

GMAG NEWSLETTER – August 2019

<https://www.aps.org/units/gmag/index.cfm>

Note from the Chair

Dear GMAG Members:

Please mark your calendars - the 2020 APS March Meeting will be held March 2-6 in Denver CO. We look forward to your active involvement and valuable input as we plan for an exciting magnetism program at the meeting. This GMAG Summer Newsletter contains important program and timeline information both for the March Meeting, and other events, including:

- Planning for the 2020 March Meeting, including nominations for symposia and invited speakers. **These nominations are due August 23, 2019 (see below)**
- Nominations for new GMAG officers for the 2019-20 election.
- GMAG student dissertation award nominations.
- APS March Meeting student travel award applications.
- Proposals for GMAG-funded outreach activities.

Your involvement will help ensure that magnetism and GMAG are a vibrant part of the upcoming APS March Meeting. Thank you for your valuable time and contributions.

Eric Fullerton, GMAG Chair, efullerton@ucsd.edu

March Meeting Program

Chair-Elect, Geoffrey Beach (gbeach@mit.edu) is the GMAG Program Chair for the 2020 March Meeting in Denver, CO. Geoff and his team are coordinating the organization of both GMAG sponsored and co-sponsored focus topics, as well as the GMAG invited symposia. Invited speaker nominations for focus topics and symposia are welcomed before the deadline of **August 23, 2019**. The deadline for submission of meeting abstracts is currently anticipated to be **October 25, 2019**.

Focus Topics - Nominations for invited speakers

For the 2020 meeting, GMAG is co-sponsoring eight focus topics. Each will consist of multiple sessions of contributed talks based on a common theme. Each resulting session can also include one invited talk. Suggestions for invited speakers are welcome and should be submitted through the APS ScholarOne website (<https://www.aps.org/meetings/march/abstracts/>) by the submission deadline of **August 23, 2019**. Access to the submission system requires a single login using your APS web account.

Nominations require submission of a short justification with supporting references. *Please make sure to select the correct Focus Topic from the pull-down menu on the submission site.* Contributed talks relating to a focus topic should be submitted using the same online system, again by selecting the appropriate sorting category. The GMAG focus topics for 2020 are listed below, with the co-sponsoring units shown in parentheses. Detailed descriptions appear on the following pages.

10.1.1 Magnetic Nanostructures: Materials and Phenomena (GMAG/DMP)

10.1.2 Emergent Properties of Bulk Complex Oxides (GMAG/DMP/DCOMP)

10.1.3 Magnetic Oxide Thin Films and Heterostructures (GMAG/DMP/DCOMP)

10.1.4 Spin Transport and Magnetization Dynamics in Metals-Based Systems

(GMAG/DMP/FIAP)

10.1.5 Spin-Dependent Phenomena in Semiconductors, including 2D Materials and Topological Insulators (GMAG/DMP/FIAP/DCOMP)

10.1.6 Frustrated Magnetism (GMAG/DMP)

10.1.7 Topological Spin Textures and Dynamics, Including Skyrmions (GMAG/DMP)

10.1.8 Low-Dimensional and Molecular Magnetism (GMAG/DMP)

Nominations for GMAG Symposia

GMAG sponsored five and co-sponsored an additional six invited symposia at the 2019 March Meeting. GMAG members are encouraged to recommend topics for these symposia, each of which includes five speakers. Please upload your symposium nomination at the APS ScholarOne nominations website, <https://www.aps.org/meetings/march/abstracts/>, before **August 23, 2019**. A symposium nomination requires: (1) Suggested title of the symposium; (2) A paragraph describing the theme of the symposium and its justification; (3) A list including 5 speakers, a Chair, and up to two potential back-up speakers, with the following for each: (a) full contact information, (b) a tentative presentation title, (c) a brief description and justification, including references where available. Detailed instructions can be found within the ScholarOne system.

Submission of a complete nomination package is essential for the review process, which is quite competitive: every year there are 10-15 nominations for the five GMAG-symposia. Compelling justification and breadth of interest statements are important for a successful proposal.

Note that Focus Topic organizers need to avoid conflicts of interest in selecting invited speakers, and that the selections will be monitored by the GMAG Program Chair. Related to this, APS regulations do not allow speakers to give invited talks at consecutive March meetings; there is a searchable index of invited talks at the 2020 meeting available at: http://meetings.aps.org/Meeting/MAR19/APS_Invited. This link is also provided within the APS ScholarOne submission system.

Nominations for GMAG Officers and Members of the Executive Committee

GMAG requests nominations for Vice-Chair (who succeeds sequentially to Chair-Elect, Chair, and Past Chair), Secretary-Treasurer, and for two new members-at-large of the Executive Committee.

Nominations for these positions should be sent to Sara Haravifard, haravifard@phy.duke.edu Chair of the GMAG Nominating Committee, before **October 1st, 2019**. Per the GMAG Bylaws, after the GMAG Nominating Committee has prepared a slate of candidates, additional candidates may be added if >5% of the GMAG membership (*i.e.*, more than ~57 GMAG members) petition.

Yumi Ijiri (Oberlin College) will complete her term as Secretary-Treasurer in March 2020. The Member-at-Large terms of Elke Arenholz, (Lawrence Berkeley National Laboratory) and June Lau, (National Institute of Standards and Technology) will also end in March 2020. Stephen Hill will rotate off the GMAG Executive Committee when his term as Past Chair ends in March 2020. We thank the four of them for their service to GMAG and its members.

Nomination for GMAG Student Dissertation Awards

In order to encourage students working in magnetism, every year GMAG sponsors Outstanding Dissertation in Magnetism Awards. GMAG will present up to three dissertation awards at the next APS March Meeting. These awards will recognize students who have conducted outstanding research leading

to their dissertation and will consist of an invited talk in an appropriate session at the APS March Meeting, a \$500 prize to the student, and up to \$250 towards his/her travel expenses to the APS March Meeting. The student must be in the final year before graduating with a Ph.D, and both the student and the advisor must be current members of GMAG. Nominations should consist of: (i) A nominating letter, (ii) an extended abstract on the research (maximum of 3 pages, including figures and references), (iii) the student's CV and publication list, and (iv) contact information for the student. These nomination documents must be submitted by the student's advisor or another senior researcher who knows the student's work well. The nominating letter must address the following issues:

- Quality and independence of the student's work.
- Student's speaking ability.
- Year the student began graduate school.
- Student's expected completion date (must be after September 1, 2019, but before September 1, 2020 to be eligible for the 2020 APS March Meeting award).
- Assessment of the student's future potential as a research scientist.

Nominations should be sent by email as a single PDF file to Eric Fullerton (efullerton@ucsd.edu) by **September 6, 2019**. The subject line for the email should be "GMAG Student Dissertation Award." Evaluation of the nominations will be conducted by the GMAG Executive Committee. Conflict of interest situations will be handled in accordance with [APS guidelines](#).

The 2019 recipient of the GMAG Dissertation Award was:

Javier Pablo Navarro, University of Zaragoza

Thesis title: *Development and optimization of advanced functional magnetic nanostructures grown by focused electron beam induced deposition*

Congratulations!

Nominations for GMAG Student Travel Awards

To increase student participation and involvement in activities essential to GMAG and the APS as a whole, GMAG will sponsor up to ten Student Travel Awards for the March Meeting. The awards will consist of \$250 in travel assistance to attend the meeting. An additional \$200 is available for those students at institutions outside the United States. The selected students will have lunch with a GMAG Executive Committee member and are expected to attend the GMAG business meeting. We also ask selected students to assist at the GMAG membership table and/or serve one shift at the "Contact Congress" booth to support APS outreach for congressional support for scientific research. To be eligible, students must present at the March Meeting and should submit an application, which can be downloaded from the GMAG website (<http://www.aps.org/units/gmag/upload/student-travel.docx>). Applications should be submitted by email to Julie Borchers (julie.borchers@nist.gov) by **November 27, 2019**. Please put "GMAG Student Travel Award" in the subject line of the email.

Evaluation of the applications will be conducted by the GMAG Executive Committee. Conflict of interest situations will be handled in accordance with [APS guidelines](#).

Congratulations to last year's GMAG Student Travel Award winners:

Ankita Anirban, University of Cambridge

Vipul Chaturvedi, University of Minnesota
Sayak Dasgupta, Johns Hopkins University
Kai-Isaak Ellers, Amherst College
David Harrison, University of Minnesota
Hengzhou Liu, University of South Florida-Tampa
V́ctor H. Ortiz, University of California Riverside
Lauren Riddiford, Stanford University
Paul Sass, Rutgers University
Meiying Xing, University of Texas at Arlington
Tiancong Zhu, The Ohio State University

GMAG Focus Topic Descriptions and Organizers:

Focus Topic sessions bring new areas of interest and new people to the March meeting and are an opportunity to explore recent developments in a sub-area of the magnetism sorting categories. The GMAG Focus Topics are co-sponsored with the Division of Materials Physics (DMP), Division of Computational Physics (DCOMP), and the Forum on Industrial and Applied Physics (FIAP). Note there is some overlap within the focus topic areas as well as with other DMP and GMAG sessions. The organizers of related Focus Topic sessions and the general magnetism sorting categories will share information in order to appropriately sort each submitted abstract and thus optimize the meeting program. Following are detailed descriptions of each Focus Topic followed by a list of the associated organizers for the 2020 March meeting (* denotes the lead organizer).

10.1.1 Magnetic Nanostructures: Materials and Phenomena (GMAG/DMP)

DESCRIPTION:

Reduced dimensionality and confinement often lead to magnetic states and spin behaviors that are markedly different from those observed in bulk materials. This Focus Topic explores advances in magnetic nanostructures, the novel properties that arise in magnetic materials at the nanoscale, and the advanced characterization tools required for understanding these properties. Magnetic nanostructures of interest include thin films, multilayers, superlattices, nanoparticles, nanowires, nanorings, 3D nanostructures, nanocomposite materials, hybrid nanostructures, magnetic point contacts, and self-assembled, as well as patterned, magnetic arrays. Sessions will include talks on the methods used to synthesize such nanostructures, the variety of materials used, and the latest original theoretical, experimental, and technological advances. Synthesis and characterization techniques that demonstrate nano- or atomic-scale control of properties will be featured, such as: novel deposition and lithography methods (including focused electron/ion beam induced deposition); electron microscopy (Lorentz and holographic imaging); advances in synchrotron and neutron scattering techniques; and novel near field imaging techniques including NV center-based imaging. Phenomena and properties of interest include magnetization dynamics and reversal, singular magnetic textures, magnonics, magnetic interactions, magnetic quantum confinement, spin tunneling and spin crossover, proximity and structural disorder effects, strain effects, microwave resonance and microwave assisted reversal, magnetic anisotropy, and thermal and quantum fluctuations.

ORGANIZERS:

Dustin Gilbert*, University of Tennessee – Knoxville, dagilbert1031@gmail.com
Vincent Sokalski, Carnegie Mellon University, sokalski@cmu.edu
Beth Stadler, University of Minnesota, stadler@umn.edu

10.1.2 Emergent Properties of Bulk Complex Oxides (GMAG/DMP/DCOMP)

DESCRIPTION:

The emergence of novel states of matter, arising from the intricate coupling of electronic and lattice degrees of freedom, is a unique feature in strongly correlated electron systems. This Focus Topic explores the nature of such ordered states observed in bulk compounds of transition metal oxides; it will provide a forum for discussion of recent developments in theory, simulation, synthesis, and characterization, with the aim of covering basic aspects and identifying future key directions in bulk oxides. Of special interest are the ways in which the spin, lattice, charge, and orbital degrees of freedom cooperate, compete, and/or reconstruct in complex oxides to produce novel phenomena as well as novel magnetic states, often with exotic topological properties that can arise from the interplay of spin-orbit coupling and Coulomb interactions. Associated with this complexity is a tendency for new forms of order, such as the formation of stripes, ferroic states, spin-orbit entangled states or phase separation. An additional focus of this session is on how competing interactions result in spatial correlations over multiple length scales, giving rise to enhanced electronic and magnetic susceptibilities and responses to external stimuli.

ORGANIZERS:

Stephen Wilson*, University of California, Santa Barbara, stephendwilson@ucsb.edu

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Mohit Randeria, Ohio State University, randeria@mps.ohio-state.edu

10.1.3 Magnetic Oxide Thin Films and Heterostructures (GMAG/DMP/DCOMP)

DESCRIPTION:

The intricate interactions between electronic and structural degrees of freedom make magnetism in complex oxides an intriguing field of research. Specifically, in thin films and heterostructures of magnetic oxides emergent phenomena can arise from the competition and cooperation of strain, lattice symmetry, orientation, size, and interfacial effects. These tuning factors support a wide variety of interfacial phenomena such as charge transfer, orbital reconstruction, proximity effects, and modifications to local atomic structure. Novel electronic and magnetic ground states at oxide interfaces thus generates exciting new prospects both for discovery of fundamental physics and the development of technological applications. This Focus Topic is dedicated to progress in the knowledge, methodologies, and tools required to advance the field of magnetism in oxide thin films, heterostructures, superlattices, and nanostructures. Synthesis, characterization, theory, and novel device physics are emphasized. Specific areas of interest include, but are not limited to, growth of oxide thin films and heterostructures, control of their magnetic properties and ordering, magnetotransport, magnetic behavior in strongly correlated systems, strong spin-orbit coupling effects, dilute magnetism, magnetoelectric phenomena, coupling of atomic and magnetic structures, and recent developments in theoretical prediction and materials-by-design approaches. Advances in experimental techniques to probe and image magnetic order and transitions in complex oxide thin films (including scanning probes, optical, electron, neutron, and synchrotron-based techniques) are also emphasized. Note that overlap exists with other DMP and GMAG focus topic sessions. As a rule of thumb, if magnetism plays a key role in the investigation, then the talk is appropriate for this focus topic.

ORGANIZERS:

Tiffany Kaspar*, Pacific Northwest National Laboratory, tiffany.kaspar@pnl.gov

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Satoru Emori, Virginia Tech, semori@vt.edu

10.1.4 Spin transport and Magnetization Dynamics in Metals-Based Systems (GMAG/DMP/FIAP)

DESCRIPTION:

The generation, manipulation, and detection of spin currents in metals and magnetic heterostructures are of great interest for fundamental science and applications. Understanding of fundamental spin-dependent transport physics, accompanied by progress in materials and nanoscale engineering, has already had a dramatic impact on technology. Discoveries like giant and tunneling magnetoresistance have moved to

applications, and uses of more recent discoveries, including magneto-thermal effects, spin-transfer torque, spin-Hall effects, and chiral domain walls, are imminent. This Focus Topic aims to capture experimental and theoretical developments in spin transport and magnetization dynamics in mostly metal-based systems, such as ultra-thin films, heterostructures, lateral nanostructures, perpendicular nanopillars, and tunnel junctions. In particular, contributions describing new results in the following areas are solicited: (i) Interplay between spin currents and magnetization dynamics in magnetic nanostructures; spin-transfer, spin-pumping and related phenomena, including current-induced magnetization dynamics in heterostructures and domain wall motion in magnetic wires; (ii) Theoretical predictions and/or experimental discovery of half-metallic band structures, both in bulk solids and at the surfaces of thin films; Spin transport and magnetization dynamics in magnetic nanostructures (e.g., TMR, CPP-GMR and lateral spin valve structures) based on half-metallic materials; (iii) Manifestations of spin-orbit interactions including, but not limited to field-like and damping-like torques on magnetic films and nanostructures, the spin-Hall, inverse spin-Hall, and anomalous Hall effects; microscopic mechanisms of magnetization damping; (iv) Electric field control of magnetic properties (e.g., anisotropy, phase transitions, etc.), including but not limited to hybrid metal/oxide structures, piezoelectric layers coupled to ferromagnetic films, and electrolyte/ferromagnetic systems; (v) Ultrafast magnetization response to (and reversal by) intense laser pulses; magnetization dynamics at elevated temperatures, and thermally-assisted magnetization reversal; (vi) Thermoelectric spin phenomena such as giant magneto-thermopower and Peltier effects, spin-Seebeck effects, spin and anomalous Nernst and Ettingshausen effects (spin caloritronics); (vii) Thermal gradient and/or RF-driven magnonic magnetization dynamics in nanostructures, including spin wave excitation, propagation, and detection; Interactions between electronic spin current and magnon propagations in thin-film and device structures; and (viii) General considerations of spin angular momentum, energy, and entropy flow, conservation laws, and Onsager reciprocity relations.

ORGANIZERS:

Luqiao Liu*, Massachusetts Institute of Technology, luqiao@mit.edu

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Hyunsoo Yang, National University of Singapore, eleyang@nus.edu.sg

10.1.5 Spin-Dependent Phenomena in Semiconductors, Including 2D Materials and Topological Insulators (GMAG/DMP/FIAP/DCOMP)

DESCRIPTION:

The field of spin-dependent phenomena in semiconductors addresses a wide range of new effects, materials systems [e.g., III-V and II-VI heterostructures, group-IV materials including Si, Ge, SiC, diamond and graphene, transition-metal dichalcogenides (TMDs) and other 2D semiconductors, and oxide semiconductors] and new structures (e.g., quantum dots and nanocrystals, nanowires and carbon nanotubes, hybrid ferromagnetic/semiconductor structures, and van der Waals heterojunctions). This Focus Topic solicits contributions aimed at understanding spin-dependent processes in magnetic and non-magnetic structures incorporating semiconducting materials. Topics include: (i) electrical and optical spin injection and detection, spin pumping, spin Hall effects, spin-dependent topological effects, spin filtering, spin dynamics and scattering; (ii) growth and electrical, optical and magnetic properties of magnetic semiconductors, nanocomposites, and hybrid ferromagnet-semiconductor structures, including quantum dots, and nanowires; (iii) spin and valley dynamics in bulk (e.g. Si, Ge) and monolayer semiconductors (e.g. TMDs); (iv) spin-dependent electronic and thermal transport effects, and dynamical effects in semiconductors with or without spin-orbit interactions, including proximity effects in heterostructures; (v) manipulation, detection, and entanglement of electronic and nuclear spins in quantum systems, including dots, impurities and point defects (e.g., NV centers in diamond); (vi) magneto-resistance, magneto-electroluminescence, and resonance-driven spin pumping in organic semiconductors; (vii) spin-dependent devices and device proposals involving semiconductors; and (viii)

spin-dependent properties (e.g. quantum anomalous Hall effects) in topological insulators and topological insulator/ferromagnet hybrid structures.

ORGANIZERS:

Gregory Fuchs*, Cornell University, gdf9@cornell.edu

Michael Flatté, University of Iowa, michael-flatte@uiowa.edu

Jing Shi, University of California – Riverside, jing.shi@ucr.edu

10.1.6 Frustrated Magnetism (GMAG/DMP)

DESCRIPTION:

Simple antiferromagnets on bipartite lattices have well-understood ground states, elementary excitations, thermodynamic phases and phase transitions. At the forefront of current research are frustrated magnets where competing interactions suppress magnetic order and may lead to qualitatively new behavior. Frustrated magnets may realize novel quantum-disordered ground states with fractionalized excitations akin to those found in one-dimensional antiferromagnets, but with a number of novel features. They are often characterized by significant spin-orbit and crystal-field interactions as well as by varying degrees of spatial anisotropy. This Focus Topic solicits abstracts for presentations that explore both theoretical and experimental aspects of the field. The themes to be represented are united by geometrical frustration: valence-bond solids, spin nematics, and other exotic ordered states; spin ices, quantum spin liquids, order-from-disorder, magnetoelastic coupling, and novel field-induced behavior; and synthesis and modeling of new materials with magnetic frustration. Also of interest are the effects of strongly fluctuating spins on properties beyond magnetism, including charge, spin, and energy transport, as well as ferroelectricity.

ORGANIZERS:

Adam Aczel*, Oak Ridge National Laboratory, aczela@ornl.gov

Oleg Tchernyshyov, Johns Hopkins University, olegt@jhu.edu

Haidong Zhou, University of Tennessee – Knoxville, hzhou10@utk.edu

10.1.7 Topological Spin Textures and Dynamics, Including Skyrmions (GMAG/DMP)

DESCRIPTION:

A strong spin-orbit interaction combined with inversion symmetry breaking often gives rise to chiral magnetism, including the formation of topologically non-trivial spin textures (e.g., skyrmions and chiral domain walls) and the asymmetric propagation of spin waves. The novel properties of static and dynamic chiral magnetism offer many exciting opportunities in the fields of nanomagnetism and spintronics. This Focus Topic will address the most recent developments in the field of chiral magnetism. It will cover (bulk/thin-film) material synthesis and characterization, numerical and analytical modeling, and device design and measurement, combining experimental and theoretical aspects of the field. Specific areas of interest include, but are not limited to: magnetic skyrmions (and more complex topological solitons) in bulk materials, multilayer systems and thin films chiral magnetic domain walls, chiral magnetization dynamics, spin Hall effects, spin-orbit torques, the physics and control of Dzyaloshinskii-Moriya interactions (DMI), DMI-induced non-reciprocity in spin waves, interfacial magnetism, topological transport phenomena, emergent electrodynamics, and novel device architectures based on non-trivial topological spin textures and dynamics. Advanced techniques to study chiral magnetism, such as spin-polarized scanning tunneling microscopy, magneto-optical Kerr effect microscopy, Brillouin light scattering spectroscopy, spin-polarized low energy electron microscopy, NV center microscopy, Lorentz transmission electron microscopy, and synchrotron-based techniques will also be included. The key future directions of the field will be identified. It is expected that this Focus Topic will not only promote the fundamental understanding of static and dynamic chiral magnetism, but also facilitate progress towards innovative technological applications.

ORGANIZERS:

Seonghoon Woo*, IBM T. J. Watson Research Center, shwoo@ibm.com

Jiadong Zang, University of New Hampshire, jiadong.zang@unh.edu
Christos Panagopoulos, Nanyang Technological University, christos@ntu.edu.sg

10.1.8 Low-Dimensional and Molecular Magnetism (GMAG/DMP)

DESCRIPTION:

The possibility of reduction to zero-dimensionality allows exploration of novel size and quantum effects in magnetic systems. While single spins can be isolated in semiconducting devices or by scanning probe techniques, the molecular approach introduces synthetic flexibility, providing the possibility of engineering the magnetic quantum response of a spin system. The development and study of molecular and low-dimensional magnetic systems continues to provide a fertile testing ground to explore complex magnetic behavior and new challenges for the development of experimental techniques and theoretical models. New frontiers are also represented by the possibility of combining low-dimensional magnetic systems in hybrid architectures and to study the interplay between spins and functional nanostructures. This Focus Topic solicits abstracts that explore inorganic and organic molecule-based, as well as solid state, systems, and both theoretical and experimental aspects of the field. Topics of interest include: magnetism in zero, one, and two dimensions (e.g., quantum dots, single-molecule magnets, spin chains, interfaces between molecular spins and functional surfaces), spin-orbit and super-exchange couplings, quantum critical low-dimensional spin systems, topological excitations, quantum tunneling of magnetization, coherent spin dynamics and quantum correlation (e.g. entanglement), and novel field-induced behavior.

ORGANIZERS:

Vivian Zapf*, Los Alamos National Laboratory, vzapf@lanl.gov
Selvan Demir, Michigan State University, sdemir@chemistry.msu.edu
Martin Mourigal, Georgia Tech, mourigal@gatech.edu

Nominations for APS Prizes and Awards

The APS awards several prizes, awards, and lectureships each year that are relevant to the research interests of the GMAG membership. You are encouraged to nominate your colleagues for these awards. A list of awards and instructions may be found at <http://www.aps.org/programs/honors/>.

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 GMAG Chair (efullerton@ucsd.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:

- *Physics Youth Scholastic and Instructing Camp for Orlando Scientists*, Prof. Enrique Del Barco, Department of Physics, University of Central Florida. A week long camp offered to high school students in June 2017. The camp continued in 2018 through local matching support.

A summary of this project is available on the GMAG Outreach 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!):

- Receipt of the 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 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 topical group GMAG.

Other Recent Magnetism-Related News

The 2019 IUPAP Young Scientist Prize in the field of Magnetism was awarded to:

Dr. Julia Mundy, Harvard University

“For pathbreaking research on electric field control of magnetism using epitaxially designed multiferroics.”

The IUPAP Commission on Magnetism (C9) was established by the International Union of Pure and Applied Physics in 1957 to promote the exchange of information and views among the members of the international scientific community in the general field of Magnetism. See:

<http://iupap.org/commissions/c9-magnetism/c9-news-2/> for news items from IUPAP C9.

Important Deadlines

Date	Reason	Contact
August 23	Invited Symposia nominations for March Meeting	Geoffrey Beach (gbeach@mit.edu), submit at https://www.aps.org/meetings/march/abstracts/
August 23	Invited speaker nominations for Focus Topics for March Meeting	Focus Topic Organizers, or at https://www.aps.org/meetings/march/abstracts/
September 6	GMAG Dissertation Award Nomination	Eric Fullerton efullerton@ucsd.edu
October 1	Officer and Executive Committee nominations	Sara Haravifard, haravifard@phy.duke.edu
October 25	March Meeting Abstracts	https://www.aps.org/meetings/march/abstracts/
November 27	March Meeting Student Travel Grants	Julie Borchers julie.borchers@nist.gov
Ongoing	Outreach Proposals	Eric Fullerton efullerton@ucsd.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: Eric Fullerton (efullerton@ucsd.edu)
Chair-Elect: Geoffrey Beach (gbeach@mit.edu)
Vice-Chair: Julie Borchers (julie.borchers@nist.gov)
Past Chair: Stephen Hill (shill@magnet.fsu.edu)
Secretary-Treasurer: Yumi Ijiri (yijiri@oberlin.edu)
Members-at-Large: Yayoi Takamura, *University of California – Davis*
Luc Thomas, *Headway Tech Inc.*
Sara Haravifard, *Duke University*
Vanessa Sih, *University of Michigan – Ann Arbor*
Elke Arenholz, *Lawrence Berkeley National Laboratory*

Upcoming Conferences and Schools

2019 MMM Conference
November 4 – 8, 2019
Las Vegas, NV, USA

2020 Intermag Conference
May 4- 8, 2020
Montreal, Canada

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