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A Division of  
The American  
Physical Society

# DCMP Newsletter

The Division of Condensed Matter Physics

Summer 2006

## IMPORTANT DEADLINES & DATES

**DCMP Invited Symposia Nominations**  
Thursday, August 31, 2006

**Vote for DCMP Officers and Executive Committee**  
Friday, September 15, 2006

**Denver Contributed Abstracts**  
Monday, November 20, 2006

**APS Fellow Nominations**  
Wednesday, January 17, 2007

**Denver APS Meeting**  
March 5-9, 2007

*See below for more details.*

## A Note from the DCMP Chair

The field of condensed-matter physics is characterized by strong research, diverse interests, and great vitality. Evidence for this includes the March meeting, which has grown in size and scope in recent years. In 2006, the meeting registration exceeded 7000.

Another indicator of the vitality of condensed matter research is a recent piece in Nature about the most important problems in physics. Entitled “Hot stuff: citation index suggests top five physics disciplines,” they turned out to be carbon nanotubes, nanowires, quantum dots, fullerenes, giant magnetoresistance, M-theory, and quantum computation. The analysis used the  $h^2$  metric developed by Jorge Hirsch. Now, one can argue about citation-based metrics, but it still is relevant that the top five came from condensed matter physics, and that our area also has considerable overlap with the seventh. You can see the survey at <http://physicsweb.org/articles/news/10/5/4/1>.

There is reason to be optimistic about funding for the physical sciences. At Baltimore, the DCMP executive committee heard from Ray Orbach and Michael Turner about the prospects for their agencies (DOE and NSF, respectively). The administration and the congress appear to be in accord on a plan that would double funding for basic research in the physical sciences over 10 years. If this happens, and earmarks can be avoided, it offers the hope for additional funds in the individual investigator programs that most people in condensed matter research rely on for support. (NASA and the DOD agencies have been left out of this increase, or even cut, so there are reasons for pessimism as well.)

DCMP’s principal focus each year is the March APS meeting. We organize a number of invited symposia, lead the sorting of contributed talks, and participate in the overall organization of the meeting. In addition, the division has led the lobbying efforts at the meeting. Most of the “arm twisters” who asked you to write congress during the meeting were recruited by the DCMP. (Be sure to write your congressperson at the Denver meeting!) In 2006, we started the process that led to visits to the congress by meeting participants and to a very successful “event” on Capitol Hill. The next two newsletter articles give more details of these lobbying activities.

—David Tanner  
June 2006

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## March Meeting Participants Make Strong Showing on Capitol Hill

by Steve Pierson, Head of Government Relations, APS Washington Office

Attendees at the 2006 APS March Meeting in Baltimore made a strong statement to Congress on research funding, both in writing and in person. 110 participants, representing 31 states, gave up a day of the conference to travel to Capitol Hill to urge their elected officials to increase basic research funding. Back in Baltimore, 1120 people signed letters to their Congressional delegation with the same message.

Their case for basic research funding was made easier by the American Competitiveness Initiative (ACI), which was announced by President Bush in his January State of the Union Address and seeks to double funding for basic research funding in the physical sciences over 10 years. The Congressional visitors and the letters urged Congress to fund fully the ACI requests for NSF, the NIST labs, and the DOE Office of Science, and urged an inflationary increase for NASA Science, which was not included in the ACI.

We in the Washington Office are very grateful to the March Meeting participants who partook in the advocacy activities. It is clear that meeting attendees are becoming more and more aware of the need to communicate to Congress on research issues and of its effectiveness.

DCMP and other participating APS Units are also to be commended for their involvement. The Congressional Visits, an idea originated and pushed by DCMP, were a great success. The participants visited 153 Congressional offices during the 2 days on Capitol Hill. In meeting with Congressional staffers and Members of Congress, meeting attendees discussed the connection of basic research to a vibrant economy, a message in resonance with ACI and the competitiveness and innovation concerns in Washington.

At the Contact Congress booth, meeting attendees experienced a new letter format. Instead of individual emails, attendees digitally signed onto group letters, using software developed by the APS technical staff. The group letters were then printed and delivered in hard copy by the Congressional visitors (and afterwards by the Washington Office). The new format was developed so that the APS letters were attract more attention in Congressional Offices.

The key to the letter writing success is the “arm-twisters”, the volunteers who spend two-three hours of the meeting corralling other attendees to sign their name to the letters. Without the enthusiastic and tireless work of the arm-twisters, the numbers would be much smaller. We’re also encouraged by the growing number of attendees who make Contact Congress part of their meeting itinerary.

Congress seems to be reacting well so far to the basic research message. The House has fully funded ACI requests for NSF, the NIST labs and the DOE Office of Science. As of press time, the Senate was yet to act on its relevant spending bills.

## Physics Today — Brighter Tomorrow

by Susan Coppersmith and Brenda Lopez

In conjunction with the 2006 March meeting in Baltimore and in addition to sponsoring the Congressional visits by APS members, DCMP, DAMOP, and DCOMP jointly sponsored a reception in the Rayburn Foyer of the Rayburn Congressional Office Building in Washington DC to talk about science with Congressional Representatives, their staff members, and others (including NSF Director Arden L. Bement, Jr.). The event was co-sponsored by Reps. Rush Holt and Vernon Ehlers, the two physics Ph.D.’s in Congress. Our message: physics research is vital to America’s economy and our children’s futures (and it’s fun!).

Equipped with an arsenal of physics demonstrations, we showed congress people and their staffers that the physics discoveries in the areas covered by the APS March Meeting are both interesting and important.

Events of this type remind our country’s political leaders that science involves real people who make real changes in the world by discovering real things.



- A. Prof. Sid Nagel (left) demonstrates the properties of materials to Prof. Myriam Sarachik and U.S. Rep. Vernon J. Ehlers as Prof. Leo Kadanoff (right) looks on.
- B. Dr. William Phillips and Congressman Rush Holt (D-NJ-12th).
- C. Graduate student Panos Oikonomou demonstrates the properties of materials to Walton Irving, 12-year-old son of Vicki Irving, staff member of Rep. Loretta Sanchez (D-CA-47th).

## The March Meeting

The March meeting will be held in Denver, CO, March 5-9, 2007. It was last in Denver in 1975. The 1975 Bulletin shows how much the meeting differed from what we see now: Two sessions/day, Monday-Thursday; 3 parallel symposia sessions and 12 parallel contributed talk sessions. The bulletin was 250 pages, set from camera-ready typescript.

This year, DCMP will organize 35 symposia, and other divisions will organize many more. If last year is any guide, there will be roughly 40 parallel sessions and the Bulletin (which most participants will only have in electronic form) will run 1800 pages.

### INVITED SYMPOSIA NOMINATIONS

The deadline for Invited Symposia nominations is Thursday, August 31. In order to nominate an Invited Symposium for the March Meeting go to: <http://dcmp.bc.edu/symposia/>. The entire Executive Committee selects invited talks only from those proposals nominated by DCMP members. It cannot substitute speakers of its own choosing.

### SUGGESTIONS FOR CREATING A SUCCESSFUL PROPOSAL

1. Propose a Symposium on a timely idea with 5 strong talks. In general, the DCMP favors symposia, and uses single speakers sparingly.
2. Choose a good Symposium Title and provide a clear Symposium Justification. This will give the selection committee an overview of the Symposium.
3. Choose titles of individual talks carefully.
4. Provide an informative abstract for each talk. This will underpin the idea of Symposium and give the selection committee a better idea of what the session will accomplish. The speaker can change them later.
5. Provide recent references published in refereed journals. These are helpful to the Committee to make sure work is current.
6. Include an alternate speaker in abstract to provide an excellent substitute if the first choice is unavailable.
7. Use the correct sorting category (given below) to ensure that the correct subcommittee examines proposal. Multiple submission of a proposal are ineffective and counterproductive.

### CONTRIBUTED ABSTRACT SUBMISSION

The deadline for receipt of abstracts is Monday November 20, 2006 at 5:00 p.m. EST. Complete abstract submission instructions can be found at: <http://www.aps.org/meet/abstracts/>. Note that the Sorting Categories for abstracts (which is much more detailed than the one for invited symposia) can be found at: <http://www.aps.org/meet/MAR07/abs.cfm>.

### LIST OF INVITED SYMPOSIA CATEGORIES

1. Metals
2. Semiconductors
3. Insulators and Dielectrics
4. Polymeric and Organic Materials
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. Statistics and Nonlinear Physics
13. Artificially Structured Materials
14. Surface, Interfaces and Thin Films
15. Instrumentation and Measurements
16. Applications
17. General Theory (Theoretical 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

#### DCMP Website

The DCMP website at <http://dcmp.bc.edu> provides members general information and announcements of potential interest. This site also informs the general public of the role and value of condensed matter physics in our lives. You can see an impressive collection of images in the image gallery (<http://dcmp.bc.edu/page?name=gallery>). We solicit contributions to the site from the DCMP membership for any subject matter that may help to achieve these goals. Please send your comments and suggestions to Ms. Irina Bariakhtar, who maintains the site, at [dcmp@bc.edu](mailto:dcmp@bc.edu).

#### Join DCMP!

Most, if not all, persons reading this are already DCMP members. So why put a call to join the division in the newsletter? Well, we hope that all current members continue as members in the upcoming year. We would like every member to recruit at least one new member. Ask your condensed matter colleagues if they are members of the DCMP. You'll be surprised by how many are not. It's only 6 bucks to join, and a person can join at any time. Finally, suggest that your students join. Student membership in DCMP is free. (See <http://dcmp.bc.edu/page?name=unitappl> for details.)

What do you get for membership? Each year you get a fine newsletter.... More important, both the number of invited symposia that we can organize and the number of Fellows that we can recommend are tied directly to the division membership. Any increase in these numbers benefits the entire community.

## Vote for New DCMP Officers

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) a new Secretary Treasurer, and 3 members-at-large. The election will occur during August and early September. Members will receive detailed instructions about voting from the APS. Candidate bios and statements will be available on both the APS and DCMP web sites before and during the election. (Go to the link in an email you'll get from APS once the election opens or go to the DCMP website <http://dcmp.bc.edu/> where instructions will be posted. Paper ballots will be mailed to those who cannot be reached by email.)

The DCMP Executive Committee performs several functions. Among its most important responsibilities is to be in charge of organizing the APS March Meeting. It is the body that chooses the division's Invited Symposia from those nominated by the DCMP membership and thus a proper balance on the Committee is essential for producing a well-run meeting. It helps to lobby Congress on science policy issues. Finally, the DCMP Members-at-Large select those names to be forwarded for consideration by the APS Fellowship Committee and Council.

The current membership of the DCMP Executive Committee can be found at <http://dcmp.bc.edu/page?name=exec>. Outgoing members are Matthew Fisher (UCSB), Caroline Ross (MIT), Clare Yu (UC Irvine), Susan Coppersmith (Wisconsin, Past Chair), and Joseph Serene (Secretary-Treasurer, who in the fall will join the APS as its Treasurer). [Congratulations, Joe!]

## APS Fellow Nominations

DCMP members are encouraged to make nominations for Fellowship in the APS. The Division is able to elect each year one-half of one percent of the current membership. Nominations may be made at any time, but only those received by the deadline, January 17, will be considered for action in that year. Nominations should be sent to: Executive Officer American Physical Society, One Physics Ellipse, College Park, MD 20740, ATTN: Fellowship Program.

### NOMINATION FORMS MAY BE OBTAINED BY:

- writing to the above address
- sending an email message to: [fellowship@aps.org](mailto:fellowship@aps.org)
- telephoning: (301) 209-3268 or faxing: (301) 209-0865
- downloading forms from: <http://www.aps.org/fellowship/fellinfo.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 of the DCMP Executive Committee, reviews the nominations referred to DCMP by APS and makes recommendations to the APS Fellowship Committee.

### TIPS FOR SUCCESSFUL NOMINATIONS

The selection process is very competitive; when preparing nominations, sponsors should ensure that the achievements of their candidate are genuinely reflected by the material submitted. In general, the Fellowship Committee looks for sustained contributions to the field and successful nominees generally have over 10 years of professional experience beyond the Ph.D. Choose the (8) representative publications and the (10) other contributions 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.