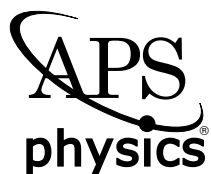


Edited by Warren Pickett



A Division of the American Physical Society

DCMP Newsletter

The Division of Condensed Matter Physics

Summer 2010

IMPORTANT DEADLINES & DATES

- DCMP Invited Symposia Nominations | Friday, September 3, 2010
- Vote: DCMP Officers & Executive Committee | Tuesday, October 1, 2010
- Dallas Contributed Abstracts | Friday, November 19, 2010
- Contributed Abstracts, Post Deadline | Friday, December 31, 2010
- APS Fellow Nominations | Friday, February 1, 2011
- Dallas APS Meeting | March 21-25, 2011

A Note from the DCMP Chair

The past year has seen a number of developments, from the promising to the alarming. The economic crisis continues, with (according to some economists) signs of recovery while universities, states, and industry continue to struggle with their financial woes. A comparably large news item has been the underwater oil gusher in the Caribbean, which as of this writing has been capped, at least temporarily, after nearly three months of gushing (the media's characterization as a 'leak' is mystifying). The effects of the accumulation and slow dispersal of the resulting gummy condensed matter at and near the top of the water will not be known for some years. NSF has released in July a "Gulf Oil Spill MRI RAPID" call, as one rapid response that is relevant to physicists.

On a more general note: in 2007 Congress passed the America COMPETES that authorized research support by DOE's Office of Science, NSF, and NIST. Legislation to extend this act for additional years is wending its tenuous path through congress. The APS News Washington Dispatch column follows this, and more current news is available at http://www.aps.org/public_affairs.

For DCMP and for scientists in general, there is some very welcome news. On May 3, 2010, John Holdren (Assistant to the President for Science & Technology and Director, OSTP) noted in a presentation to the Council of Science Society Presidents that "no president has ever talked so much about S&T." The administration is also walking the walk: Nobel laureates occupy posts of Energy Secretary (Steven Chu, APS Fellow and life member) and OSTP Associate Director for Science (Carl Wieman, APS Fellow). The President's Council of Advisors on Science & Technology

(PCAST) includes three other Nobel laureates, four MacArthur award winners, and two university presidents. In total, over 30 members of NAS, NAE, the Institute of Medicine, and AAAS are presidential appointees to top posts. The time has never been so favorable for science, with physics represented very strongly, to be at the front in national and international policy making. Application areas are pervasive: S&T drivers for economic recovery; health care; energy; climate change; national security.

Energy concerns continue to be a dominant factor in science research policy. DOE awarded 46 EFRCs (Energy Frontier Research Centers) in 2009 with five year programs. These EFRCs focus on energy supply (20), crosscutting sciences (14), energy efficiency (6), and energy storage (6). Another positive policy decision by the U.S. administration, to provide stimulus funds (ARRA: American Recovery and Reinvestment Act) for numerous research and infrastructure programs, is having a strongly beneficial impact on our DCMP community and science more broadly.

The injection of new funds from the federal administration into the research effort highlights past and ongoing efforts of the APS and its membership to educate the public, Congress, and the Executive Branch about the importance of steady long-term investments in science. Each year for most of the past decade, DCMP has worked with the APS Office of Public Affairs to communicate with Congress about funding for science by organizing a letter-writing campaign at the March Meeting. This practice will continue this coming

(continued on page 4)

A Note from the DCMP Chair	1
The 2011 March Meeting	2
Does DCMP Sponsor Focus Sessions? Clarification from the Chair Elect	3
Nominate, then Vote for DCMP Officers and Executive Committee	4
DCMP Web Site	4
APS Fellow Nominations	4
Join DCMP!	4

The 2011 March Meeting

The March Meeting will be held in Dallas, Texas, March 21-25, 2011. This year DCMP will organize about 35 of the 110 or so Invited Sessions. There will be more than 40 parallel sessions and the complete bulletin will be available only in electronic form. It has been two decades since the March Meeting was last held in Dallas. Situated in northeastern Texas and belonging to the Dallas - Fort Worth - Arlington metropolitan area, Dallas is in the ten largest U.S. cities and offers all the amenities: business, arts, sports, dining, science, and more.

INVITED SYMPOSIA NOMINATIONS

The deadline for Invited Symposia nominations is Friday, September 3, 2010. In order to submit a nomination of an Invited Symposium for the March Meeting go to: <http://www.aps.org/meetings/invitation/dcmp.cfm>. The site opens on August 6, 2010.

NEW POLICY: When an Invited Symposium is formally submitted, e-mails will go out to all the proposed speakers and to the proposed session chair to verify that they are (a) aware that they are being nominated and (b) that we have their correct e-mail addresses. The proposed speakers and session chairs will have 2 weeks to respond. If they do not, that speaker either will be dropped from the symposium or will be replaced by a backup speaker. Appropriate notifications will be sent to those who propose a session if their speakers and chairs do not respond in a timely fashion. This procedure, updated this year, is intended to streamline the notification of invited speakers and session chairs by ensuring the DCMP Executive Committee has correct up-to-date e-mail addresses. Our intention is that the process will also promote serious high-quality proposals by making sure that all parties proposed for a symposium are interested in presenting a talk on the suggested topic, and will be in attendance at the March meeting to present.

Please note that the Executive Committee as a whole selects invited talks only from those proposed by the community. It cannot substitute speakers of its own choosing. This procedure is unique among APS units. You are encouraged to submit joint nominations for invited sessions with other APS units when submitting to DCMP. In putting together proposals for invited symposia, please consider minority, female, and international candidates, who historically have been underrepresented among invited speakers at the March Meeting.

The deadline for the receipt of abstracts of contributed papers is Friday, November 19, 2010, 5:00 PM EST. Submission instructions can be found at www.aps.org/meetings/march/categories.cfm.

Suggestions for Creating a Successful Proposal

1. Propose a symposium on a timely topic with five strong talks.

Generally the Executive Committee favors symposia (preferably with five talks, rather than fewer) over individual invited talks. There are very few of the latter. (See also the Chair-Elect's clarification, following page.)

2. Choose an appropriate title and provide a clear justification.

This will aid the committee in making its decision.

3. Choose titles of individual talks carefully.

The speaker can revise the title later, but it is important to have the topic and intent of the presentation stated clearly.

4. Provide an informative abstract for each talk.

This will underpin 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.

5. Provide references to published work in refereed journals.

This will aid the committee in determining whether the work is current and whether it has some level of acceptance by the scientific community. Electronically posted preprints are useful, though they do not have the same status as refereed publications.

6. Include an alternate speaker.

It is important to provide a substitute in the event one of the other choices is unavailable. Please ask the alternate (like the main choices) if s/he will be available.

7. Enter the proposed symposium under a relevant sorting category (following page).

This will ensure that the correct subcommittee examines the proposal. Multiple submissions of a proposal are counterproductive and ineffective.

List of Invited Symposia Sorting Categories

1. Metals
2. Semiconductors
3. Insulators and Dielectrics
4. Polymeric and Soft Matter
5. Superconductivity
6. Magnetism
7. Complex Structured Materials
8. Fluids and Soft Matter
9. Phase Transitions and Strongly Correlated Systems
10. Biological Physics
11. Chemical Physics
12. Statistical and Nonlinear Physics
13. Artificially Structured Materials
14. Surfaces, Interfaces & Thin Films
15. Instrumentation and Measurements
16. Applications
17. General Theory and Methods
18. General
19. High Pressure Physics
20. Quantum Fluids and Solids
21. Atomic, Molecular & Optical (AMO)
22. Physics Education
23. Quantum Information, Concepts and Computation
24. Energy Research and Applications

Does DCMP Sponsor Focus Sessions?

By Sam Bader, 2011 DCMP March Meeting Program Chair and DCMP Chair-Elect

The American Physical Society's March Meeting is one of the great annual physics gatherings that brings together condensed matter physicists and those in many diverse fields of physics. The March Meeting is highly successful and grows larger in attendance each year. Why discuss how DCMP selects invited speakers and organizes its sessions? It is our duty to examine our institutions periodically to ensure that they continue to serve our needs optimally.

DCMP each year sorts more contributed abstracts than any other unit of the APS. DCMP enhances the March Meeting by organizing invited symposia. DCMP also invites a small number of individual speakers. Invitees are selected based on a process whereby symposia nominations are solicited from the DCMP membership. The DCMP Executive Committee makes the final selection based on that input. Each nomination is scrutinized and ranked by four or five knowledgeable Exec Com members. The decisions are made in the Fall (late September – early October) in a day long, face-to-face meeting of the Exec Com. (Exceptions to these guidelines include award winners and general interest invitees, such as outreach speakers and representatives of funding agencies.)

The challenge for our members who nominate speakers is to formulate and document a compelling symposium format. Invariably in the symposium selection process, and subsequently, the DCMP Exec Com is left with some individual invited speakers. What we do with these invitees is discussed below. Let's first see how other units handle their business. Other, newer units introduced the concept of the Focus Session, which differs in two ways from how DCMP operates. Firstly, Focus Session Organizers select the invited speakers. The unit's Exec Com appoints the annual Organizers and reserves final approval of their selections. The Organizers write a description of their session and are encouraged to seek input from the unit's membership, but are not constrained to select invitees based on nominations from the membership. Second, each invitee is embedded in an otherwise contributed session.

Invariably, each year, multiple units might want to invite some of the same speakers. Such conflicts are resolved at an October Program Committee Meeting where all the relevant unit representatives are gathered at APS Headquarters. At the December Sorters' Meeting, also at APS Headquarters, DCMP places some of its individual invitees into DCMP contributed sessions, converting them into DCMP Focused Sessions. DCMP also places some of its invitees into relevant Focus Sessions organized initially by other units, and by so doing DCMP becomes a co-organizer. DCMP can actually participate in such co-organizations anytime after its Fall Exec Com meeting where its invitee list is created. Hence, DCMP affiliates with other units and creates or cosponsors Focus Sessions late in the season, at a time when other APS units are nearing the end of their Focus Session organizing process.

DCMP can readily participate earlier in the process to coordinate with other units. To do this, the candidate unit would partner with distinguished members of DCMP to serve as co-organizers, who would submit on the DCMP symposium template the proposed DCMP-sponsored speakers, with full justification for the session and each speaker, remembering to include in the beginning of the title "Focus Session." The DCMP Exec Com would scrutinize the nomination with the same criteria as for all others in its program. If it is not chosen by DCMP, the partner unit is still able to sponsor it on its own.

THE DCMP WEB SITE

The DCMP web site at <http://dcmp.bc.edu> provides general information and announcements of potential interest to members. The site also informs the general public of the role and value of condensed matter physics in their lives. There is an impressive collection of images in the gallery at <http://dcmp.bc.edu/page.php?name=gallery>.

We welcome contributions to the site from DCMP membership. Please send your comments, suggestions, and contributions to Dr. Irina Bariakhtar, DCMP Webmaster, at dcmp@bc.edu.

NOMINATE, THEN VOTE FOR DCMP OFFICERS AND EXECUTIVE COMMITTEE MEMBERS

Please participate in the election of DCMP officers and members of the executive committee. 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. This year, the Secretary-Treasurer position will also be refilled. Deadline for nominations is September 1, 2010. The election will open on October 1, 2010. Members will receive detailed instructions about voting 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: <http://dcmp.bc.edu> and click the link which will appear there shortly, or go to the link in an email that you receive from APS once the elections site opens. Paper ballots will be mailed to those who cannot be reached by email.

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, and thus a proper balance of expertise on the Committee is essential for a successful meeting. The Executive Committee helps to lobby Congress on science policy issues. Finally, the DCMP Members-at-Large nominate new Fellows to be forwarded for consideration by the APS Fellowship Committee and Council. The current membership of the Executive Committee can be found at <http://dcmp.bc.edu/page.php?name=exec>. The outgoing committee members are: Members-at-Large, Elizabeth Parks (Colgate), Jainendra Jain (Penn State), William Halperin (Northwestern); Past Chair, David Pine (NYU); Secretary-Treasurer, Alan Dorsey (Florida).

APS FELLOWSHIP NOMINATIONS

Members are encouraged to nominate individuals for Fellowship in the APS. The Division is able to elect each year one-half of one percent of its current membership (roughly 5600 at present). Nominations can be sent at any time but must be received by February 1, 2011 to be considered for action in 2011. Nomination instructions and advice for preparing a strong nomination are available at <http://www.aps.org/programs/honors/fellowships/nominations.cfm>.

Unsuccessful nominees are automatically reconsidered in the second year after nomination. Updated information from sponsors is recommended. In March the DCMP Fellowship Committee, made up of the Members-at-Large and the DCMP member of the APS Council, reviews the nominations referred to the DCMP by APS and makes recommendations to the APS Fellowship Committee.

The selection process is very competitive. When preparing nominations, the sponsor should ensure that the achievements of the candidate are genuinely reflected in the material submitted. The Fellowship Committee looks for sustained contributions to the field, and successful nominees generally have over ten years of professional experience beyond the PhD. The eight representative publications and ten other contributions should be chosen with care. The supporting letters, which evaluate the candidate's work and discuss which of the candidate's achievements are "exceptional," aid the committee considerably.

Note from the Chair continued from page 1

year in Dallas. DCMP has also worked with the APS Office of Public Affairs to organize trips by APS members to Capitol Hill, usually in February, for face-to-face meetings with Congressional staffers, primarily from the home states and districts of the participating APS members. If you haven't already done so, I encourage you to become involved in one or more of these important activities. I would also like to express our collective debt of gratitude to those who have worked to inform the Government about the importance of supporting physics research, and especially to Michael Lubell, who serves as the APS Director of Public Affairs (and who is also on the Physics faculty at CCNY).

Materials shortages affecting condensed matter physicists continue, and even expand. The shortage of He-3 has long been a concern, as documented by articles in *Physics Today* (August 1959; June 2007; November 2009; June 2010; more I must have missed). In June the PT headline was "DOE begins rationing helium-3," whose serious drop in supply is a casualty of the collapse of the cold war (helium-3 is a byproduct of tritium used in nuclear weapons). A major (and recently growing) use of He-3 is in detectors used in national security. Thus the shortage reflects changes in international relations – another way that real-life affects research capabilities. Other shortages loom: indium shortages require a search for new transparent conductors (the commercial choice so far has been ITO – indium-tin-oxide). Shortages of rare earth elements are a concern, with only China having substantial ores.

In short, we continue to face challenges as we are also presented with opportunities. Our excellent APS publications and the upcoming March Meeting will reflect extremely active and exciting DCMP research that continues to keep us dedicated and occasionally mesmerized. Plus ça change, plus c'est la même chose.

—Warren Pickett

JOIN DCMP

Most people reading this newsletter are already DCMP members. However, there may be other APS members whose research is in the area of condensed matter physics who are not yet members of the division. The size of the membership of the division determines both the number of invited symposia that we can organize at the March Meeting, and the number of Fellows that we can recommend to the Society. As a consequence, any increase in these numbers benefits our community. Please ask your condensed matter colleagues and graduate students if they are members of the DCMP. The reality is that many are not. It costs only \$8 to join, and a person can join at any time. Student membership in DCMP is free. See <http://dcmp.bc.edu/page.php?name=unitappl> for details.