

# DMP NEWSLETTER

## Division of Materials Physics

A Division of The American Physical Society

May 1999

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## Message from the Chair

The APS Centennial Meeting in Atlanta was by all measures an outstanding success! It seemed like every corner of Atlanta was filled with a celebration of Physics. There were over 11,000 participants, significantly more than was initially expected. There were over 8,700 oral and poster presentations, including about 70 sessions sponsored or co-sponsored by DMP. The special Centennial symposia were big hits that drew huge crowds, and the regular sessions were filled with exciting new science. There was also the most remarkable equipment/exhibit show ever. Congratulations and thanks to the many organizers and other volunteers including DMP Past Chair Jim Davenport who helped make this meeting such a success.

Speaking more generally, this is an exciting and challenging time for materials physics. In addition to our individual research efforts, we must collectively take an active role in communicating the benefits of science both to the public at large and to our elected representatives. The goal is to find ways to maintain the vigor of our field within the constraints of a balanced federal budget. DMP is your forum: help us to sustain the vitality of materials physics via innovative programs at the next March Meeting, and by communicating the importance of science in public affairs forums. I urge you to become active in DMP and to encourage others to do so. If you have any suggestions for how the DMP may better serve you, please feel free to contact me by either e-mail (fhellman@ucsd.edu) or phone (619-534-5533).

## Call for Proposals for Y2K Focused Session Topics

The DMP Executive Committee is now actively planning for next year's March Meeting. The heart of the DMP-portion of the meeting lies in our Focused Sessions. Each Focused Session concentrates on a particular area of materials research of current interest, e.g. Fullerenes and Nanotubes, Magnetic Nanostructures, Wide Band-Gap Semiconductors, and Thermoelectrics were some of the Centennial themes. A Focused Session generally includes 30-100 contributed talks spanning several program sessions at the March Meeting. The program sessions are typically focused by inclusion of an invited talk. This allows a coherent and interdisciplinary treatment of important topics in materials physics, and serves as a welcome complement to the traditional invited and contributed sessions at the meeting. The success of the Focused Sessions depends critically on suggestions for appropriate topics from the membership and on the efforts of energetic volunteer organizers.

Suggestions for Focused Sessions, preferably including estimated number of sessions, a brief discussion of the merits of the proposal, a draft call-for-papers, and the names and complete addresses of recommended organizers including phone, fax and e-mail listings, should be sent to me no later than June 15 at:

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# CALL FOR NOMINATIONS

## James C. McGroddy Prize for New Materials

This is a recently reinstated APS prize that was previously called the International Prize for New Materials (from 1975-1994). We want to thank IBM for endowing this important prize; at least one group of Nobel Prize winners was first recognized through this prize. Its purpose is to honor and encourage outstanding achievement in the science and application of new materials. This includes 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 also includes theoretical and experimental work contributing significantly to the understanding of such phenomena. Previous award winners are listed on the APS prize web site. The prize consists of \$5,000 and an allowance for travel to the meeting of the Society at which the award is presented, plus a certificate citing the contribution of the recipient. The prize is open to scientists of all nationalities irrespective of where their work has been carried out. Nominations are active for 3 years. The deadline for submission of nominations for the 2000 Prize is: JULY 1, 1999. Nominations should be sent to the Chair of the 1999 Selection Committee: Millie Dresselhaus, MIT. Details on how to make a nomination are available on the DMP web page.

## Adler Lectureship Award

DMP administers the APS David Adler Lectureship Award, given annually to an outstanding contributor to the field of materials physics who is noted for his or her research, review articles, and lecturing. This lectureship was endowed in 1988 by contributions from friends of David Adler, in honor of his distinction both in research and in his ability to communicate the results of this research. The Lectureship consists of a \$1,000 honorarium and a certificate citing the contribution made by the recipient. The award will be made at the March APS meeting where the lecturer will present an invited talk before the appropriate focused session of the Division of Materials Physics. Adler Award nominations should be sent to Frances Hellman, address above, no later than JULY 1, 1999. Details on how to make a nomination are available on the DMP homepage.

## APS Fellows

DMP can recommend 8-10 individuals each year for designation as Fellows of the APS. Nomination forms and instructions are available on the DMP homepage. Fellowship nomination packages are due at APS no later than February 15, 2000 for awards announced prior to the 2001 March Meeting. Remember to indicate DMP as the division to consider the nomination.

## OUTREACH TO HIGH SCHOOLS AND COLLEGES

DMP in conjunction with DCMP and with a generous contribution from Lucent Technologies decided to use the beautiful and very illustrative report "The Physics of Materials - How Science Improves Our Lives" (published by the National Academy Press, Washington DC, 1997) to reach out to the public. We will be printing over 30,000 copies of this brochure, and sending them to universities, colleges, and high schools nationwide. We are currently working on the wording of a letter to accompany this report.

## OUTREACH TO CONGRESS: Help and Simple Effective Demos Wanted

In addition to our work in organizing March Meeting Focus Sessions and in recognizing professional accomplishments through awards and fellowships, the DMP actively represents the interests of the materials physics community by outreach efforts. We make direct contacts with members of the legislative and executive branches in Washington, and we are members of the Federation of Materials Societies. In April, we participated in Congressional Visit Days, which was a multi-society effort to make the point that science matters to the well being of the USA. See the detailed report below by Dan Pierce. We thank those who volunteered their time to participate in this. We are always looking for ways to improve communication with elected government representatives, and this requires efforts on the part of all of us! Contact Frances Hellman (fhellman@ucsd.edu), or Mike Lubbell (lubell@aps.org) or Francis Slakey (slakey@aps.org) at the APS, for ways you can help if you have time. We are currently considering another Congressional visit in June, in the form of a reception. For this, we want to bring simple but effective demonstrations that will impress our congressional representatives and their staff. If you have suggestions, particularly for demonstrations, please contact me.

## DMP Homepage

Be sure to visit the DMP Homepage (<http://www.aps.org/units/dmp/>) as a source of upto date information on DMP activities, and to supplement our "paper" newsletters. Please also contribute to our colorful "Images of Materials" display.

# NRC Sequel to the Brinkman Report now Completed

The National Research Council (NRC) under the auspices of the National Academy of Sciences commissioned an assessment of the field of condensed matter and materials physics, a project that will serve as the successor to the 1986 Brinkman report. The Brinkman report had a strong influence on funding agencies over the past decade, and it is expected that the present report will have similar impact. The Committee on Condensed-Matter and Materials Physics, whose membership includes a number of DMP members, has now completed this study, as well as a short report entitled "The Physics of Ma-

terials - How Science Improves Our Lives" (published by the National Academy Press, Washington DC, 1997). This short report was distributed at the APS 1998 March Meeting. It highlights some of the fundamental science at the forefront of research in the field and demonstrates, through illustrative examples, the field's impact on our everyday lives. The web posting of both the short and full-length reports can be accessed from the DMP homepage. We at DMP wish to thank the participants of the Committee who worked very hard on producing these reports.

## DMP Election Results

Len Feldman was elected Vice Chair, Sam Bader was re-elected as Secretary-Treasurer, and Esther Conwell, Joe Greene, and Jeff Lynn were elected Members at Large of the DMP Executive Committee. The 1999-2000 Roster appears below. We thank all of the participants in the election, and Jim Roberto who counted the ballots. We also thank those who just retired from their service on the Executive Committee, including former Past Chair Jim Roberto, and former Members at Large Bob Laibowitz and David Price.

## DMP ROSTER

### Division of Materials Physics 1999-2000 Executive Committee

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# CONGRESSIONAL VISITS DAY UPDATE

Jim Davenport, DMP Past Chair, and Dan Pierce, DMP Executive Committee Member, took part along with 200 others in the fourth annual Congressional Visits Day on April 21-22, 1999. Congressional Visits Day is designed to raise the visibility and support for science, engineering and technology in Washington. The event is co-sponsored by two groups: (i) the Science-Engineering-Technology Work Group and (ii) the Coalition for Technology Partnerships. There is a web site with more information at <http://www.agiweb.org/cvd/>. The Science-Engineering-Technology Work Group is an information network comprising over 50 professional, scientific, and engineering societies, institutions of higher learning, and trade associations. The APS is a member of the Work Group as is the Federation of Materials Societies of which DMP is also a member. The Work Group is concerned about the future vitality of the U.S. science, mathematics and engineering enterprise. The Coalition for Technology Partnerships is a group of over 100 businesses, trade associations and technical societies that have joined forces to demonstrate that partnerships between government and industry reflect the realities of today's budget climate and technology development mechanisms.

Congressional Visits Day started with a series of briefings to educate and orient those of us taking part. Representatives of the Administration from NSF, NIH, NASA, and the Departments of Defense, Energy, Commerce and Transportation presented the R&D budget picture for their agencies. Owing to the President's frugal R&D budget requests and Congressional budget caps, the trends in R&D funding are generally bleak. The atmosphere was lightened somewhat by Dan Goldin's (NASA) vision of space exploits of the future, and the quip of Ernie Moniz (DOE), comparing science funding increases of NIH and DOE, "the former Soviet Union proved to be a much less reliable enemy than death and disease."

A walk of several blocks through the rain took us to the Headquarters of the

AAAS where, after hearing the AAAS overview of Federal R&D, we were welcomed by Rep. Connie Morella (R-MD), Chair of the House Subcommittee on Technology. She said the economic case for science is a good one; ideally the clamor for investment in R&D would come from the U.S. Chamber of Commerce, an organization understood by her Republican colleagues. A panel of three Congressional Staff discussed issues regarding R&D funding and concerns about the Shelby amendment that relates to the disclosure of research information. It was pointed out that the three key ingredients of economic growth are (i) an appropriately skilled labor force, (ii) availability of capital, and (iii) technological innovation. Economic studies have attributed 50% of our current economic growth to technology. Some 80% of the stock market value is in technology-based companies. However, the technology of today is based on the research of the past. Thus, R&D is not an expense, but rather an investment in the future economic health of the Nation.

The Congressional visits began with a breakfast in the Rayburn House Office Building and an address by House Science Committee Chair James Sensenbrenner. Participants then went in small groups to visit the offices of Senators and Representatives, usually their own as well as others where there was some connection. We had been coached to be on time but prepared to wait, to be succinct, and to explain how what we were discussing impacts the State or District the Senator or Congressman represents. Our core messages were that: (i) Federal investment in science, engineering and technology is important for the Nation, and (ii) partnerships between government, universities and industry mean progress, economic growth and jobs. The impact of such visits is not immediate but builds over time. To the extent possible, it is advantageous for each of us in DMP to build a relationship with our elected representatives by writing or calling about current issues, making visits, being a resource for information, or otherwise getting involved.

## Y2K Focused Session Topics, Continued

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The DMP Executive Committee, during the month of June, uses these suggestions to finalize the list of March Meeting sessions and organizers. Once topics are selected, it is the responsibility of the Focused Session organizers to arrange and publicize their program, including soliciting recommendations and submitting suggestions for invited speakers, soliciting contributed talks from the appropriate scientific community, and sorting abstracts at the December sorters meeting at APS Headquarters.

We want to thank the organizers of the 1999 Focused Sessions for their efforts; the resulting program was terrific! The commitment and perspective of these organizers are essential to the creation of a compelling program. Please do consider volunteering yourself (or a colleague!) to organize one for next year's program.

### DMP Membership

**The resources available to DMP for its various activities depend directly on the number of APS members who are affiliated with DMP. Therefore, we urge that you continue your affiliation with DMP and recruit your colleagues who may not yet be DMP (or APS) members to join.**