

DMP NEWSLETTER

Division of Materials Physics

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Winter 2003

The 2003 March Meeting of the American Physical Society will be the largest March meeting with 5668 abstracts. The Focus Topics, which are being sponsored by DMP alone or co-sponsored with other Divisions, are as popular as ever as vehicles for bringing together people working in areas of current interest in materials physics. In addition to the Focus Topics, DMP and DCOMP will have a prize session on Monday, March 3rd starting at 11:15am; a joint reception with DCMP and DCOMP to honor our respective prize winners and new APS Fellows on Tuesday evening from 5:30pm to 7:00pm, and the DMP business meeting which follows at 7:00pm.

During the past 25 years or so, there has been a revolution in materials physics with the development of techniques to synthesize heterostructures and nanostructured materials. This year the APS honors two people who have played pivotal roles in the development of these techniques and in exploring the properties of these new materials. Charlie Lieber receives the James C. McGroddy Prize in New Materials, which is endowed by IBM, for his work on nanostructured and functional nano-structured materials, and Ivan Schuller receives the David Adler Lectureship Award, which is endowed by friends of David Adler, for research in metallic heterostructures and superlattices. Both of the Prize/Award winners will present overviews of their respective fields in the prize session. In addition Louis Brus, who won the 2001 Irving Langmuir Prize “for establishing the field of semiconductor nanocrystals through innovative synthesis, spectroscopy, and theory,” and Charlie Falco, who is a leader in the field of multilayers, will present their recent results. The Prize session is joint with DCOMP, and the last talk in the session will be given by Steven White from UC Irvine, who is the Rahman Prize winner; he will talk on the density-matrix renormalization group.

The joint DCMP/DCOMP/DMP reception on Tuesday evening provides an opportunity to congratulate our prize/award winners and the newly elected APS Fellows. The awarding of Fellowship is highly competitive and, as those who have served on Fellowship Committees will tell you, making the final selections from many deserving candidates is very difficult. Please note the call for nominations for Fellowship in this Newsletter.

A major task of the DMP Executive Committee is to stimulate and then choose Focus Topics for the next March meeting. The DMP also relies on the hard work of the many Focus Topic organizers who assemble the sessions. The Executive Committee seeks input for future meetings and feedback on past meetings so as to continue to improve the meetings. You are encouraged to attend the Business Meeting after the reception on Tuesday evening and to give the Executive Committee your input as they start to consider what areas of Materials Physics to emphasize in the 2004 March Meeting.

There are two evening sessions at the March Meeting which address the future directions of physics research and ethics in research. On Monday evening there is

DATES TO REMEMBER:

Feb. 15, 2003

DMP deadline for APS Fellow Nominations.

March 3-7, 2003

March Mtg. in Austin, TX

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Our Award Winners are...

Charles M. Lieber (Harvard University)

James C. McGroddy Prize in New Materials (endowed by IBM):

Citation: “For his outstanding contributions in nanostructured and functional nanostructured materials”.

Ivan K. Schuller, (UCSD)

David Adler Lectureship Award (endowed by friends of David Adler):

Citation: “For research in metallic heterostructures and superlattices, communicated with unusual enthusiasm and eloquence.”

“Dream for the Future of Physics: Where are we? Where are we going?” On Wednesday evening there is “Professional Conduct: What can we learn from recent events?” Both of these areas are important for the overall health of physics. It is always good to take time from thinking about our own special area to think about where our research fits into the overall field of physics. At the same time recent events lead us to reexamine how we conduct research and report the results of our research. Members are encouraged to read the revised “APS Guidelines for Professional Conduct” (<http://www.aps.org/statements/02.2.html>).

The APS and other scientific societies continue to provide the U.S. Congress with background information on the importance of basic research for the economic health of the country. There is general agreement in Congress of the need for a strong research community, but the present dangers from terrorism and from the declining economy put enormous pressure on the budget. In part as a result of the efforts of the APS and our sister societies, H.R.

4664, the “National Science Foundation Authorization Act of 2002,” was signed by President Bush. This bill calls for the doubling of the NSF budget over 5 years. The challenge this year will be to turn this authorization bill into corresponding appropriations. At the same time the APS is working to get support for HR5270, the Energy and Science Research Investment Act of 2002, which will be resubmitted this year. This bill calls for increases in the budget of the Office of Science in the DOE and for the appointment of a new Under Secretary to coordinate all civilian science research programs in the DOE. With each new Congress the process of informing your Representative and Senators of the importance of the NSF and DOE appropriations has to begin again. In these times of tight budgets, it is especially important for the physics community to communicate with their elected representatives. The most effective way is through visits to their home offices. In addition Sue Ginsberg and her colleagues will be set up at the March Meeting to help you to write to your Congressmen. Please take the time to help to ensure strong funding for physics research.

2003 Division of Materials Physics Fellows

J. Thomas Dickinson (Washington State University)

For his pioneering and innovative work in basic bond breaking mechanisms, and the forces on particles at solid surfaces during mechanical or radiative stimulation.

Antoine Kahn (Princeton University)

For pioneering work on the atomic and electronic structure of surfaces and interfaces of organic and inorganic semiconductors.

Walter R.L. Lambrecht (Case Western Reserve University)

For his seminal contributions to a better understanding of the electronic structure and linear and nonlinear optical properties of semiconductors, in particular wide band gap semiconductors, chalcopyrites and rare-earth pnictides.

Karin M. Rabe (Rutgers University)

For fundamental contributions to the development and application of theoretical and computational methods for the study of structural phase transitions in solids.

David John Smith (Arizona State University)

For outstanding contributions to the development of atomic-resolution electron microscopy and ongoing applications to oxides, semiconductor heterostructures, and magnetic materials.

Brian S. Swartzentruber (Sandia National Laboratories)

For pioneering studies of atomic-scale, kinetic and thermodynamic aspects of the morphology of Si surfaces, and significant innovations in scanning tunneling microscopy.

Charles Wuching Tu (University of California, San Diego)

For contributions in molecular beam epitaxy of novel III-V semiconductors.

John A. Venables (Arizona State University)

For research on surface growth of metals, insulators, and semiconductors, leading to a fundamental understanding of interatomic interactions and atomic processes, particularly nucleation and growth.

APS Fellow Nominations due Feb. 15

DMP can recommend 8-10 individuals each year for designation as Fellows of the APS. The DMP Fellowship Committee recommends 7 nominations and 2 alternate nominations and, if approved by the Executive Committee, they are forwarded to the APS Fellowship Committee. The Division relies on the membership to submit nominations, and the Executive Committee urges you to check the APS directory to see if distinguished members of your institution are fellows. Quite often there are worthy candidates who never get nominated. Helen Quinn, Chair of the APS Fellowship Committee, has pointed out that Fellows whose address is listed outside the US

are statistically severely underrepresented. In order to stimulate more nominations of foreign fellows, they have instituted a third category which in effect can increase the total number of nominations that DMP can forward to the APS if certain criteria are met. Nomination forms and instructions are available on the DMP homepage. Fellowship nomination packages are due at APS no later than February 15, 2003, for awards announced prior to the 2004 March Meeting. Remember to indicate DMP as the division to consider the nomination.

DMP Election Results

Vice- Chair: Lynn A. Boatner (Oak Ridge National Laboratory)

**New Members-at-Large: Eric Chason (Brown University)
Jacqueline Krim (North Carolina State University)**

In keeping with the national trend in elections, participation was lamentable: only about 10% of DMP members voted. A statistically significant number of DMP members did not follow instructions for balloting, requiring inspection of ballots to determine intent (but happily without need to consider chads). The race for Members-at-Large was as close as can be. We congratulate the winners and continue to benefit from the willingness of excellent people to run for office and to serve our division.



AMERICAN PHYSICAL SOCIETY

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