

A Message from the Chair, Roger E. Miller

I would like to begin by thanking all those who contributed their time and energy to making the DCP symposia at last year's March APS meeting a real success. I felt that the attendance at the various symposia was generally excellent and that the discussion was lively. We have another great line-up for this year, as detailed below, so we can all look forward to another exciting meeting. With the venue being Montreal, Canada, I expect that the attendance will be even higher. If you have not visited there before, don't miss this great opportunity to see one of North America's unique cities.

I wish to emphasize that contributed papers are emphasized at APS meetings, affording students and postdocs the opportunity to present one or more papers on their work at a truly international meeting. I hope you will all encourage and support your group members to attend the 2004 March meeting. In addition, the DCP sponsors travel awards to help offset the costs for graduate students to attend the conference. Details about the awards can be found elsewhere in this newsletter and on the DCP web site. By having a mix of invited talks and high quality contributed papers, we can ensure that the symposia will be successful. A strong DCP presence at the March meeting is important in emphasizing the role that Chemical Physics plays in the overall Physics community.

March APS Meeting, Montreal, Canada, March 22-26, 2004

The APS March 2004 meeting will be held March 22-26 in Montreal, Quebec, Canada. Information about the meeting is available at <http://www.aps.org/meet/MAR04/index.html> and instructions for submitting abstracts can be found at <http://www.aps.org/meet/MAR04/abs.html>. The deadline for abstracts is December 5, 2003 at 5 PM EST. Note that since this meeting is held in Canada, the APS has provided additional information about travel to and from Canada at <http://www.aps.org/meet/MAR04/visa/index.html>.

The annual DCP business meeting is also part of the March meeting and will include short reports of DCP activities, presentation of Certificates of Fellowship to new APS Fellows from the DCP, and introduction of student travel fellowship awards. All members are invited to attend. The date of the meeting will be published in the January newsletter.

The DCP Special Focus Topics for the March 2004 meeting include the following.

11.9.1. Structure and Dynamics of Supercooled Liquids and Glasses

Organizers: Gilles Tarjus & Steven Kivelson

This Symposium will focus on recent advances in the study of the structure and the dynamics of supercooled liquids and glasses. The aim is twofold: first, to assess the relevance of the many theoretical descriptions that have been introduced in

Important Deadlines

- | | |
|--|-------------------|
| • Graduate Student Travel Award applications: | November 28, 2003 |
| • Abstracts for contributions to the March meeting: | December 5, 2003 |
| • On-line ballots for new DCP officers: | December 19, 2003 |
| • Early registration for March meeting: | January 16, 2004 |
| • APS Fellowship nominations for DCP: | February 13, 2004 |

the past two decades to explain the glass transition or the glassy state itself (mode-coupling theory, energy landscape, frustration, entropy crisis, analogy with spin glasses, kinetic constraints, effective temperature, jamming transition, etc); second, to discuss the recent developments in experimental studies (evidence for heterogeneous dynamics, pressure and density dependences of the slowing down of relaxations, glass transition in confined geometries, hyperquenching, glassy systems under shear, generalization of the fluctuation-dissipation relation, polyamorphism, etc.). This Symposium will also be an opportunity to honor and remember Daniel Kivelson who died of cancer on January 23, 2003.

11.9.2. Multiscale Phenomena for Fluids and Solids

Organizers: William Curtin & Juan J. de Pablo

The aim of this symposium is to create a workshop-like environment bringing together researchers working on multiscale models applicable to liquids and/or solids. Such multiscale models bridge either length or time scales by direct coupling of methods or by informed passing of information across scales. Examples of direct coupling include: quantum chemistry or electronic structure methods coupled to either atomistic or continuum models; atomic-scale models of defects coupled to continuum defect dynamics models; atomistic fluid flow simulations coupled to continuum Navier-Stokes models or CFD models. Other approaches include accelerated molecular dynamics methods, highly-efficient quantum algorithms, informed reduced-order models, and informed cohesive-zone models. Applications in any area are welcome, including structural metals, alloys, ceramics, polymers, and composites; micro- and nano-fluidics; and phenomena in biological systems (e.g. protein folding, blood flow).

11.9.3. Nanoparticle-Enhanced Spectroscopies

Organizers: Peter Nordlander & Thomas Huser

This focus session intends to showcase the innovative use of nanoparticles to enable and enhance spectroscopies. Examples of topics include Raman scattering, Fluorescence Resonant Energy Transfer, nanoparticle induced electron transfer, surface plasmon enhanced fluorescence and nonlinear optical effects, nanoparticle conjugation of molecules for dynamic and structural studies, nanoparticle modifications of single molecule spectroscopies, and the use of nanostructures as probe tips for enhanced spectroscopic resolution. The session will consist of both experimental and theoretical contributions.

11.9.4. Physics and Chemistry of the Atmosphere

Organizer: G. Barney Ellison & Veronica Vaida

This Symposium is meant to bring together researchers in Chemical Physics and the Atmospheric Sciences. The molecular point of view offered by Chemical Physics provides a coherent framework to explore complex atmospheric problems. This Symposium will highlight recent advances in:

- Spectroscopy and Photodissociation Dynamics of Atmospheric Radicals
- Fundamental Properties of Atmospheric Complexes and Clusters
- Heterogeneous Oxidation in the Atmosphere
- Optical and Chemical Properties of Atmospheric Aerosols

Complex processes such as radiative transfer through the atmosphere and the chemical balance of the atmosphere are increasingly being considered from a molecular point of view. Theoretical and experimental contributions for this symposium are welcomed.

11.9.5. Dynamics at Gas-Solid and Gas-Liquid Interfaces

Organizer: Gilbert Nathanson & Bret Jackson

Recent advances in experiment and theory have made it possible to develop ever greater molecular insights into the structure and dynamics of solid and liquid surfaces, as well as collisions and reactions of gases with these surfaces. This focus session will highlight new approaches toward understanding the behavior of atoms and molecules at the surfaces of atomic and molecular solids and liquids, both in isolation and in contact with nonreactive and reactive gases. We welcome experimental and theoretical papers in all aspects of the dynamics of gas-solid and gas-liquid systems.

Graduate Student Travel Awards

DCP sponsors travel awards for graduate students who present a paper or a poster at the March meeting. Eligible expenses include reduced rate airfare or car travel, registration, economy room, and board for the duration of the meeting. Awards can range from \$250 to \$400. As many as twelve awards will be made. Criteria:

1. The work must be of significance suitable for a National APS meeting. The work would be presented as a poster at a DCP poster session or in a DCP sponsored oral session.
2. The applicant cannot have previously received a DCP-GSTA award.
3. The student must be a member of DCP. Students who are not currently members can still apply, but they must join both APS and DCP before their check will be issued.

Application:

1. The graduate student should submit an abstract directly to APS (see meeting information above) as well as a copy to the DCP-GSTA committee chair listed below. In addition, the graduate student should send a list of estimated expenses to the DCP-GSTA committee chair.
2. The faculty advisor of the student must write a nomination letter specifying the student's role in the research and explaining the significance of the work. Normally, only one applicant from any research group will be selected.

The application deadline is November 28. This is a rigid deadline for when applications must be received. Decisions will be made quickly so that any unsuccessful applicants may, if they wish, withdraw their abstract before it is published in the APS bulletin. The amount of individual awards will be based on total available funds and estimated expenses. Send applications to Professor Peter J. Rossky.

Applications may be sent by:

E-mail: rossky@mail.utexas.edu

FAX: 512-471-1624

Postal: Department of Chemistry and Biochemistry, University of Texas A5300, 1 University Station, Austin, Texas 78712

If you know a student who would benefit from this opportunity, please bring this to her or his attention.

DCP Membership

Membership in the American Physical Society's Division of Chemical Physics allows you to directly support a primary forum for chemical physics research. The status and influence of the DCP within the APS is dependent on the number of DCP members. Increasing DCP membership is crucial to preserving this important professional asset. If you are not a DCP member, we encourage you to join on the web (<http://www.aps.org/memb/unitapp.html>) or by phone (301-209-3280).

DCP Web Site

The DCP web site (<http://www.aps.org/units/dcp>) is continually being updated, so check it out from time to time. If you have ideas for information that you would like to see on the web, please send your suggestions to Bruce Garrett (bruce.garrett@pnl.gov). We are soliciting graphics and images for the home page and plan to rotate them periodically. If you have an image or artwork you would like to see featured, please send a jpeg file and caption to Bruce Garrett (bruce.garrett@pnl.gov).

Fellowship Committee and Nominations

Nominations for APS Fellowship to be considered by the DCP Fellowship Committee should be made before February 13, 2003. Thanks go to Mary Mandich for chairing the committee this year, and to Terry Miller and David N. Beratan for their service on the committee. Instructions for submitting a nomination are included on the APS web site (<http://www.aps.org/fellowship/fellinfo.html>).

Election of New DCP Officers

We are fortunate to have an excellent slate of candidates for the positions of Vice-Chair, Member-at-Large, and Secretary/Treasurer. All of these positions are for three-year terms. The Vice-Chair becomes the Chair-Elect in the second year of the term and Chair in the final year. The main duties of the Chair are to provide general leadership for the Division, to make sure that the various Division committees are staffed, and to preside at the business meetings of the Division. The most time-consuming job of the Chair-Elect is to organize the DCP symposia for the upcoming National meeting. The duties of the Member-at-Large are less well defined, other than to attend the March meeting. In the past they have organized the student fellowship program, assisted in membership recruiting, and helped with the organization of National meetings. All members of the Executive Committee, which includes the DCP Officers as well as the Members-at-Large, meet at the March APS meeting to help plan DCP activities for the coming year.

The election will be conducted using the new APS web-based voting system. DCP members will be emailed a voting announcement with a link to the voting system. The deadline for casting your on-line ballot is December 19, 2003.

We are indebted to the Nominating Committee, consisting of Marsha Lester (chair), Mark Johnson, and Jim Lisy, who have convinced the following individuals to stand as candidates.

Candidates for Vice-Chair

PETER B. ARMENTROUT. Distinguished Professor, Department of Chemistry, University of Utah, Salt Lake City, UT. B.S., Case Western Reserve University, 1975. Ph.D., California Institute of Technology, 1980. APS Fellow, 1994.

RESEARCH INTERESTS: Kinetic, electronic, and internal energy dependence of ion-molecule reactions. Thermochemistry, kinetics, and dynamics of state-selected atomic metal ions, unsaturated organometallic complexes, solvated ions, and metal cluster ions. Thermochemistry of metal ions interacting with biological molecules. Environmental chemistry. Pulsed field ionization spectroscopy. Threshold behavior: theory and experiment.

Web site: <http://www.chem.utah.edu/faculty/armentrout/index.html>

HAI-LUNG DAI, Hirschmann-Makineni Professor of Chemistry, University of Pennsylvania, Philadelphia, PA. B.S. Taiwan University, 1974. Ph.D. University of California, Berkeley, 1981. Postdoctoral Fellow, MIT, 1981-84. APS Fellow, 1992. Honors received include the Coblenz Award in Molecular Spectroscopy, Morino Lectureship (Japan), Humboldt Fellowship (Germany), ACS Philadelphia Section Award, and Guggenheim Fellowship.

RESEARCH INTERESTS: Published 130 articles in the areas of chemical physics, spectroscopy, surface science and materials science on subjects such as spectroscopy and energy transfer of highly excited molecules, structure and spectroscopy of weakly bound complexes and transient radicals, dynamics and photochemistry on metal and semiconductor surfaces, structure and phase transition of molecular thin films, and development of spectroscopic techniques. While as Chairman of the Chemistry Department at Penn from 1996-2002, established a master degree program for content-intensive training of secondary school chemistry teachers.

Web site: www.sas.upenn.edu/chem/faculty/dai/dai.html

Candidates for Member-at-Large of the Executive Committee

NANCY E. LEVINGER. Associate Professor, Department of Chemistry, Colorado State University, Fort Collins, CO. B. A., Northwestern University, 1983. Ph.D., University of Colorado, Boulder, 1990. National Science Foundation Postdoctoral Fellowship, University of Minnesota, 1990.

RESEARCH INTERESTS: Dynamics of molecules in confined environments, novel reverse micelles, dynamics in mixed solvents, dynamics at interfaces. Interactions of metal coordination compounds with interfaces and transport through bilayers. Ultrafast laser spectroscopy, quasielastic neutron scattering, small angle neutron scattering, multinuclear and pulsed field gradient NMR.

Web site: <http://www.chem.colostate.edu/nel/>

GILBERT M. NATHANSON. Professor, Department of Chemistry, University of Wisconsin, Madison, WI. B. S., Yale University, 1979. Ph. D., Harvard University, 1985. Miller Postdoctoral Research Fellow, University of California, Berkeley, 1985. APS Fellow, 2002.

RESEARCH INTERESTS: Molecular beam scattering from liquid surfaces; gas-liquid collisions and energy transfer; interfacial solvation and acid-base reactions; stratospheric ozone depletion mediated by sulfuric acid aerosols; surfactant control of interfacial reactivity.

Web site: <http://www.chem.wisc.edu/~nathanson/>

Candidates for Secretary/Treasurer

BRUCE C. GARRETT. Associate Director, Molecular Interactions & Transformations, Chemical Sciences Division, Pacific Northwest National Laboratory. B. S., University of California, Irvine, 1973. Ph.D., University of California, Berkeley, 1977. APS Fellow, 2001. Secretary/Treasurer of APS Division of Chemical Physics, 2001-2004.

RESEARCH INTERESTS: Development of theoretical methods for predicting rates of chemical reactions that are important in the environment, including the study of the effects of molecular environment (liquids, solids, and interfaces) on chemical reaction rates. Development of molecular theories to describe the kinetics of gas-to-liquid nucleation important in the atmosphere. Development of a molecular-level understanding of the structure and energetics of interfaces and how they effect the transfer of solute molecules between phases.

Web site:

<http://emslbios.pnl.gov/bios/biosketch.nsf/All+Public+Documents/906A6097C35C2CED88256B7B007549DB?opendocument>

JAMES T. MUCKERMAN. Senior Chemist, Department of Chemistry, Brookhaven National Laboratory, Upton, NY. B. A., Carleton College, 1965. Ph.D., University of Wisconsin, 1969. Guggenheim Fellow, 1980. Spokesperson, BNL Gas-Phase Molecular Dynamics research group.

RESEARCH INTERESTS: Theoretical dynamics of reactive collisions and photodissociation processes, combined quantum/classical approaches for treating the dynamics of large systems, *ab initio* calculation of potential energy surfaces, electronic properties of metal-containing clusters, nanocatalysis.

Web site: <http://www.chemistry.bnl.gov/gpmd/gpmd.html>

Meetings of Possible Interest to DCP Members

Gordon Research Conference on Atomic & Molecular Interactions

July 11-16, 2004

Colby-Sawyer College, New Hampshire

Organizers: Paul Dagdigian & David Yarkony

Email: pjdagdigian@jhu.edu

yarkony@jhuvms.hcf.jhu.edu

Web site:

<http://www.grc.uri.edu/programs/2004/atomic.htm>

Gordon Research Conference on Water & Aqueous Solutions

August 1-6, 2004

Holderness School, New Hampshire

Organizers: Rich Saykally and Alfons Geiger

Email: saykally@uclink4.berkeley.edu

geiger@heineken.chemie.uni-dortmund.de

Gordon Research Conference on Molecular & Ionic Clusters

September 5-10, 2004

Centre Paul Langevin, Aussois, France

Organizers: Tim Zwier and Klaus Muller-Dethlefs

Email: zwier@purdue.edu

kmd6@york.ac.uk