

DIVISION OF ATOMIC, MOLECULAR AND OPTICAL PHYSICS NEWSLETTER

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Message From the Chair Gordon Drake

Plans are now well advanced for the joint meeting of DAMOP next April 18-21 with the Washington APS/AAPT meeting. The usual 12 sessions of invited symposia have been expanded to 16, with eight of these being joint symposia with other Divisions or Topical Groups. In addition, there will be a Prize Winners session to honor the winners of the I. I. Rabi, Herbert P. Broida and Maria Goeppert-Mayer Awards, and a session to select the winner of the Best Thesis Award. The rich variety of joint and stand-alone sessions is listed in detail elsewhere in this Newsletter. The multiplicity of sessions will make this an unusually complex conference, but also an unusually interesting and stimulating one to attend.

This meeting is also the 1997 CAM (Canadian, American, Mexican) Conference with substantial participation from all three countries. In recognition of this, Carmen Cisneros (Mexico), See L. Chin (Canada) and Louis Dub (Canada) were invited to join the DAMOP Program Committee and to participate in the selection of invited symposia and speakers. There will also be a special CAM Plenary Session and reception.

I would like to thank all the members of the DAMOP Program Committee and their counterparts in other Divisions and Topical Groups for their work in suggesting topics and assembling lists of invited speakers. This meeting will be a tribute not only to the essential unity of physics, but also to the spirit of international cooperation which it engenders.

Call for Nominations for DAMOP Offices

Ron Phaneuf

The DAMOP Nominating Committee welcomes your suggestions of candidates for Vice-Chair and Executive Committee Membership. Please contact a member of the committee with your suggestions of candidates who are willing to serve, along with a brief supporting statement. The slate will be finalized in November. The committee members are listed below together with contact information.

Gordon Berry (219)-631-4012, hgberry@neon.helios.nd.edu; Jim Cohen (505)-667-5982, jsc@t4.lanl.gov, Joe Dehmer (301)-975-3216, dehmer@nist.gov, Ron Phaneuf (Chair), (702)-784-6818, phaneuf@physics.unr.edu, or Dave Pritchard (617)-253-6812, dave@amo.mit.edu.

FASTLANE: Electronic Communication with the NSF; www.nsf.gov

Denise Caldwell

NSF is increasingly moving toward electronic communication for proposal submission, processing, and review. This is being implemented through the NSF web page via FASTLANE. FASTLANE already provides information about awards within the program (FASTLANE; NSF Award Search; Atomic and Molecular Physics), as well as general information about the status of a proposal or award (PI access only with PIN.) Beginning immediately, the theoretical and experimental AMOP programs will be using FASTLANE as an option for submission of mail reviews. Instructions for submitting a review by FASTLANE will be provided in all review packages beginning with proposals with 97- numbers. This is a first step in what is intended to become full utilization of electronic communication in the AMOP programs.

Call for Papers-Special Session on Undergraduate Research

Don Madison

There will be a special session featuring research performed by undergraduate students at the 1997 DAMOP meeting. The papers will be 15 minutes long including discussion. Interested students should submit an electronic abstract for their talk in standard APS format and a one page summary of principal findings by January 15, 1997. From the submitted materials, a committee will select four students to be invited to give talks in the special session. Participation is limited to currently enrolled undergraduate students. The participation of women and minority undergraduate students is especially encouraged. Abstracts should be sent by January 15, 1997, to Don Madison at

madison@physics.umn.edu.

DAMOP Committees for 1996-97

The following are the members of our DAMOP committees for 1996-97. We are grateful to these members for their willingness to serve and for their efforts on our behalf. Committee members will be happy to receive input or provide information.

Executive Committee:

Gordon Drake (Chair)
Kate Kirby (Chair-Elect)
Carl Wieman (Vice-Chair)
Richard Freeman (Past Chair)
Barry Dunning (Sec. Treas.)
Joseph Dehmer *(Div. Councilor)
Gordon Dunn (Div. Councilor)
Nora Berrah
Charlotte Fischer
Timothy Gay
Marsha Lester
Keith MacAdam
Steven Manson

*Eric Heller takes over as Divisional Councilor on 1/97

Nominating Committee:

Ronald Phaneuf (Chair)
Gordon Berry
James Cohen
Joseph Dehmer
David E. Pritchard

Fellowship Committee:

Carl Wieman (Chair)
James Bergquist
Charlotte Fischer
Thomas Morgan
Robin Shakeshaft

Publications Committee

Steven Rolston (Chair)
Lew Cocke
Robert Jones
Don Madison
Thomas Mossberg
William Phillips
Leposava Vuscovic

Thesis Award Committee

Ken Kulander (Chair)
Robert Compton
Mark Kasevich
Carol Tanner
William van Wijngaarden

Program Committee

Kate Kirby (Chair)
Norman Bardsley
William Cooke
Gordon Gibson
Robert Gordon
Randy Hulet
Winifred Huo
Dennis Lindle
Fred Meyer
Pierre Meystre
Howard Michberg
William McConkey
Steve Pratt
Linn Van Woercom
Carl Wieman (ex officio)
Gordon Drake (ex officio)
Barry Dunning (ex officio)

Washington DAMOP Meeting- April 18-21, 1997

Plan now to attend the 1997 DAMOP meeting. The weather in Washington should be pleasant and the crowds light. Preparations for the meeting are now well in hand.

The invited symposia and their organizers are listed below.

New Developments in Ion-Atom Collision Experiments

C. D. Lin, University of Madison, WI.

Atoms and Molecules in Strong Fields

L. Van Woercom, Ohio State University.

Quantum Field Theory of Ultracold Atoms Interacting with Light

P. Meystre, University of Arizona.

Recent Advances in Polarized Electron Physics

D. Madison, University of Maryland and J. W. McConkey, University of Windsor, Ontario.

AMO Physics Applied to Low-Temperature Plasmas (Joint with Division of Chemical Physics)

K. Becker, CCNY-CUNY.

Advances in High-Precision Atomic Lifetime Determinations (Joint with the Topical Group for Precision Measurements)

S. Lundeen, Colorado State University.

Diffraction-Limited Optics for X-Rays (Joint with the Forum on Industrial and Applied Physics)

J. N. Bardsley, Lawrence Livermore National Laboratory.

100 Years of Electron Physics (Joint with the Forum on the History of Physics)

J. N. Bardsley, Lawrence Livermore National Laboratory.

Sonoluminescence (Joint with the Division of Chemical Physics)

T. McIlrath, University of Maryland.

Photoemission Beyond the Dipole Approximation

D. Lindle, University of Nevada-Las Vegas.

Electron Scattering at "Designer Atoms"

F. Meyer, Oak Ridge National Laboratory.

Recent Developments in Ion-Surface Interaction Physics

F. Meyer, Oak Ridge National Laboratory.

Recent Progress in Electron-Ion Collisions

R. Phaneuf, University of Nevada-Reno.

Session on Science Funding

M. Lubell, CCNY-CUNY. Advances in the Study of Few Body Systems (Joint with the Few Body Systems Topical Group)

J. McGuire, Tulane University.

Physics with Traps and Storage Rings (Joint with the Division of Nuclear Physics)

H. Stroke and B. Clark, Ohio State University.

Applications of Beams and Synchrotron Light Sources (Joint with the Division of Physics of Beams)

F. Meyer, Oak Ridge National Laboratory and W. Herrmannsfeldt, Stanford Linear Accelerator.

The deadline for abstract submission is 17 January 1997. To aid in organizing the contributed paper sessions, a list of sorting categories has been devised and this is

reproduced below:

B. ATOMIC, MOLECULAR AND OPTICAL PHYSICS

ATOMIC AND MOLECULAR STRUCTURE PROPERTIES

- 01 RF, microwave and IR spectroscopy
- 02 Visible spectroscopy
- 03 UV/X-ray spectroscopy
- 04 Lifetimes, oscillator strengths
- 05 Behavior in static fields
- 06 Fundamental symmetries and precision measurements
- 07 Atomic structure theory
- 08 Molecular structure theory

PHOTON INTERACTIONS WITH ATOMS AND MOLECULES

- 09 Photoionization/photodetachment
- 10 Photodissociation and photoassociation
- 11 Intense field effects: multiphoton processes

ATOMIC AND MOLECULAR COLLISIONS AND INTERACTIONS

- 12 Interaction potentials and forces
- 13 Reactive scattering, chemical kinetics
- 14 Excitation/ionization
- 15 Surface interactions
- 16 Polarized atoms
- 17 Scattering theory

CHARGED PARTICLE COLLISIONS

- 18 Electron scattering
- 19 Electron impact excitation/ ionization
- 20 Negative ion properties
- 21 Ion scattering
- 22 Charge transfer
- 23 Interactions with surfaces and solids
- 24 Spin dependences
- 25 Electron collision theory
- 26 Heavy particle collision theory

STUDIES WITH SPECIAL ATOMS AND MOLECULES

- 27 Highly excited species, Rydberg atoms
- 28 Highly charged species
- 29 Exotic atoms and molecules
- 30 Clusters

QUANTUM OPTICS/ULTRAFAST PHENOMENA

- 31 Wavepacket dynamics and quantum control
- 32 Atom interferometry
- 33 Nonlinear optics
- 34 Quantum computing
- 35 Cavity QED

COOLING AND TRAPPING

- 36 Laser cooling and trapping
- 37 Bose-Einstein condensation
- 38 Ultra-cold collisions
- 39 Applications to fundamental measurements

OTHER

- 40 Experimental techniques
- 41 Theoretical methods

Editor's Note: Any comments or suggestions for future changes would be welcome.

Announcement

Kate Kirby

It is with profound sadness that we report the death, from cancer, of Dr. Jean Gallagher on October 5, 1996. At the time of her death Jean was Program Manager in the Standard Reference Data Program at NIST, as well as Editor of the Journal of Physical and Chemical Reference Data. She had headed the Atomic Collisions Data Center at JILA from 1980 to 1989. As chair of last year's Fellowship Committee of DAMOP, I note that the Committee strongly endorsed the nomination of Jean Gallagher for Fellowship in the American Physical Society. Her citation reads:

"For outstanding leadership and work in compiling and evaluating numeric data in atomic, molecular and optical physics."

She will be elected to Fellowship in November at the APS Council meeting. It is tragic

that she died before learning of this significant recognition from the DAMOP community.

Los Alamos AMO Summer School, June 9-August 1, 1997 Howard Bryant

The Los Alamos Summer School in AMO Physics is a joint endeavor of Los Alamos National Laboratory (LANL) and the University of New Mexico (UNM). The school, which runs 8 weeks in the summer, combines classes in many areas of AMO physics with individual research projects mentored by LANL staff members and UNM faculty. The school targets principally upper-level undergraduates. Supercomputing physics applications are emphasized throughout the program.

Housing is provided as well as a stipend to cover expenses. Students may, if they wish, receive graduate or undergraduate credit (3 hours) from UNM for the Summer School. Further information can be obtained at <http://www.phys.unm.edu/~zeilik/amo>, or by contacting Michael Zeilik (amo@chicoma.la.unm.edu, (505) 438 1234, fax (505) 438-1238).

NIST Precision Measurement Grants

Applications are being solicited for two new Precision Measurement Grants, sponsored by the National Institute of Standards and Technology, to be awarded beginning 1 October 1997 (Fiscal Year 1998). Each grant is in the amount of \$50,000 per year, renewable for up to two additional years, for a total of \$150,000. NIST sponsors these grants to encourage research by U.S. university and college faculty members in the field of precision measurement and fundamental constants and to foster contacts between NIST scientists and faculty members actively engaged in such work. Candidates' pre-proposal summaries and biographical information must reach NIST by 3 February 1997 to be considered for the FY 98 awards. For more information, contact Barry N. Taylor, Chairman, NIST Precision Measurement Grants Committee, National Institute of Standards and Technology, Building 245, Room C229, Gaithersburg, MD 20899-0001, (301) 975-4220, barry.taylor@nist.gov.

Related Future Meetings

The XX International Conference on the Physics of Electronic and Atomic Collisions (ICPEAC) will take place 23-29 July 1997 in Vienna, Austria.

For further information consult the Conference homepage at <http://www.iap.tuwien.ac.at/icpeac97/> or contact Prof. H. P. Winter, Institut für Allgemeine Physik, T. U. Wien, A-1040 Wien, Austria, e-mail: ICPEAC97 @lap.tuwien.ac.at.

The second International Symposium on Symmetries in Subatomic Physics will be held June 25-28, 1997, University of Washington, Seattle, WA. Contact Ernest Henley, Physics, Box 351560, University of Washington, Seattle, WA 98195-1560; e-mail: henley@phys.washington.edu, or see <http://www.phys.washington.edu/~henley/symmetries>.

There will be a number of invited talks on atomic physics.

The 1997 International Conference on Strongly Coupled Coulomb Systems (formerly the International Conference on Strongly Coupled Plasmas) will be held on the campus of Boston College, MA, from Sunday, August 3 to Sunday, August 10, 1997. The conference includes discussion of many physical systems and theoretical approaches of interest to AMO scientists.

If you would like to be included in the mailing list for this conference, e-mail your postal address to SCCS@BC.EDU, or write to: SCCS '97, Department of Physics, Boston College, Chestnut Hill, MA 02167-3811. Also, see the conference web page at <http://ph99.bc.edu/conference/>

The chair of the organizing committee is Gabor J. Kalman, Department of Physics, Boston College.

Newsletter Input

If you have any information, ideas, announcements, etc. that are of general interest to DAMOP members, please send them to me at any time.

Barry Dunning

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