DCMP Newsletter

APS Division of Condensed Matter Physics, DCMP Summer 2016 Newsletter

Important Deadlines and Dates:

DCMP Invited Symposia Nominations	**Monday, August 29, 2016**
DCMP Executive Committee Nominations	**Thursday, September 1, 2016**
Voting Starts for DCMP Executive Committee	mid-October 2016
Contributed Abstracts Deadline	November 11, 2016
APS Fellow Nominations	Wednesday, February 1, 2017
New Orleans APS March Meeting	March 13 – March 17, 2017

A Note from the DCMP Chair

The successes of the past year in our division of the American Physical Society, DCMP, are captured in the notable achievements of our prize winners and fellowship awardees described below in this newsletter. The continuing enthusiastic participation from our membership at the March meeting, the largest physics meeting in the world, is another indicator. Since the chair of DCMP is the program chair for the March meeting, the DCMP has a special responsibility to provide leadership to ensure the strength of this unique international conference. What community does it, or should it, serve? Should it continue to grow in size? Is the balance between contributed and invited sessions correct? And is the role of the poster sessions appropriate? Overall, how can the March meeting be improved? Your participation in this dialogue is essential and can be expressed though your membership of the DCMP. Let me first describe the essential aspects of our division, which you can explore in more detail by doing the search: APS DCMP. Then, after a few words about the unit structure of the APS organization to provide context, I will summarize the 2016 March meeting statistics, especially as they reflect DCMP participation.

What does DCMP do for you?

For nominal cost in addition to APS membership one can be a member of the Division of Condensed Matter Physics. As an APS member and as a condensed matter physicist you can be nominated and elected by the DCMP to be a fellow of the American Physical Society. As a DCMP member you can submit a nomination for an invited talk symposium at the March meeting. For attendees of the March meeting your input is an important guide to some of the best topics and current research in condensed matter

physics. As a member of the DCMP you can participate in elections and in division administration, helping choose the committees that select prize winners for the Buckley, Onsager, Lilienfeld, Isakson, Davison-Germer, and Greene Awards. The DCMP has recently instituted a travel grant program for graduate students. DCMP supports a range of activities and programs, such as the outreach public lectures sponsored jointly by DMP and DCMP “The Physics of Superheros”.

Please encourage your colleagues, especially young scientists and those from underrepresented groups, as well as physicists from institutions outside of the USA, to become members of the DCMP. It will have an impact on the world physics community and help develop their professional careers.

The unit structure of the APS

There are 35 physics units of the APS. Those listed below are the main unit participants at the March meeting. The percentages are unit membership relative to total APS membership. Among the Divisions is the DCMP, Division of Condensed Matter Physics, 11.4%; DMP, Division of Materials Physics, 5.8%; DCOMP, Division of Computational Physics, 5.4%; DBP, Division of Biological Physics, 3.9%; and DPOLY, Division of Polymer Physics, 2.7%. The Topical Groups include, Group for Quantum Information, GQI, 3.1%; GMAG, Group for Magnetism, 1.8%; GSNP, Group for Statistics and Non-Linear Physics, 2.1%; and GSOFT, Group for Soft Condensed Matter Physics, 2.4%. There are also units called Forums. The DCMP is the largest unit of the American Physical Society with 6,046 members in 2016.

The March meeting in 2016

Last year in Baltimore at the March meeting there were 91 nomination submissions to DCMP for invited sessions with a total of 346 speakers. From these submissions, 31 invited sessions with 153 speakers were selected, and in some cases edited, by the DCMP program committee consisting of the DCMP executive committee and the chair elect of the DMP. For context, keep in mind that the total number of invited speakers at the March meeting in 2016 was 917 with a record total attendance of 9,874. DCMP had an allocation of 35 invited talk sessions from a total of 108 for all units. Of these, DCMP transferred four sessions to GMAG, GQI, and DCOMP to be co-sponsored by DCMP and to be responsive to appeals from these units. Information for the 2017 meeting to be held in New Orleans 3/13-17, is included below in this newsletter; especially important is the deadline of August 29 for submission of DCMP invited talk nominations.

Bill Halperin

2015 DCMP Election Results

The results of the 2015 Division of Condensed Matter Physics election for Vice Chair, Divisional Councilor, and Members-at-Large of the executive committee are:

Vice Chair: Paul Canfield
Divisional Councilor: Brad Marston
Members-at-Large: Erica Carlson, Stephen Nagler, and Doug Natelson

Approximately 17% of the 5,948 DCMP members in 2015 voted in that election. We would like to congratulate those elected and express my gratitude to all members who agreed to stand as candidates. The DCMP benefits greatly from those who are willing to run for office and serve the condensed matter physics community. We would also like to thank our colleagues who left office in 2015: Art Ramirez (Past Chair), Frances Hellman (Divisional Councilor), Andrew Kent, Philip Kim, and Peter Littlewood (Members-at-Large), all of whom performed valuable service for the DCMP. Finally, thanks to Nandini Trivedi, Chair of the Nominating Committee, and to Melissa Peterson and her colleagues at MyDirectVote for the online and paper ballot distribution and counting.

DCMP Sponsored Prize Winners for 2016

Oliver E. Buckley Condensed Matter Prize (DCMP)

Eli Yablonovitch, *University of California, Berkeley*

For seminal achievements in solar cells and strained quantum well lasers, and especially for creating the field of photonic crystals, spanning both fundamental science and practical applications of that science

Frank Isakson Prize for Optical Effects in Solids (DCMP)

David Burnham Tanner, *University of Florida, Gainesville*

Dirk van der Marel, *University of Geneva*

For insightful experiments and analyses on a wide variety of quantum solids with strong electronic correlations in general, and cuprate superconductors in particular, using optical spectroscopy

Division of Condensed Matter Physics Grad Student Travel Awards

The DCMP Grad Student Travel Awards have been established to assist the professional development and careers of graduate student researchers. We anticipate awarding ten $500 DCMP Travel Awards and ten Honorable Mention recognitions to allow graduate student members of DCMP to participate in APS March Meeting sessions. The selection will be based on merit and the committee will consist of members of the DCMP Executive Committee.

Students interested in being considered for a DCMP Travel Award must apply online:

https://www.aps.org/units/dcmp/awards/index.cfm

On-line applications must be completed by November 21, 2016. Advisors of applicants will be asked to complete a letter of support by December 12, 2016.

New DCMP Sponsored APS Fellows Selected in 2015

Abanov, Artem [2015]
Texas A&M University
Citation: For contributions to the theory of quantum phase transitions, in particular for the interaction of electrons with spin fluctuations.

Arovas, Daniel [2015]
University of California, San Diego
Citation: For contributions to the theory of quantum magnetism, including novel large-N generalizations, valence bond solid and double exchange systems, and for pioneering work in the theory of fractional statistics.

Buehler-Paschen, Silke [2015]
Vienna University of Technology
Citation: For major contributions to the understanding of strongly correlated electron systems, particularly through the synthesis and investigation of quantum critical heavy fermion compounds, Kondo insulators, and strongly correlated thermoelectrics.

Carlson, Erica [2015]
Purdue University
Citation: For theoretical insights into the critical role of electron nematicity, disorder, and noise in novel phases of strongly correlated electron systems and predicting unique characteristics.

Cobden, David [2015]
University of Washington
Citation: For novel contributions to experimental physics in low dimensional nano-scale systems, in particular VO2 nanobeams and carbon nanotube electronic properties.

Delsing, Per [2015]
Chalmers University of Technology
Citation: For pioneering research on the physics of single-electron devices, superconducting circuits, and microwave photonics.

Dessau, Daniel [2015]
University of Colorado, Boulder
Citation: For development of high resolution ARPES and laser-ARPES, and their utilization in ground-breaking studies of correlated electron materials, particularly cuprate superconductors and colossal magnetoresistive oxides.

Dietl, Tomasz [2015]
Polish Academy of Sciences
Citation: For seminal contributions to the theory of magnetic semiconductors.

Finkelstein, Gleb [2015]
Duke University
Citation: For significant experimental studies of quantum transport in nanostructures, especially electron correlation effects in artificial quantum impurity systems.

Freeman, Mark [2015]
University of Alberta
Citation: For pioneering studies of magnetization dynamics in nanostructures using ultrafast optical spectroscopy, scanning microscopy, and nanomechanical magnetometry.

Haskel, Daniel [2015]
Argonne National Laboratory
Citation: For development and use of advanced polarized x-ray techniques for studies of magnetism and electron-lattice coupling in correlated electron systems, particularly under extreme conditions.

Krishnamurthy, Hulikal [2015]
Indian Institute of Science
Citation: For outstanding contributions to condensed matter theory, especially strongly correlated phenomena in fermionic and bosonic systems, universal behavior in quantum impurity physics, and colossal magneto-resistance.

Lumsden, Mark [2015]
Oak Ridge National Laboratory
Citation: For contributions to the understanding of magnetism in iron-based superconductors using neutron scattering techniques.

Madhavan, Vidya [2015]
University of Illinois, Urbana
Citation: For major contributions to the study of topological phases of electronic matter using advanced spectroscopic imaging STM.

Maier, Thomas [2015]
Oak Ridge National Laboratory
Citation: For numerical and phenomenological calculations that have provided insight into cuprate and iron-pnictide superconductors.

Martin, Ivar [2015]
Argonne National Laboratory
Citation: "For fundamental work in the theory of strongly correlated electrons, topological materials, and quantum measurement."

Misra, Prabhakar [2015]
Howard University
Citation: For sustained contributions to the spectroscopy of the condensed phases and exemplary mentoring of underrepresented students.

Mitrovic, Vesna [2015]
Brown University
Citation: For pioneering contributions to NMR study of low energy excitations in emergent quantum phases.

Petrovic, Cedomir [2015]
Brookhaven National Laboratory
Citation: For outstanding contributions to understanding of heavy fermion materials through synthesis and characterization of new systems, particularly CeCoIn5.

Ronning, Filip [2015]
Los Alamos National Laboratory
Citation: For experimental contributions to understanding strongly correlated electron phenomena, particularly in cuprate and heavy-fermion systems.

Shtengel, Kirill [2015]
Univ of California, Riverside
Citation: For major theoretical contributions to the prediction and detection of non-Abelian anyons in condensed matter physics.

Siddiqi, Irfan [2015]
University of California, Berkeley
Citation: For significant contributions to the development of superconducting quantum information devices and quantum measurement techniques.

Steglich, Frank [2015]
Max Planck Institute
Citation: For seminal contributions to correlated electron physics, including discovery of unconventional superconductivity in CeCu2Si2, and explication of electronic criticality near antiferromagnetic quantum critical points.

Nomination and Election of DCMP Executive Committee Members

Please participate in the election of DCMP officers and members-at-large of the DCMP Executive Committee. This coming October, you will be asked to elect a new Vice Chair (who will become, in successive years, Chair Elect, Chair and Past Chair), and three Members-at-Large who serve 3-year terms. The deadline for nominations will be *Sept. 1, 2016.* To submit a nomination please go to:
http://www.aps.org/units/dcmp/governance/nominations.cfm

The election will open mid-October 2016. Members will receive voting instructions from the APS. Candidate biographies and statements will be available on both the APS and DCMP web sites before and during the election. You can go to the DCMP web-site and click the link that will appear there shortly, or go to the link in an email that you receive from APS once the election site opens.

The DCMP Executive Committee performs several functions. One of its most important responsibilities is to lead the organization of the APS March Meeting. It is the body that selects the division's Invited Symposia from those nominated by the community. Thus a proper balance of expertise and diversity of the Committee are essential for a successful meeting. The Executive Committee helps to lobby Congress on science policy issues. Finally, the DCMP Members-at-Large choose potential new Fellows, from those nominated, to be considered by the APS Fellowship Committee and Council. The current membership of the Executive Committee appears at the end of this newsletter or can be found at:

http://www.aps.org/units/dcmp/governance/officers/index.cfm

The 2017 APS March Meeting

The 2017 APS March Meeting will be held in New Orleans, Louisiana from Monday, March 13 to Friday, March 17, 2017. The 2017 March Meeting headquarters hotel is the Marriot New Orleans, and the 2017 March Meeting venue is the Ernest N. Morial Convention Center. The complete bulletin will be available only in electronic form.

Invited Symposia Nominations

DEADLINE FOR NOMINATIONS: **Monday, August 29, 2016**
Please help make the 2017 March Meeting a success by submitting nominations for invited DCMP Symposia. Use the link below to submit a nomination of an Invited Symposium for the March Meeting:

Submit a nomination

A major role of DCMP is to organize Invited Symposia. According to DCMP bylaws, the speakers are drawn exclusively from member nominations. It is an APS rule that invited speakers can give only one invited talk at the meeting. Additionally, only those speakers who did not give an invited talk at the 2016 meeting are eligible to give invited talks at the 2017 meeting (with the exception of prize winners). The following is a list of invited speakers from the 2016 March Meeting:

List of Invited Speakers from the 2016 March Meeting

Please create your symposium nomination, then go to the link above to enter it into the database. It requires some effort, but this work on the part of our members is essential for a first-rate program.

Before you submit, you must notify your speaker and session chair nominees and verify their willingness to participate if chosen.

Once you have completed the nomination — and will not make any more changes or additions — please click on “Complete Nomination.” This will initiate a notification email to the speakers and the chair of your nominated session to reconfirm their willingness to participate. They must respond before **August 29, 2016** for your nomination to be given full consideration. Successful proposals will be selected on September 10 and organizers will be notified soon after. You will receive confirmation of your nomination.

Suggestions for Creating a Successful Proposal

1. Propose a symposium on a timely topic with five excellent talks. The program committee favors symposia with five talks, so suggesting an additional sixth talk can be helpful in the event of cancellation.

2. Choose an appropriate title and provide a clear justification. This will aid the committee in making its decision. The speaker can revise the title later, but it is important to have the topic of the presentation stated clearly.

3. Provide an informative abstract for each talk. This will address the central theme of the symposium and aid the committee in reaching a decision. Speakers who are invited will be asked to submit their own abstracts later.

4. Provide references to publications. This will aid the committee in determining whether the work is current and whether it has received acceptance from the scientific community. Electronically posted pre-prints are useful, but do not have the same status as refereed publications.

5. Enter the proposed symposium under a relevant DCMP sorting category. This will ensure that the correct subcommittee examines the proposal. Multiple submissions of a proposal are counterproductive and ineffective.

DCMP Executive Committee

The Executive Committee Officers and Members-at-Large for the 2016-2017 year (most terms begin after the March Meeting):

Officers:

Chair: William Halperin, (03/16 - 03/17)
Northwestern University
Chair-Elect: Meigan Aronson, (03/16 - 03/17)
Texas A&M University
Vice Chair: Paul Canfield, (03/16 - 02/17)
Iowa State University
Past Chair: Sharon Glotzer, (03/16 - 03/17)
University of Michigan, Ann Arbor
Councilor: John Marston, (01/16 - 12/19)
Brown University
Secretary/Treasurer: Lance Cooper, (03/15 - 03/19)
University of Illinois, Urbana

Members-at-Large:

David Grier, (03/14 - 03/17)
New York University
Frances Houle, (03/14 - 03/17)
Lawrence Berkeley National Laboratory
Joel Moore, (03/14 - 03/17)
University of California, Berkeley
Martin Greven, (03/15 - 03/18)
University of Minnesota, Minneapolis
Harold Hwang, (03/15 - 03/18)
Stanford University
Adriana Moreo, (03/15 - 03/18)
University of Tennessee, Knoxville
Erica Carlson, (03/16 - 02/19)
Purdue University
Stephen Nagler, (03/16 - 02/19)
Oak Ridge National Laboratory
Douglas Natelson, (03/16 - 02/19)
Rice University