu](mailto:gbeach@mit.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.

## 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 2019 MMM Conference in Las Vegas.** The winner received a \$1000 award, and the four other finalists received \$250 awards. Congratulations to the winner and finalists! For details see: <https://magnetism.org/best-student-presentation-award>

The winner was:

**Shuuyuan Shi**, National University of Singapore  
*Efficient Magnetization Switching and Dzyaloshinskii-Moriya Interaction in WTe<sub>2</sub>/ferromagnet Heterostructures*

The finalists were:

**Eloi Haltz**, Laboratoire de Physique des Solides  
*Ferrimagnetic Domain Wall Dynamics Driven by Spin Orbit Torques Revealed by In-Plane Fields through the Compensation Points in GdFeCo*  
**Takuya Kawada**, The University of Tokyo  
*Surface Acoustic Wave Induced DC Spin Current in Spin-Orbit Heterostructures*  
**Shreyas Muralidhar**, University of Gothenburg  
*Stimulated, Continuous, and Wave Vector Selective Magnon Excitation using Rapid Demagnetization from High Repetition Rate Femtosecond Laser Pulse Trains*  
**Nitin Prasad**, University of Texas at Austin  
*Tunable Long-Term and Short-Term Memories in a Single Magnetic Tunnel Junction Based Synapse*

## Important Deadlines

Date	Reason	Contact
June 1, 2020	GMAG Fellowship Nominations	Marcelo Jaime <a href="mailto:mjaime@lanl.gov">mjaime@lanl.gov</a>
Aug./Sept. 2020	Invited speaker and symposium nominations for 2020 March Meeting	Julie Borchers <a href="mailto:julie.borchers@nist.gov">julie.borchers@nist.gov</a>
September 14 <sup>th</sup> , 2020	GMAG Dissertation Award Nominations	Geoff Beach <a href="mailto:gbeach@mit.edu">gbeach@mit.edu</a>
December 1, 2020	Student Travel Grants for 2020 March Meeting	Marcelo Jaime <a href="mailto:mjaime@lanl.gov">mjaime@lanl.gov</a>
ongoing	Outreach Proposals	Eric Fullerton <a href="mailto:efullerton@ucsd.edu">efullerton@ucsd.edu</a>

*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:** Eric Fullerton ([efullerton@ucsd.edu](mailto:efullerton@ucsd.edu))  
**Chair-Elect:** Geoff Beach ([gbeach@mit.edu](mailto:gbeach@mit.edu))  
**Vice-Chair:** Julie Borchers ([julie.borchers@nist.gov](mailto:julie.borchers@nist.gov))  
**Past Chair:** Stephen Hill ([shill@magnet.fsu.edu](mailto:shill@magnet.fsu.edu))  
**Secretary-Treasurer:** Yumi Ijiri ([yijiri@oberlin.edu](mailto:yijiri@oberlin.edu))  
**Members-at-Large:** Yayoi Takamura, University of California, Davis  
Luc Thomas, Headway Technologies  
Sara Haravifard, *Duke University*  
Vanessa Sih, *University of Michigan*  
Elke Arenholz, *Lawrence Berkeley National Laboratory*  
June Lau, *National Institute of Standards and Technology*  
**Assigned Council Representative:** Samuel Bader, DMP

## Upcoming Conferences

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](http://magnetism.eu/TPL_CODE/TPL_AGENDALISTE/6-agenda.htm)

IEEE International Magnetism Conference (Intermag 2020)  
May 4-8, 2020 Montreal, Canada

Magnetic Carrier Meeting  
June 2-5, 2020 London, England



Spin Caloritronics XI  
June 8-12, 2020, University of Illinois at Urbana-Champaign

Sol-SkyMag 2020  
June 22-26, 2020, San Sebastian, Spain

The 31<sup>st</sup> Magnetic Recording Conference  
July 27-29, Berkeley, CA

Trends in Magnetism 2020  
September 7-11, 2020, Cefalù, Palermo, Italy

65<sup>th</sup> Annual Conference on Magnetism and Magnetic Materials  
November 2-6, 2020, Palm Beach, FL

IEEE International Magnetism Conference (Intermag 2021)  
April 26-30, 2021, Lyon, France