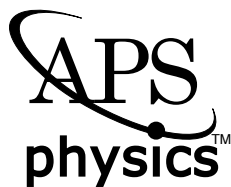


Edited by Sam Bader



A Division of the
American Physical Society

DCMP Newsletter

The Division of Condensed Matter Physics

Winter 2010

Dear DCMP Members,

We bring you this Winter Newsletter to make a number of announcements that you should find of great interest. These include: our election results, our Buckley and Davisson-Germer Prize winners, and our new APS Fellows sponsored by DCMP. We also provide a glimpse of 2011 APS March Meeting events that DCMP organized or is co-sponsoring. This includes invited sessions with a variety of exciting scientific themes, award sessions, and innovative outreach/education sessions. You will still need to find detailed information in the APS March Meeting Program and Show Guide for 2011. But we thought that you would enjoy getting an overview of what is in store for Dallas, Texas from March 20-25.

We especially point out that we will be celebrating the Discovery of Superconductivity by Heike Kamerlingh Onnes in 1911 with a trio of Superconductivity Centennial Symposia. One is dedicated to historical perspectives, sponsored by the APS Forum on the History of Physics (FHP), one provides perspectives by Nobel prize winners in superconductivity and related fields, and one is dedicated to future research opportunities. The latter two symposia we co-sponsored with the Division of Materials Physics (DMP).

The DCMP invited symposia and special events that are listed in this Newsletter involve about 220 invited speakers. The DCMP program itself will encompass contributed sessions with thousand of additional presenters. You will be able to choose from approximately 7,700 presentations overall. The March Meeting is your meeting! We hope you will enjoy it! We invite you to participate in our DCMP-co-sponsored Reception followed by our Business Meeting where you can tell the members of our Executive Committee of your vision for the future of our Division.

We hope to see you in Dallas!

—Sam Bader, Chair Elect & 2011 DCMP Program Chair

DCMP Election Results

Here are the results of the 2010 Division of Condensed Matter Physics election for Vice-Chair, Secretary-Treasurer, and Members-at-Large of the Executive Committee:

Vice-Chair: Allan MacDonald

Secretary-Treasurer: Nicholas Bonesteel

Members-at-Large: Jim Sauls, Nandini Trivedi, Nai-Chang Yeh

Approximately 21% of the 5631 DCMP members voted in this election.

I would like to extend congratulations to those elected, and express my gratitude to all those who agreed to stand as candidates — the Division greatly benefits from our colleagues who are willing to run for office and serve the condensed matter physics community.

I would also like to thank our colleagues who are leaving office: David Pine (Past Chair), and Bill Halperin, Jainendra Jain, and Beth Parks (Members-at-Large). All four have performed valuable service for the Division.

Finally, a warm thanks to Paul Goldbart, Chair of the Nominating Committee; to Irina Bariakhtar, our webmaster, who formatted the biographical information and statements for the DCMP website and APS election site; and to Jim Egan and his IT colleagues at the APS.

—Alan Dorsey, DCMP Secretary-Treasurer

Editor's Note: And we are deeply grateful to our retiring Secretary-Treasurer, Alan Dorsey, for his selfless dedication and outstanding service to the Division.

Join DCMP Please tell your colleagues about DCMP and encourage them to join.
Instructions appear on the APS website on how to affiliate and DCMP.

To become an APS member, go to: www.aps.org/membership/join.cfm

For APS members to join DCMP or any other APS unit: www.aps.org/membership/units/join-unit.cfm

New APS Fellows Sponsored by DCOMP

BELITZ, DIETRICH

University of Oregon

For work on classical and quantum phase transitions, and the nature of phases affected by generic scale invariance.

BESENBACHER, FLEMMING

University of Aarhus

For contributions to the understanding of atomic scale processes on solid surfaces, leading to breakthroughs in catalysis and nanotechnology.

CROOKER, SCOTT

Los Alamos National Laboratory

For the development of magneto-optical spectroscopies and their applications to colloidal quantum dots and electron spin transport and noise in semiconductors.

DING, HONG

Chinese Academy of Sciences

For contributions to the understanding of strongly correlated materials, particularly the high-temperature superconductors.

DOBROSAVLJEVIC, VLADIMIR

Florida State University

For research on fundamental localization processes near the metal-insulator transition, particularly the interplay of strong electronic correlations, disorder, and quantum glassy dynamics.

ENGEL, LLOYD

Florida State University

For contributions to the study of the quantum Hall effects and associated electron solid phases using microwaves in very high magnetic fields.

FICHTHORN, KRISTEN

Penn State University

For simulations that revealed new phenomena in the kinetics of reaction systems, self-assembly of nanostructures, and diffusion in mesoporous systems.

FUHRER, MICHAEL

University of Maryland, College Park

For experimental studies of the electronic transport properties of carbon nanotubes and graphene.

FURTAK, TOM

Colorado School of Mines

For contributions to the understanding of surface enhanced Raman scattering.

GILBERT, PUPA

University of Wisconsin

For contributions to synchrotron spectromicroscopy and its application to cancer therapy, tribology, and biomineralization.

MCQUEENEY, ROBERT

Iowa State University

For the development and use of neutron scattering techniques to advance the understanding of strongly correlated electron systems.

MUDRY, CHRISTOPHER

Paul Scherrer Institute

For contributions to the theory of spin-charge separation in strongly correlated systems and to disorder-induced quantum criticality in metals and topological insulators.

RUCKENSTEIN, ANDREI

Boston University

For advances in the theory of Bose condensation and collective effects in atomic gases, the Hubbard and non-Fermi liquid impurity models, and high-temperature superconductivity.

RUDOLF, PETRA

Zernike Institute for Advanced Materials

For explorations of fullerenes, nanotubes, graphite, and graphene, as well as light-driven synthetic molecular motors.

SINOVA, JAIRO

Texas A&M University

For contributions to the understanding of spin-transport in magnetic systems, particularly the spin Hall effects.

SOORYAKUMAR, RATNASINGHAM

Ohio State University

For the elucidation of structure, charge, and spin dynamics in condensed matter systems via Raman and Brillouin light-scattering, and for the development of mobile magnetic traps for micro-manipulation.

SRAJER, GEORGE

Argonne National Laboratory

For applications of synchrotron radiation to phase transitions and the structural and magnetic properties of single crystals, multilayers, and liquid crystals.

STRINATI, GIANCARLO

University di Camerino

For contributions to the understanding of strongly interacting Fermi gases, including the physics of the BEC-BCS crossover.

WANG, JIN

Argonne National Laboratory

For contributions to the understanding of nanoparticle/polymer thin films and superlattices, and for the development of time-resolved X-ray methods for characterizing the structure of dense liquid sprays.

ZASADZINSKI, JOHN

Illinois Institute of Technology

For contributions to superconducting tunneling spectroscopy.

DCMP March Meeting Invited Sessions and Special Events

2011 MARCH MEETING DCMP INVITED SESSIONS

MONDAY MARCH 21

- 8:00 Silicon Qubits
Compressibility and Transport in Bilayer Graphene
Experimental studies of 5/2 fractional quantum Hall effect
Single Molecule Biophysics I: Recent Adv in Tech & Apps (DBP/DPOLY)
- 11:15 Quantum devices based on semiconductor nanowires
Many-body effects for the excited states of graphene
- 14:30 New Developments in Quantum Criticality
Topological Surface States
Physics of Proteins I: Unifying Principles and Concepts (DBP/DPOLY)

TUESDAY MARCH 22

- 8:00 Spin-Triplet Supercurrents in S/Ferromagnet/S Josephson Junctions
New materials for spin quantum Hall effect and topological insulators
- 11:15 Towards Single Spin Electronics
Force Probes of Materials' Structure and Function
Topological Vortices in Magnets, Ferroelectrics, and Multiferroics
- 14:30 Recent advances in ultrafast studies of condensed matter (DCP)
Single molecule transistors & graphene quantum dots
Gap Structure of the Ba-122 Iron Superconductors

WEDNESDAY MARCH 23

- 8:00
Magnetism and localization in f electron systems
The Kondo Ground State in Graphene
- 11:15 Gapless spin liquids
- 14:30 Entanglement Spectroscopy
Defects and Strain in Graphene

THURSDAY MARCH 24

- 8:00 Iron pnictides vs iron chalcogenides: magnetism and pairing fluctuation
Fermi surface reconstruction & competing orders in high T_c cuprates
Controlling quantum interactions of single spins and photons in diamond
- 11:15 Superconducting Qubits: Advances in Single-Shot QND Readout
CVD Graphene: Synthesis, Properties and Applications (DMP)
Advances in ZnO Physics and Applications (DMP)
Glassy Dynamics and Jamming (GSP)
- 14:30 Quantum and Classical Phenomena in Josephson Junction Arrays
Coexistence between antiferromagnetism & superconductivity in Fe-pnictides
Topological Vortices in Magnets, Ferroelectrics, and Multiferroics

FRIDAY MARCH 25

- 8:00 New insights into the Mott transition
Topological insulators: Transport and interactions
Recent Developments in Solid 4He
- 11:15 Solid-state spin qubits: Coherence control and protection
Pseudogap in high T_c cuprates

2011 MARCH MEETING PRIZE/AWARD SESSIONS CO-SPONSORED BY DCMP

WEDNESDAY MARCH 23

- 8:00 FIAP/DCMP/DMP Prizes: Pake, Adler, IAP, IUPAP/C10 (FIAP/DCMP/ DMP)
- 14:30 DCMP/DMP Prizes: Buckley, McGroddy, Davisson-Germer (DCMP/DMP)

2011 MARCH MEETING SUPERCONDUCTIVITY CENTENNIAL SESSIONS

MONDAY MARCH 21

11:15 Historical Perspectives from Discovery by Kamerlingh Onnes (FHP)

TUESDAY MARCH 22

11:15 Nobelist Perspectives on 100 Years of Superconductivity (DMP/DCMP)

WEDNESDAY MARCH 23

11:15 Superconductivity Centennial: Future Research Opportunities (DCMP/DMP)

OUTREACH & EDUCATION SESSIONS CO-SPONSORED BY DCMP

MONDAY MARCH 21

11:15 Mentoring Undergraduate Research (FEd/DCMP)

20:00 Physics Community Outreach: Small wonders!

THURSDAY MARCH 24

8:00 Physics for Everyone (DMP/DCMP)

SPECIAL SUNDAY PUBLIC OUTREACH LECTURE EVENT

SUNDAY MARCH 20

TBA Public Lecture: The Physics of Superheroes (DMP)

SPECIAL MONDAY EVENING EVENTS

MONDAY MARCH 21

17:45 APS Awards Ceremony (5:45-6:45 PM)

18:45 APS Welcome reception (6:45-8 PM)

20:00 Physics Community Outreach: Small Wonders!
(8-9 PM) – DCMP

DCMP CO-SPONSORED RECEPTION FOR PRIZE/AWARD WINNERS & NEW FELLOWS

TUESDAY MARCH 22

17:30 Reception (with DMP/DCOMP/DCP) until 7 PM -
Room: Reunion GH

19:00 DCMP Business Meeting - Room: Moreno A

SPECIAL 2011 NOBEL PRIZE LECTURE

WEDNESDAY MARCH 23

17:45 Prof. Konstantin Novoselov: Graphene

LUNCH WITH THE EXPERTS

This is an event for graduate students, who must pre-enroll to participate. See instructions in the APS March Meeting Program and Show Guide for 2011. DCMP and other APS units will have tables at this event anchored by topical experts.

DCMP-Sponsored Prize Winners for 2011

OLIVER E. BUCKLEY PRIZE (DCMP)

Juan Carlos Campuzano (Argonne National Laboratory)
Peter Johnson (Brookhaven National Laboratory)
Zhi-Xun Shen (Stanford University)

For innovations in angle-resolved photoemission spectroscopy, which advanced the understanding of the cuprate superconductors, and transformed the study of strongly-correlated electronic systems.

DAVISSON-GERMER PRIZE (DAMOP & DCMP)

Joachim Stöhr (Stanford University)

For the development of soft x-ray based spectroscopy and microscopy leading to fundamental contributions to the understanding of chemical bonding, magnetism and dynamics at surfaces and interfaces.