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A Message from the Chair

This Newsletter presents highlights of the DMP sessions and activities of the upcoming March Meeting, the recipients of the Adler Award and McGroddy Prize, the new APS Fellows supported through the DMP, the student travel award winners, and the newly elected members of the DMP Executive Committee.

Now is the time to propose new Focus Topics for the 2012 March Meeting. The DMP focus topics are a major component of the March Meeting providing numerous sessions on advancing areas of interdisciplinary materials physics. Your colleagues will appreciate and benefit from new topics that capture the exciting new directions of our field. Please consider proposing a new Focus Topic now!

This is also a time to consider nominating a distinguished colleague for one of the DMP supported recognitions – the David Adler Lectureship Award in the Field of Materials Physics, and the James C. McGroddy Prize for New Materials.

New materials, materials phenomena and applications represent the interdisciplinary basis for Materials Physics. Advancements in materials drive almost all new technologies, which affect every aspect of our society. Advances in materials physics may involve students in college and university laboratories as well as large teams of leading researchers taking advantage of national facilities such as nanotechnology centers, neutron scattering capabilities, and accelerator based light sources.

Much new physics arose by the discovery of new phenomena in materials including superconductivity, ferroelectricity, multiferroicity, nanoscience, etc, and Materials Physics researchers continue to bring excitement and new ideas to Physics with new materials such as graphene.

In spite of this, the importance of Materials Physics needs further articulating for our colleagues in the field and for the public in general. The Division of Materials Physics continues to support activities that communicate the excitement and impact of materials physics to our government leaders and to the public.

New students are the basis for the vital future of the field. We greatly appreciate receiving funds to support student travel awards. Drawing from a very strong list of applications, it is a pleasure to announce the 2011 recipients of the Iris Ovshinsky Student Travel Awards below.

Many people contribute to the success of the March Meeting, to the activities of the APS and to the continued advancement of Materials Physics, on behalf of the DMP it is our pleasure to extend our thanks to each and every one.

We looking forward to seeing you in Dallas,

Robert Nemanich, Chair
Division of Materials Physics

New members of the Executive Committee

The following members were elected to serve in the DMP Executive Committee

Vice Chair: David Cahill
Secretary/Treasurer: Chris Palmstrøm
Member at Large: Bruce Harmon
Member at Large: Charles Ahn

We congratulate the new members of the Executive Committee and look forward to their participation and leadership.

Call for DMP Focus Session Topics for 2012 APS March Meeting

The Division of Materials Physics organizes a large number of Focus Topics for each APS March Meeting. A Focus Topic generally consists of a series of sessions, each of which is typically seeded with one invited talk, the remainder of the session being composed of contributed talks (see <http://www.aps.org/units/dmp/newsletters/summer2010.cfm#categories> for a list of Focus Topics for the 2011 March Meeting). While many Focus Topics are continued from year to year, some are removed and some new topics are added in fields of current interest.

We are now soliciting new ideas for Focus Topics for the 2012 March Meeting, and we hope you will send suggestions. Your suggestions should provide the following information:

- Title of the Focus Topic
- The nominator's name, affiliation, phone number and e-mail address
- Suggestions for possible organizers
- A brief description of the scope of the topic.

Please send your suggestions by March 15 to Darrell Schlom (schlom@cornell.edu), who will be the DMP Program Chair for the 2012 meeting. Suggestions received after March 15 will be reviewed by the DMP Executive Committee if time allows.

March Meeting: Location

The 2011 March Meeting of the APS will take place, March 21-25, 2011 in the Dallas Convention Center (DCC), Dallas, TX. All scientific sessions will be in the Dallas Convention Center (DCC) but events and activities may be in DCC or the Hyatt Regency Hotel. Check event details for time and place. Bussing will be provided to the convention center from all hotels not within walking distance.

For further information see:

<http://www.aps.org/meetings/march/index.cfm>

March Meeting: DMP Sponsored Meetings

The Division of Materials Physics will sponsor the following meetings during the 2011 March meeting in Dallas. This is your opportunity to interact with the Executive Committee and to become informed of the activities of the Division.

Hyatt Regency, 300 Reunion Boulevard, Dallas, Texas, USA 75207

Tel: +1 214 651 1234 Fax: +1 214 742 8126

Tuesday, March 22:

DCMP/DMP/DCOMP/DCP New Fellows and Award Winners Reception

5:30 p.m. - 7:00 p.m.

Hyatt Regency Hotel

DMP Business Meeting

7:00 p.m. - 8:00 p.m.

Reverchon B

Hyatt Regency Hotel

The American Physical Society-Division of Materials Physics Iris Ovshinsky Student Travel Awards

The Iris Ovshinsky Student Travel Awards have been established to assist the career of student researchers. The Awards are named after Iris Ovshinsky who had a very strong interest and commitment to scientific education. The awards have been endowed by the Ovshinsky family, their colleagues at Energy Conversion Devices (ECD) companies and all their numerous friends from many social, intellectual and business relationships.

The Iris Ovshinsky Student Travel Awards will be presented on at the DCMP/DMP/DCOMP/DCP New Fellows and Award Winners Reception, Tuesday, March 22, 5:30 p.m. - 7:00 p.m. in the Hyatt Regency Hotel

We are extremely grateful to the Ovshinsky family for this award. Special thanks go to Prof. Brian Schwartz who has made this award possible and for all his efforts on behalf of Materials Physics over the years.

The winners of the 2011 Iris Ovshinsky Student Travel Awards for Materials Physics are:

NAME	INSTITUTION
E. Akatyeva	Univ. of Minnesota
W.-P. Hsieh	UIUC
Irfan	Univ. of Rochester
B. Jalan	UCSB
X. Jia	MIT
J. Lyons	UCSB
G. Sheng	Pen State Univ.
J. Varley	UCSB
J. Velasco	UC Riverside
P. Yu	UC Berkeley

Award and Prize Winners

David Adler Lectureship Award in the Field of Materials Physics

[Stephen Pearton](#), University of Florida

"For contributions to the development of compound semiconductor processing methods crucial to the development of electronic and photonic devices."

James C. McGroddy Prize for New Materials

[Arthur P. Ramirez](#), University of California, Santa Cruz

"For the intellectual leadership in the identification of geometrically frustrated magnets as an important class of materials."

2010 Fellows nominated by DMP:

Ahn, Charles

Yale University

Citation: For the elucidation of novel behavior in complex materials subjected to intense ferroelectric fields, and for seminal contributions to the understanding of nanoscale interfacial phenomena in complex oxides.

Asta, Mark

University of California, Davis

Citation: For fundamental contributions to the physics of materials through ab initio density functional theoretical studies.

Bellaiche, Laurent

University of Arkansas

Citation: For pioneering contributions to the first-principles theory of semiconductor alloys and ferroelectric materials.

Christen, David

Oak Ridge National Laboratory

Citation: For sustained discovery and leadership in understanding of superconductive materials, especially their current conduction and vortex state properties.

Dravid, Vinayak

Northwestern University

Citation: For seminal contributions to the materials physics of functional materials through the use of state of the art electron microscopy techniques.

Geohegan, David

Oak Ridge National Laboratory

Citation: For pioneering work in understanding and controlling nonequilibrium growth processes of thin films and nanomaterials through real-time laser spectroscopy, imaging, and plasma diagnostic investigations.

Jiang, Hongxing

Texas Tech University

Citation: For his seminal works in the area of III-nitride wide bandgap semiconductors. In particular, for his significant contributions to the understanding of fundamental optical and defect properties and practical applications of III-nitrides and pioneering contributions to the field of nanophotonics.

Jin, Rongying

Louisiana State University

Citation: For her significant contributions to materials physics, including science-driven

materials development and pioneering studies of their underlying physics.

Ma, En

Johns Hopkins University

Citation: For pathbreaking research and outstanding publications on metastable, amorphous, and nanocrystalline metals and alloys, and international outreach in the metallic materials field.

Reimer, Jeffrey

University of California, Berkeley

Citation: For the design and analysis of in situ spectroscopic studies of materials and electrochemical processes.

Rez, Peter

Arizona State University

Citation: For theoretical and computational developments in electron microscopy and electron spectroscopy of materials.

Takagi, Hidenori

University of Tokyo

Citation: For outstanding contributions to the exploration of the physics and materials science of strongly correlated transition metal oxides.

Weber, William

University of Tennessee

Citation: For his seminal contributions and scientific leadership in the materials physics of defects, defect processes, ion-solid interactions and radiation damage processes in ceramics.

Wolverton, Christopher

Northwestern University

Citation: For innovative contributions to atomic- and multi-scale computational materials physics, particularly in the area of phase stability of materials.

March Meeting: DMP Sponsored Symposia & Special Events

I. Session D3: Materials for Energy Ballroom A3

Sponsoring Units: DMP GERA

Room: Ballroom A3; Monday, March 21, 2011 2:30PM - 5:30PM

2:30AM-3:06PM

D3.00001: Material tradeoffs in direct thermal to electric energy conversion systems ,

Invited Speaker: Ali Shakouri

3:06PM-3:42PM

D3.00002: Photophysics of Strongly Confined Multiexcitons from the Perspective of Lasing and Solar Energy Conversion

Invited Speaker: Victor Klimov

3:42PM-4:18PM

D3.00003: Engineering Interfaces for Photovoltaic Energy Conversion,

Invited Speaker: Stacey Bent

4:18PM-4:54PM

D3.00004: Experimental and Theoretical Studies on Phonon Mean Free Path in Thermoelectric Materials

Invited Speaker: Gang Chen

4:54PM-5:30PM

D3.00005: Progress in Materials for Solar Energy Conversion

Invited Speaker: Eicke Weber

II. Session P3: Adler, IAP, Pake Award/Prize Prize Session

Sponsoring Units: DMP DCMP FIAP

Room: Ballroom A3; Wednesday, March 23, 2011

Chair: Thomas Theis, IBM T.J. Watson Research Center

8:36AM - 9:12AM

P3.00002: David Adler Lectureship Award in the Field of Materials Physics Talk: Novel Nitride and Oxide Electronics

Invited Speaker: Stephen Pearton

III. Session T3: Buckley, McGroddy, Davisson-Germer Award/Prize Session

Sponsoring Units: DCMP DMP

Room: Ballroom A3; Wednesday, March 23, 2011

Chair: Ward Plummer, Louisiana State University

4:18PM - 4:54PM

T3.00004: James C. McGroddy Prize for New Materials Talk: Geometrically Frustrated Materials

Invited Speaker: Arthur Ramirez

IV. Session V5: Physics for Everyone

Sponsoring Units: DMP DCMP

Room: Ballroom C1; Thursday, March 24, 2011

Chair: Ivan Schuller, University of California, San Diego

8:00AM - 8:36AM

V5.00001: Biomagnetism and Magnetotaxis in Bacteria: What Bacteria Know About Magnetic Materials and Permanent Magnet Design

Invited Speaker: Richard Frankel

8:36AM - 9:12AM

V5.00002: Voodoo Science

Invited Speaker: Robert Park

9:12AM - 9:48AM

V5.00003: M&Ms Packing and Research with Undergrads

Invited Speaker: Paul Chaikin

9:48AM - 10:24AM

V5.00004: Science and Cooking: Motivating the Study of Freshman Physics

Invited Speaker: David Weitz

10:24AM - 11:00AM

V5.00005: Making a frothy shampoo or beer

Invited Speaker: Douglas Durian

V. Session W3: Advances in ZnO Physics and Applications

Sponsoring Units: DCMP DMP

Room: Ballroom A3; Thursday, March 24, 2011

Chair: Scott Chambers, Pacific Northwest National Laboratory

11:15AM - 11:51AM

W3.00001: Hybrid functional studies of defects and impurities in ZnO

Invited Speaker: John Lyons

11:51AM - 12:27PM

W3.00002: Limits of Conductivity in ZnO Thin Films: Experiment and Theory

Invited Speaker: David C. Look

12:27PM - 1:03PM

W3.00003: The Electronic Properties of Native Point Defects at ZnO Surfaces and Interfaces

Invited Speaker: Leonard Brillson

1:03PM - 1:39PM

W3.00004: Realization of high performance random laser diodes

Invited Speaker: S.F. Yu

1:39PM - 2:15PM

W3.00005: Nanogenerators and Piezotronics

Invited Speaker: Zhong Lin Wang

March Meeting: APS Special Symposia & Events

APS Prizes & Awards Ceremonial Session

Monday, March 21

5:45 p.m. - 6:45 p.m.

Convention Center

- Prizes and awards will be bestowed on several individuals for outstanding contributions to physics. Please plan on attending the Awards Program and join us in honoring these individuals. The names of the awards and awardees will be included in the printed Preamble distributed at the Meeting.
- The Welcome Reception will begin immediately following the Awards Program.

Nobel Prize Session

Wednesday, March 23

5:45 p.m. - 7:00 p.m.

Ballroom A1

Chair: Warren Pickett

Konstantin Novoselov “Graphene: Materials in the Flatland”

Physics Nobel Laureate (2010)

Session J3: Nobelist Perspectives on 100 Years of Superconductivity

Kavli Foundation Special Symposium

Tuesday, March 22; 11:15 a.m.

Ballroom A3

Chair: Warren Pickett

11:15AM - 11:51AM

Theoretical work on superconductivity up to 1956

Invited Speaker: Anthony Leggett

11:51AM - 12:27PM

The Exceptional Properties of Superconductivity in Cuprates

Invited Speaker: K.A. Mueller

12:27PM - 1:03PM
Discovery of Superconductive Tunneling
Invited Speaker: Ivar Giaever

1:03PM - 1:39PM
Superconductivity and particle physics
Invited Speaker: Frank Wilczek

1:39PM - 2:15PM
Superfluidity in an Atomic Gas of Strongly Interacting Fermions
Invited Speaker: Wolfgang Ketterle

Session Q2: Superconductivity Centennial: Future Research Developments

Kavli Foundation Special Symposium

Wednesday, March 23

11:15 p.m. - 2:15 p.m.

Convention Center

Ballroom A2

Chair: Zachary Fisk

11:15 a.m. - 11:51 a.m.
Superconductivity: A Continuous Surprise or "How I Learned to Love the Surprises"
Invited Speaker: Robert Dynes

11:51 a.m. - 12:27 p.m.
Research opportunities in new superconducting materials
Invited Speaker: L.H. Greene

12:27 p.m. - 1:03 p.m.
Iron-based superconductors and relevant materials: progress and opportunity
Invited Speaker: Hideo Hosono

1:03 p.m. - 1:39 p.m.
Exploring electron-phonon interactions in superconductors
Invited Speaker: Marvin Cohen

1:39 p.m. - 2:15 p.m.
Electronic Pairing Interactions
Invited Speaker: D.J. Scalapino

March Meeting: Premeeting Workshops

DPOLY Short Course

Saturday, March 19 - 12:30 p.m. Sunday, March 20 - 8:30 a.m.

Physics Careers in Industry and Government

Sunday, March 20 - 8:30 a.m.

Industrial Physics Forum (IPF)

Sunday, March 20 - 1:00 p.m. & Monday, March 21 - 8:00 a.m.

Improving Your Skills as a Research Mentor

Sunday, March 20 - 1:30 p.m.

Careers In Physics Workshop

Sunday, March 20 - 5:00 p.m. DCC Room C140

March Meeting: Tutorials

Sunday, March 20
Dallas Convention Center
Tutorial Program Chair
Mark Johnson, Naval Research Laboratory, Washington, DC

Morning Tutorials

Convention Center
8:30 a.m. - 12:30 p.m.
Tutorial #1
Spintronics
Tutorial #2
Complex Oxides
Tutorial #3
Topological Insulators
Tutorial #4
Microfluidics

Afternoon Tutorials

Convention Center
1:30 p.m. - 5:30 p.m.
Tutorial #5
Graphene
Tutorial #6
New Directions in Biological Physics
Tutorial #7
Quantum Simulation and Computing with Atoms
Tutorial #8
GPU Programming Applied to Condensed Matter Physics

March Meeting: Tutorial for Authors and Referees

Sponsored by APS Journals
Tutorial for Authors and Referees
Wednesday, March 23 - 8:00 a.m. DCC D225-226
APS Journals Booth
Monday - Wednesday, March 21-23, 10:00 a.m. Exhibit Hall
APS Editorial Q & A
Tuesday, March 22 - 3:00 p.m. DCC D223-224
Meet the Editors of AIP and APS Reception
Tuesday, March 22 - 4:00 p.m. DCC Lobby E
"Trends" in the APS Publication Physics
Wednesday, March 23 - 7:30 p.m. Hyatt Reunion A-D

DMP Executive Committee

The Executive Committee Officers for the 2011-2012 year, who begin their terms immediately following the March meeting in Portland, are:

Chair: Peter Schiffer (03/11 – 03/12)
Penn State University

Chair-Elect: D.G. Schlom (03/11-03/12)
Cornell University

*Vice Chair: David Cahill (03/11-03/12)
Univ. of Illinois Urbana Champaign

Past Chair: Robert Nemanich (03/11 – 03/12)
Arizona State University

Secretary/Treasurer: Chris Palmstrøm (03/11-03/14)
University of California, Santa Barbara

Councilor: Theodore L Einstein (01/09 - 12/12)
University of Maryland-College Park

Members-at-Large:

David J. Sellmyer (03/09 – 03/12)
University of Nebraska

Nicola Spaldin (03/09 – 03/12)
ETH Zurich

Amanda Petford-Long (03/10 – 03/13)
Argonne National Laboratory

Philip Duxbury (03/10 – 03/13)
Michigan State University

*Bruce Harmon (03/11 - 03/14)
Ames Laboratory

*Charles Ahn (03/11 - 03/14)
Yale University

*Newly elected