Division of Atomic, Molecular and Optical Physics NEWSLETTER

A Division of The American Physical Society **January 1995**

Chun C. Lin
Chair
Department of Physics
University of Wisconsin
1150 University Avenue
Madison, WI 53076
(608)-262-0697
FAX: (608)-265-2334

Richard R. Freeman
Chair-Elect
Head, Advanced Lithography
Research Department
AT&T Bell Laboratories
Holmdel, NJ 07733
(908)-949-9500
FAX: (908)-949-6010
E-MAIL: rrf@physics.att.com

Gordon W.F. Drake
Vice-Chair
Department of Physics
University of Windsor
Windsor, ON N9B 3P4
Canada
PHONE: (519) 253-4232, X 2656
FAX: (519) 973-7075
E-MAIL: a36@server.uwindsor.ca

Ron Phaneuf
Secretary-Treasurer
Department of Physics /220
University of Nevada, Reno
Reno, NV 89557-0058
(702)-784-6818
FAX: (702)-784-1398
E-MAIL phaneuf@physics.unr.edu

Inside...

Message from the Chair ... by Chun Lin

Future DAMOP Meetings.

We appreciate very much your response to the recent DAMOP meeting questionnaire survey. The results, summarized elsewhere in this newsletter, show clearly a preference for the present mid-May meeting schedule and the desire to meet jointly with the Division of Chemical Physics (DCP) and the Laser Science Topical Group (LSTG). It is also a majority view that the DAMOP should continue to join the APS Spring Meeting once every few years. These points will be carefully considered by the Executive Committee.

I should remind you that holding the annual DAMOP meeting in April or May makes it impractical to have a full-fledged joint meeting with the LSTG because of its own meeting schedule in the spring. However, there exist other means to strengthen our interactions with the LSTG.

Employment Workshops.

At the last two DAMOP Meetings we have held employment workshops. The personnel of the American Institute of Physics (AIP) kindly arranged workshop sessions with guest speakers to discuss such topics as résumé preparation, job interviews, networking, and career opportunities. Counselling on an individual basis was also provided.

Ed Goldin of the AIP has agreed to conduct an employment workshop at the 1995 Toronto DAMOP meeting. If you are knowledgeable about current job opportunities, I hope you will come to the workshop and share your experience with us. We would also like to have your suggestions for guest speakers, format of the workshop, topics for discussion, etc...

1995 Broida and Rabi Prize Winners Announced!

We congratulate **Ahmed H. Zewail** of Caltech, who is the 1995 winner of the Herbert P. Broida Prize. The Broida Prize recognizes and encourages outstanding experimental advancements in the fields of atomic, molecular and chemical physics. Zewail is cited *for his seminal and outstanding contributions to chemical physics, pioneering work on the development and studies of molecular dynamics with ultrafast lasers, novel multiple-pulse optical coherence techniques and ultrafast electron diffraction, and for his breakthrough development of the field of femtochemistry which opened up worldwide research in theory and experiment on dynamics at the atomic-scale time resolution.*

We also congratulate **Randall G. Hulet** of Rice University, who is the 1995 winner of the I. I. Rabi Prize. The Rabi Prize recognizes and encourages outstanding research in atomic, molecular and optical physics by a physicist within ten years of receiving the Ph.D. degree. Hulet is cited *for his contributions to a broad range of important problems in atomic and optical physics including cavity quantum electrodynamics, quantum jumps, ion storage, and laser cooling of atoms. In the latter field, in particular for his demonstration of multiphoton cooling involving Doppleron resonances in neutral Lithium and his collision experiments with cooled Lithium vapor.*

THERE IS A BALLOT INSIDE PLEASE VOTE! ✔

Election of Officers.

Once again our nominating committee, chaired this year by Pat Richard, has come up with an outstanding slate of candidates for DAMOP Vice-Chair, and for two three-year terms on the DAMOP Executive Committee. Other members of the nominating committee are Pat Dehmer, John Doering, Dan Larson and Tony Starace. Additionally, seven DAMOP members were nominated for general APS offices.

Brief biographical sketches of the candidates for DAMOP offices and a ballot are included in this newsletter.

It has been disappointing that in recent years, ballots have been returned by only about 10% of our membership. Therefore, I have tried to make it as convenient as possible for you this year by enclosing a pull-out, fold-up, pre-addressed ballot. It only needs your selections, two folds, a staple or piece of tape, and a stamp! (or you can put it into an envelope if you prefer).

DAMOP Meetings Survey

The results of the questionnaire sent to the entire DAMOP membership via the October DAMOP Newsletter are summarized on page 3. There were 194 respondents (7.5% of the membership). This was disappointing, but comparable to recent election returns.

There are some clear indications from the survey.

* 64% of respondents favor continuing periodic joint meetings with the APS general meeting in some format - opinions are divided about where and how frequently, with some preference for continuing the 3-year cycle.

* 87% of respondents favor continuing our meeting arrangement with the DAMP of the CAP (my apologies for getting the details wrong on the questionnaire! - it should have read *every <u>three</u> years and every <u>six</u> in a Canadian city*).

* 80% of respondents favor meeting jointly with other subunits, with DCP and LSTG strongly and almost equally supported. Opinion was divided on how frequently, but 60% favored either every three years or occasionally. 77% favored adjusting the DAMOP meeting time to accommodate such meetings, but almost half of those by only a month or so.

* Mid-May remains the preference (71% of respondents) for the annual DAMOP Meeting.

The direction from the responding members is that DAMOP should continue its agreements to meet with the APS every three years, and with DAMP. We should also be trying to arrange joint meetings with LSTG and DCP either on a cycle of 3 years, or occasionally when opportunities arise. However, a majority of DAMOP respondents do not wish to change their meeting times appreciably (e.g. to the fall) to accomplish this. This would be straight-forward with the gas-phase contingent of DCP, which meets already in springtime. The situation with LSTG is more problematic, but we will be exploring possibilities for at least partial joint meetings or special symposia.

Your suggestions will be welcomed by the DAMOP Executive Committee, which will be folding this input from the membership into the planning and scheduling of future DAMOP meetings.

5th International Colloquium on Atomic Spectra and Oscillator Strengths for Astrophysical and Laboratory Plasmas

The Colloquium will be held in Meudon, France on August 28-31, 1995. The purpose is to establish a dialogue between "users" and "producers" of atomic data, so that efforts will fill needs. For further information contact:

Dr. W. -Ü Lydia Tchang-Brillet
E-MAIL: BRILLET@OBSPM.FR

ICPEAC XIX

The International Conference on the Physics of Electronic and Atomic Collisions will be held in Whistler, Canada (an hour and a half north of Vancouver by car) July 26 - August 1, 1995. A proposal to fund partial travel support for students and postdocs from the U.S. has been submitted to the National Science Foundation.

For further information and application forms for partial travel support for young scientists, contact:

Jim McGuire
Department of Physics
Tulane University
New Orleans, LA 70118-5698
or E-MAIL:
mcguire@mcguire.phy.tulane.edu

1995 Gordon Conference on Atomic Physics

The 1995 Gordon Conference on Atomic Physics will be held July 3-7 at Brewster Academy in Wolfeboro, New Hampshire. Look for the official announcement in Science magazine, probably in February, including a preliminary partial program. Application forms for the meeting can also be found in Science magazine or else requested directly from the Conference Chair. Historically, this series of meetings has spanned most areas of atomic physics, in a format that promotes extensive discussions. The schedule consists of invited talk sessions in the mornings and evenings. The afternoons are left free for additional interactions in a relaxed atmosphere, along with recreational activities that include hiking, swimming, volleyball, basketball, etc.

The 1995 meeting is being organized by Chris Greene (Chair) and Phil Gould (Vice-Chair). Anyone interested in additional information about the meeting should contact:

Chris Greene
E-MAIL: chg@jilacg.colorado.edu.

Don't forget to vote!

RESPONSES TO DAMOP MEETING QUESTIONNAIRE

DAMOP Newsletter, October, 1994

Affiliation of Respondents:

University/college faculty/staff/postdoc	139	(72%)
University/college student	6	(3%)
Federal/national laboratory	35	(18%)
Industry	3	(2%)
Other	10	(5%)

Should DAMOP renew its agreement to meet with an APS general meeting every three years?

Yes	80	(43%)
Yes, under the conditions noted below	40	(21%)
No	67	(36%)

Yes, under the(se) conditions:

More frequently	7	(13%)
Less frequently	11	(21%)
Not in Washington	16	(30%)
Only in Washington	16	(30%)
At another time of year	5	(9%)

Should DAMOP continue its existing agreement with the Canadian DAMP?

Yes	160	(87%)
No	23	(13%)

Should DAMOP try to arrange joint meetings with other subunits?

Yes	149	(80%)
No	37	(20%)

With which subunits*? (% is of those who replied yes to above question)

Division of Chemical Physics	119	(80%)
Laser Science Topical Group	103	(69%)
Precision Measurements & Fundamental Constants	5	(3%)
Division of Astrophysics	5	(3%)
Division of Plasma Physics	4	(3%)
Division of Particles and Beams	2	(1%)
Few-Body Topical Group	2	(1%)

* only those with more than one response are listed

How often?

Every year	29	(19%)
Every two years	32	(21%)
Every three years	49	(32%)
Occasionally	42	(28%)
Other	1	(1%)

Should DAMOP change its meeting time to facilitate joint meetings with other subunits?

Yes	68	(43%)
Yes, but not by more than a month or so	54	(34%)
No	36	(23%)

Preference for annual DAMOP meeting time:

Mid-May, as at present	130	(71%)
Fall	31	(17%)
Earlier in Spring	17	(9%)
Other	4	(2%)

Congratulations to New APS Fellows!

We are proud to announce and to offer our congratulations to the following DAMOP members who were recently elected to Fellowship in the American Physical Society. The nominating units are indicated.

NOMINATED BY DAMOP:

ABRAHAM, Neal Broadus
Bryn Mawr College
For his contributions to the understanding of laser instabilities and to physics education.

BLOOMFIELD, Louis Aub
University of Virginia
For seminal contributions to the understanding of magnetism in clusters.

BRUCH, Reinhard Frank
University of Nevada, Reno
For his innovative work on Auger electron spectra of few electron systems, atomic and molecular collision processes, spectroscopy and collision dynamics of complex many-body systems and absolute cross section measurements in the EUV.

CARMICHAEL, John Howard
University of Oregon
For contributions to the quantum theory of lights, its generation, detection, and interaction with atoms.

CROTHERS, Derrick Samuel F.
The Queen's University of Belfast
For his distinguished research on atomic collision theory including the development of continuum distorted wave methods and the quantum theory of Wannier threshold ionization.

FINK, Manfred K.
University of Texas-Austin
For the extension of high energy electron scattering to high temperature compounds, biological molecules, the determination of molecular charge densities and state selected molecules.

GAY, Timothy James
University of Nebraska
For his studies of fundamental atomic collision processes, particularly with regard to spin-dependent effects, and for important contributions to the development of polarized electron technology.

HARTER, William George
J. William Fullbright College
For the development of novel semiclassical and graphical theories which contributed to better understanding, analysis and prediction of complex electronic spectra of atoms and molecules, and high resolution rotation-vibration of symmetric polyatomic molecules.

KACHRU, Ravinder
SRI International
For the application of photon echoes to fundamental atomic physics and optical data storage.

MORGAN, Thomas Joseph
Wesleyan University
For his studies of collisions using hydrogen and Rydberg atoms, his contributions to the study of photoionization of ions and radiative recombination, and his efforts in fostering international cooperation.

PAULSON, John F.
Phillips Laboratory
For pioneering experimental studies on molecular physics processes in weak plasmas, especially for research on ion-molecule reactions, photodissociation of molecular ions, and electron attachment to molecules.

ROBSON, Robert E.
James Cook University, Australia
For contributions to the fundamental understanding of charged particle transport properties in gases in strong electric fields, through establishment of rigorous theory, accurate numerical techniques and provision of semi-empirical formulas.

SRIVASTAVA, Santosh Kumar
California Institute of Technology
For contributions made to the field of electron-atom/molecule collision physics by developing experimental techniques to measure accurate collision cross sections and by generating a large body of cross section data for elastic and inelastic scattering, ionization and attachment.

FORUM ON INTERNATIONAL PHYSICS:

LINDGREN, Ingvar Per Kare
University of Goteborg, Sweden
For the development of linked-diagram and coupled-cluster theories for many body atomic systems; for contributions to relativistic, QED and weak-interaction effects in atoms.

SVANBERG, Sune R.
Lund Institute of Technology, Sweden
For his contributions to atomic laser spectroscopy and his extensions of laser spectroscopy to energy, environmental and medical research.

---(continued on next page)---

--- New APS Fellows (continued) ---

DIVISION OF CHEMICAL PHYSICS:

COPLAN, Michael Alan, University of Maryland
For careful and cleverly-designed experiments contributing to the understanding of the electronic structure of molecules, the dynamics of electron- and ion-molecule scattering, and solar wind and comet-tail composition.

ARMENTROUT, Peter B., University of Utah
For ion beam studies of molecular dynamics, chemical kinetics and thermochemistry of gas phase reactions, especially those involving transition metal atomic ions and clusters.

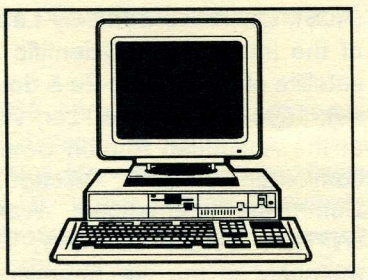
WARREN, Warren Sloan, Princeton University
For theoretical and experimental contributions to coherent laser spectroscopy and nuclear magnetic resonance. In both fields, he has shown that enhanced control over radiation fields (pulse shaping and phase shifting) uncovers new physics, permits preparation of novel molecular states, and enhances spectroscopic sensitivity and selectivity.

LASER SCIENCE TOPICAL GROUP:

CHEN, Chung-Hsuan Winston, Oak Ridge National Laboratory
For his fundamental contributions to chemical kinetics studies and the development of several ultra-sensitive detection methods by laser spectroscopy.

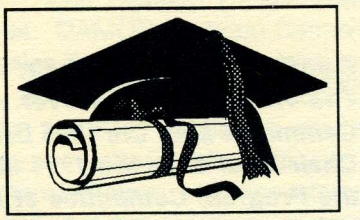
JACOBS, Ralph Raymond, Lawrence Livermore National Laboratory
For fundamental and applied contributions to the research and development for a wide variety of gaseous, solid, and liquid laser media.

Electronic Submission of Abstracts.



Judy Franz, Executive Officer of the APS, has requested that DAMOP consider electronic submission of abstracts as an option for our 1996 meeting. The Division of Condensed Matter Physics recently experimented with this method, and more than 80% of the abstracts were submitted electronically. One advantage will be electronic access to the meeting schedule and abstracts significantly before the APS Bulletin is published. Further information and instructions about the process will be forthcoming.

Candidates for the 1995 Outstanding Doctoral Thesis Award in Atomic, Molecular and Optical Physics.



This year, there were twelve nominations, from which the committee selected the following five finalists (presented alphabetically):

Michael Courtney
Daniel Kleppner, thesis advisor
Massachusetts Institute of Technology
Rydberg Atoms in Strong Fields: A Testing Ground for Quantum Chaos.

Brian Lemoff
Stephen E. Harris, thesis advisor
Stanford University
Femtosecond-Pulse-Driven Extreme-Ultraviolet Laser.

David Neyer
Paul Houston, thesis advisor
Cornell University
Quantum State Resolved Photodissociation Dynamics of the Formyl Radical.

Chin-Chun Tsai
William Stwalley, thesis advisor
University of Iowa
All-Optical Multiple Resonance Spectroscopy of Na_2 Using an Ultrasensitive Ionization Detector.

Matthew Walhout
Thomas J. McIlrath, thesis advisor
University of Maryland
Studies of Laser-Cooled and Magneto-Optically Trapped Xenon.

The finalists will present their thesis work in a special session to be held on Thursday morning, May 18, 1995 at the DAMOP Meeting in Toronto. The committee will meet immediately after the session to select the winner. We congratulate the finalists and thank the committee members: John Miller (chair), Phil Cosby (vice-chair), Paul Julienne, Peter Koch and Chii-Dong Lin.

April APS Meeting Budget Surplus.

We have been informed by APS Treasurer, Harry Lustig, that the 1994 APS Spring Meeting had a budget surplus of $31,660, of which DAMOP's share (determined by the relative number of sessions) is $9,634. Sixteen APS subunits participated, with DAMOP the largest contingent.

Election of Divisional Officers

Candidates for Vice-Chair:

The vice-chair takes over as chair of the Fellowship Committee after the 1995 DAMOP Meeting, succeeds to Chair-Elect after the 1996 Meeting (serving as chair of the Program Committee at the 1997 DAMOP Meeting), and then succeeds to DAMOP Chair for the year preceding the 1998 Meeting. The total term of office for this position is therefore three years, beginning in May, 1995.

DUNNING, F. BARRY. B.Sc., University College London, 1966; Ph.D., University College London, 1969. I.C.I Postdoctoral Fellow, University College London, 1969-71. Research Associate,1971-74; Assistant Professor, 1974-78; Associate Professor, 1978-82; Professor, 1982-present, Rice University. Alfred P. Sloan Foundation Fellowship, 1976. Nicholas Salgo Distinguished Teaching Award, Rice University, 1980. George R. Brown Prize for Excellence in Teaching, Rice University, 1983. Fellow of the American Physical Society, 1986. Member, DAMOP Program Committee, 1988-91; Executive Committee, 1990-93. Member, Editorial Board, Review of Scientific Instruments, 1989-91. Member, NRC Panel on Future Opportunities in Atomic, Molecular and Optical Sciences, 1991-93. Chair, NRC Atomic-Molecular-Optical Sciences Assessment Panel, 1993. Member, NSF Advisory Committee for Physics, 1991-93. Member, EPSRC Atomic and Molecular Physics Review Panel, 1993-94. Member and Chair, Will Allis Prize Committee, 1993-present. *RESEARCH INTERESTS:* Atoms in high-lying Rydberg states and their application in studies of low-energy electron-molecule and ion-molecule interactions; use of electron-spin labelling techniques to examine the dynamics of rare gas metastable atom deexcitation in collisions with gas-phase targets and with surfaces.

KIRBY, KATE P. B.A., Harvard University (Radcliffe College) 1967; Ph.D., University of Chicago 1972; Postdoctoral Fellow, Harvard College Observatory, 1972-73; Research Physicist, Smithsonian Astrophysical Observatory, 1973-present; Lecturer, Harvard University Department of Astronomy, 1973-86; Associate Director, Harvard-Smithsonian Center for Astrophysics (heading Atomic and Molecular Physics Division), 1988-present; Deputy Director, Institute for Theoretical Atomic and Molecular Physics, 1989-present. Fellow, American Physical Society. DAMOP Activities: Secretary-Treasurer of DAMOP, 1984-87; DAMOP Executive Committee Member, 1991-94; DAMOP Program Committee, 1990-93; Member and Chair, DAMOP Fellowship Committee, 1990-91; Member, Local Organizing Committee for DAMOP meeting in Cambridge (May, 1987). Other Activities: Member, Committee on Atomic and Molecular Science of the NAS/NRC, 1982-85; Vice-chair and Chair, Maria Goeppert Mayer Award Committee of the A.P.S., 1988-89; Chair, Committee on Membership, A.P.S. 1990-92; Member of Executive Committee, Division of Computational Physics 1990-93; Councilor-at-large, A.P.S. Council, 1991-93; Member, A.P.S. Committee on Meetings, 1990-92; Member, Smithsonian Institution Advisory Committee on Global Change, 1990-91; Member and Chair, Advisory Committee to A.I.P. Education and Employment Statistics Division, 1991-present; Member A.P.S. Fellowship Committee 1993-present; Member, A.P.S. Nominating Committee, 1994-present; Chair, Theoretical Atomic, Molecular and Optical Community, 1992-94; Member, General Organizing Committee for ICPEAC, 1992-present. *RESEARCH INTERESTS:* Theoretical studies of atomic and molecular structure and processes: molecular excited states and transition probabilities; molecular photoionization, autoionization, and photodissociation; charge transfer; applications of atomic and molecular
physics to astrophysics and atmospheric physics.

Candidates for Executive Committee:

The Executive Committee is the governing body of our Division and advises the Chair and other officers of DAMOP. Elected members-at-large will serve three-year terms beginning immediately after the 1995 DAMOP Meeting.

BERRAH, NORA. B.S. Physics, University of Algiers, 1979; Ph.D. Physics, University of Virginia, 1987; Postdoctoral Research, 1987-1989, Assistant Scientist staff, 1989-1991, Physics Division, Argonne National Laboratory; Assistant Professor to Associate Professor, Western Michigan University, 1991 to present. Visiting Scientist, Argonne National Laboratory, May 1992; Visiting Scientist, Université d'Orsay, Paris, France, June-August 1992; Humboldt Fellow, Fritz-Haber-Institut Der Max Planck Gesellschaft, Berlin, Germany, August 1992-1993. Member, Division of Atomic, Molecular and Optical Physics (DAMOP); Member of the Committee on International Scientific Affairs (CISA) of the American Physical Society (APS), 1994-96; Member of the User Executive Committee of the Advanced Light Source (ALS), Lawrence Berkeley Laboratories, 1994-96; Member of the International Scientific Advisory Committee for the satellite of ICPEAC (e-2e & double photoionization processes), 1994-95; Co-organizer, Workshop on "Atomic Physics at the Advanced Photon Source", 1990; Local organizing committee, DAMOP, Chicago, IL 1992; Local Organizing Committee,"International Workshop in Photoionization, IWP'92", Berlin, Germany; Spokesperson for the PRT members of the vuv beamline for Atomic, Molecular and Optical Physics, beamline 9.0.1 of the ALS, 1995-97. *RESEARCH INTERESTS:* Laser spectroscopy on atoms, molecules and ions; fundamental processes of atomic structure and the dynamics of interaction of synchrotron radiation with atoms and molecules: double photoionization in He; high precision autoionization processes in rare gases; Auger effects; resonant Raman spectroscopy; photoionization of laser excited atoms using synchrotron radiation.

CRIM, F. FLEMING. B.S. 1969, Southwestern University; Ph.D. 1974, Cornell University. Staff Member, Western Electric Engineering Research Center, 1974-76; Director's Post-doctoral Associate, Los Alamos National Laboratory, 1976-77; Assistant Professor to Professor, University of Wisconsin, 1977-present. Alfred P. Sloan Research Fellow, 1981-83; Camille and Henry Dreyfus Teacher-Scholar, 1982; University of Wisconsin Romnes Faculty Fellowship, 1983; Helfaer Professor of Chemistry, 1985-91; Alexander von Humboldt Senior U.S. Scientist Award, 1986; Chairman, Physical Chemistry Division, American Chemical Society, (1988-89) Fellow, American Physical Society, 1989; Chancellor's Award for Excellence in Teaching, University of Wisconsin, 1991; Upjohn Teaching Award, Department of Chemistry, University of Wisconsin, 1992; Max Planck Research Award (with Jurgen Troe), 1993; John E. Willard Professor of Chemistry, University of Wisconsin, 1994. Chairman, Gordon Research Conference on Atomic and Molecular Interactions (July, 1988); AIP Ad Hoc Review Committee for the Journal of Chemical Physics (1989); External Advisory Committee of the Chemical and Laser Sciences Division, Los Alamos National Laboratory (1989-95) (Chairman, 1992); Chairman, ACS Task Force to Monitor the Journal of Physical Chemistry (1990-91); National Research Council Panel on Future Opportunities in Atomic, Molecular, and Optical Science (1991-93); Earl K. Plyler Prize Selection Committee, American Physical Society (1992-94); National Research Council Panel on Free Electron Lasers (1993-94); National Research Council Panel for the Joint Institute of Laboratory Astrophysics (1994-97); Editorial Advisory Board, Encyclopedia of Applied Physics (1989-); Editorial Advisory Board, Journal of Physical Chemistry (1987-93); Editorial Board, International Reviews in Physical Chemistry (1990-); Editorial Board, Journal of Chemical Physics (1990-1992); Advisory Editor, Advances in Chemical Physics (1993-); Advisory Editorial Board, Chemical Physics Letters (1994-); Board of Reviewing Editors, Science (1994-). *RESEARCH INTERESTS:* Molecular reaction dynamics. State-selected unimolecular reactions, bimolecular reactions, photodissociation, and collisional energy transfer. Vibrational state control of chemical reactions.

LIN, CHII-DONG. B. A. 1969, National Taiwan University; Ph.D. 1974, University of Chicago; Postdoctoral Fellow, 1974-6, Center for Astrophysics, Harvard University; Visiting Assistant Professor, 1976-78, Kansas State University; Assistant Professor to Professor, 1979-90, University Distinguished Professor, 1990-present, Kansas State University. Visiting Professor, June 1986, University of Paris. Visiting Scientist, 1986-87, Argonne National Laboratory. Visiting Professor, 1987, National Taiwan University. Sloan Foundation Fellow, 1979-83. NORDITA Fellowship, 1990 summer. APS Fellow, 1986. Member, ICPEAC General Committee, 1989-93. Executive Committee, DOE Energy Research Supercomputer User Group, 1988-90. Member, DOE's study panel of future opportunities of atomic collision theory. Co-Organizer, Workshop on " Hidden Crossing in atomic collisions", 1991; on "Challenges on two-electron atoms and ions", 1992. DAMOP Thesis Award Selection Committee, 1993-94. DAMOP Program Committee, 1994-95. Few-body Physics Topical Group Nomination Committee, 1992-4. *RESEARCH INTERESTS:* Hyperspherical approach to few-body systems; doubly excited states of atoms; photoionization and photodetachment; positron-atom collisions; muonic systems; electron correlations; triply excited states of atoms; ion-atom collisions; charge transfer; collisions of highly charged ions; radiative and Auger processes.; hyperspherical close coupling method.

MANSON, STEVEN T. B.A. 1961, Renesslaer Polytechnic Institute; M.A. 1963, Ph.D. 1966, Columbia University. NAS-NRC Postdoctoral Fellowship, NBS, 1966-68; Assistant Professor to Regents Professor, Georgia State University, 1968-present. Visiting Scientist, Battelle Northwest, 1974. Fellow of the American Physical Society; Member of the Institute of Physics (London). Editorships: Radiation Physics and Chemistry, associate editor for radiation physics, 1994-present; Editorial Boards: Journal of Electron Spectroscopy, 1984-88; Chemical Physics Letters, 1991-94. Member, ICPEAC General Committee, 1993-present; X-Ray and Inner-Shell Conference International Scientific Board, 1987-93; DEAP Program Committee, 1974-76; DEAP Executive Committee, 1976-77; DEAP Fellowship Committee, 1977-79, 1983-85. Army Research Office Proposal Review Board, 1980-86. NSF Presidential Young Investigator Review Panel, 1988. *RESEARCH INTERESTS:* Photoioniztion, photoelectron spectroscopy, and photoelectron angular distributions of atoms and ions, ground and excited states; Inelastic collisions and electron spectroscopy of ion-atom and electron-atom collisions; electron-ion radiative recombination; relativistic effects in atomic collisions and photoionization; properties of atomic ions.

AMO Physics Reference Book Coming Soon!

A project initiated about two years ago by the AIP to assemble an Atomic, Molecular and Optical Physics Reference Book is now in its final stages of completion. The book will contain over 80 chapters written by well-known experts in the field. It is intended to provide an authoritative and concise summary of the key techniques and results of AMO Physics, together with applications to related fields such as chemistry and materials science. It should provide a ready source of information and guide to the literature for both graduate students and established researchers. This is a very large and ambitious project which will help to unify the field of AMO Physics and elevate its profile.

Most of the chapters are now in hand, and the remainder have been promised in the near future. There is still much editorial work to be done, but if all goes well, it will be ready for distribution by the time of the Toronto DAMOP meeting.

I would like to take this opportunity to thank my Associate Editor, Nigel Hedgecock, the members of the Editorial Board, and all the authors for their tireless efforts on behalf of this project. *...Gordon Drake, Reference Book Editor.*

1995 Meeting of the Division of Atomic, Molecular and Optical Physics
Toronto, Ontario, Canada
May 17-19, 1995

General Information:

The twenty-sixth annual DAMOP Meeting will be held jointly with the Division of Atomic and Molecular Physics (DAMP) of the Canadian Association of Physicists (CAP) on the campus of the University of Toronto. The meeting will begin with a welcome reception on Tuesday evening, May 16 and end on Friday afternoon, May 19, 1995.

Abstracts of Contributed Papers:

Abstracts (one original and two duplicates) in the areas of atomic, molecular and optical physics should be sent to:

Chun Lin
Abstracts DAMOP/DAMP 95
Department of Physics
University of Wisconsin
1150 Wisconsin Avenue
Madison, Wisconsin 53706

The **deadline** for receipt of abstracts for the DAMOP/DAMP meeting is **January 31, 1995**. Abstracts received after this date will not be included in the regular program that is published in the *Bulletin*. Post-deadline abstracts may be submitted until April 30 and will be included in the supplementary program if space permits. A first author should submit no more than one abstract. Abstracts must be camera-ready and conform to APS guidelines found in any issue of *APS Meetings News*. Please indicate your preference for poster or oral presentation on the lower left-hand corner of the abstract form. Each oral presentation will be allotted 12 minutes, including 2 minutes for discussion. Poster presentations will be on 4 foot by 6 foot boards.

Transportation:

Toronto International Airport is about a 40-minute drive from the University of Toronto. Taxi and bus transportation from the airport are available. Toronto is located on the shore of Lake Ontario about 100 miles from Niagara Falls, and can be reached by car via the Queen Elizabeth Expressway.

Air Canada and Continental Airlines are the official airlines of the conference. To take advantage of discounted airfares, call 1-800-361-7585 and quote event number CV950007.

Participants who are in the United States on a temporary visa should make arrangements well in advance to ensure that their visas allow them to enter Canada and to return to the United States.

Preregistration:

Preregistration can be done by completing and sending the form found in this Newsletter with payment, and must be received before April 1, 1995 to obtain the reduced rate. This registration fee will cover the cost of conference materials, coffee breaks, the welcome reception on Tuesday evening and the conference banquet on Thursday evening at the Royal York Hotel in downtown Toronto. Guests and accompanying persons may purchase tickets for the banquet and reception for $50.

Accommodations:

A block of dormitory rooms has been reserved on the campus of the University of Toronto. Single rooms are available at a cost of CDN$55 per night and double rooms at CD$35 per person per night (breakfast is included). The double rooms are dormitory rooms with communal bathroom facilities on each floor. The single rooms are newer and more nicely furnished and are arranged in blocks of four or five, with shared sitting room, kitchen and two bathrooms for each block. Paid parking will be available. Rooms may be reserved by completing and mailing the enclosed reservation form. Reservations will be confirmed if full payment is received before April 1, 1995.

Two hotels within less than ten-minutes walking distance from the university are listed below. Special conference rates for these hotels have been negotiated for a limited block of rooms. *Please book rooms directly with the hotel before April 16, 1995* to be eligible for the conference rate.

Journey's End Quality Hotel
280 Bloor Street West
(416) 968-0010
FAX: (416) 968-7765
CDN$69 per night (single or double room)

Park Plaza Hotel
4 Avenue Road
(416) 924-5471 or 1-800-268-4927
FAX: (416) 675-9351
CDN$99 per night (single or double room)

Environs:

Toronto is a safe and clean city. It has a vast array of cultural facilities, including concert halls, the second largest theatrical center in North America, museums and a science center, which can be reached via an efficient subway system. Sites within 100 miles include the Shakespeare Festival in Stratford, the Shaw Festival in Niagara-on-the-Lake and Niagara Falls. Further information will be available at the conference, or in advance by calling 1-800-ONTARIO).

Further Information:

The contacts for registration and housing information are listed on the forms. For other conference information, contact:

William van Wijngaarden
York University
FAX: (416) 736-5516
E-MAIL: FS300502@SOL.YORKU.CA

1995 DAMOP MEETING INVITED SYMPOSIA

Symposium on Evolution in Atoms and Molecules

P. Billet, *Adiabatic transfer and coherent manipulation of atoms by lasers*
L.D. Noordam, *Adiabatic population transfer in multiphoton excitation processes*
F.H. Mies, *Adiabatic field-dressed molecular states in the multiphoton dissociation of* H_2^+
L.A. Bloomfield, *The evolution of magnetic moments in clusters.*

Symposium on Photoeffects at High Photon Energies

H. K. Haugen, *Multiphoton absorption studies and single photon UV spectroscopy of negative ions*
M.O. Krause, *Studies of open-shell atoms at the multiplet level*
K. P. Huber, *High-resolution EUV jet absorption studies of small molecules at a synchrotron radiation source*
D.W. Lindle, *X-ray atomic and molecular spectroscopy at the ALS.*

Symposium on Recent Development in AMO Theory

J. Macek, *Complex R-plane calculation of the fragmentation of three charged particles*
S. Watanabe, *Hyperspherical close-coupling approach to two-electron systems*
Shih-I Chu, *Generalized Floquet approaches to atomic and molecular multiphoton processes in an intense laser field*
P. Bunker, *The spectra and dynamics of highly flexible molecules.*

Symposium on Electron-Ion Collisions Within and Without Ion-Atom Collisions

E.C. Montenegro, *Role of quasi-free electrons as ionizing agents in ion-atom collisions*
R.E. Marrs, *Electron-ion collisions in the Livermore Super-EBIT*
S. Hagmann, *Diffraction of quasi-free electrons in the potentials of highly charged ions*
R. Doerner, *Separating electron-nuclear and electron-electron processes in ion-atom collisions with recoil ion momentum spectroscopy.*

Symposium on Fullerenes and Clusters.

E.G. Salzborn, *Electron removal from* C_{60} *by ionization and by electron impact*
T.W. LeBrun, *The dynamics of* C_{60} *fragmentation*
J.W. McConkey, *Electron-cluster interactions probed by metastable fragments and electron emission*
G. Scoles, *Infrared spectroscopy of alkali metals in helium clusters.*

Symposium on Advances in Electron Collision Physics

G.H. Dunn, *The changing faces of electron-ion collisions*
C.C. Lin, *New developments in measurement of electron-atom collision cross sections*
E.J. Mansky, *Recent advances in electron - metastable-atom collision theory*
I.I. Fabricant, *Electron scattering by neutral targets at milli- and submilli-electron-volt energies.*

Symposium on Dissociative Recombination

A.E. Orel, *Resonant dissociative recombination in* HeH^+ *and* H_3^+
M.R. Flannery, *Theory of dissociative recombination*
R. Johnson, *Dissociative recombination of complex ions*
S. Guberman, *New mechanisms for dissociative recombination.*

Symposium on Laser Cooling of Neutral Atoms

S.L. Rolston, *Laser cooling in optical lattices*
W. Ketterle, *Evaporative cooling of magnetically trapped sodium*
E.A. Cornell, *Evaporative and cyclic cooling: colder magnetically trapped atoms in JILA*
S. Chu, *Recent progress in cooling and trapping of sodium atoms.*

Symposium on Atomic and Molecular Physics as a Tool

R.S. Berry, *Topographies and dynamics of multidimensional potential surfaces and their application to controlling nanoscale materials and polymer folding*
F.W. Meyer, *Ion-surface collisions for fusion research*
D.E. Murnick, *Stable isotopic analysis with optogalvanic effect.*

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---1995 DAMOP Symposia, continued)---

Symposium on Atomic Collisions: Techniques and Applications

J.P. Doering, *Electron-impact ionization branching ratios in molecules*
K.B. MacAdam, *Angular effects in Rydberg atom collisions*
F.B. Dunning, *Rydberg atoms: a nano-scale laboratory for study of low-energy electron-molecule collisions*
V. McCoy, *Studies of electron-molecule collisions using parallel computers.*

Symposium on Ultrafast and High-Field Atomic Physics

C. Rhodes, *High energy-density clusters*
L. DiMauro, *Direct multiple ionization*
P. Corkum, *Using intense fields to observe nuclear dynamics in molecules.*

Individual Invited Papers

E.A. Hessels, *Relativistic and QED tests of large-size atoms using precision measurement of Rydberg states in few-electron atoms*
A.D. May, *Polarization states in lasers.*

Lectures by 1995 Rabi and Broida Prize Winners

R. G. Hulet (winner of the I.I. Rabi Prize), *Prospect for observing quantum statistical effects in laser cooled lithium*
A.H. Zewail (winner of the Herbert P. Broida Prize), *Atomic and molecular dynamics in femtosecond resolution.*

AMO Doctoral Thesis Prize Symposium

Michael Courtney, *Recent advances in periodic orbit spectroscopy*
Brian Lemoff, *Femtosecond-pulse-driven extreme-ultraviolet laser*
David Neyer, *Quantum state resolved photodissociation dynamics of the formyl radical*
Chin-Chun Tsai, *All-optical multiple resonance spectroscopy of Na_2 using an ultrasensitive ionization detector.*
Matthew Walhout, *Studies of laser-cooled and magneto-optically trapped xenon.*

Undergraduate Session

Don Madison is organizing a special session featuring research performed by undergraduate students at the Toronto meeting. A call for papers was sent in November to all members of DAMOP who are associated with a University or College, and 12 papers were submitted. A DAMOP committee will select the top four papers and these students will be invited to present a 15 minute talk. The members are K. Becker, T. Gay, M. Khakoo, C.D. Lin and A. Stauffer. The travel expenses for these students will be paid by the NSF.

News from TAMOC

The new president of TAMOC is Don Madison and the new secretary is David Schultz. The new officers would like to update the membership list. If you would like your name added to the TAMOC roles, please notify:

David Schultz
Physics Division
Oak Ridge National Laboratory
Building 6003, MS 6373
PO Box 2008
Oak Ridge, TN 37831-6373
E-MAIL: schultz@orph01.phy.ornl.gov

Please indicate whether you would like to receive the TAMOC newsletter and other information through e-mail or regular mail.

The annual TAMOC meeting will be at 8:30 on Tuesday May 16 following the opening reception for the Toronto DAMOP meeting. At this meeting, the future goals and directions for TAMOC will be discussed with a particular emphasis on the role TAMOC can play in addressing the major issues facing the community.

Call for Fellowship Nominations

Each year, the DAMOP division is entitled to honor approximately 12 of its members by the award of Fellowship in the APS. The award can be for a single particularly important accomplishment, or for a sustained record of contributions to the field. The list of recommendations is selected by the DAMOP Fellowship Committee from those nominated, and communicated to the APS Executive for final approval. This year, the Fellowship Committee members are: Gordon Drake (chair), Tu Nan Chang, Hanspeter Helm, William Lichten and James Samson.

The accomplishments of our colleagues are sometimes overlooked in the selection procedure. Therefore, please think carefully about people who should be nominated and fill out the form that appears from time to time in the APS News. The nomination should include a cv and supporting letters, **and reach the APS office by the deadline date of March 15, 1995.**

...Gordon Drake, Chair, Fellowship Committee

1995 DAMOP Meeting
Toronto, Ontario, Canada
Application for Student Travel Support

Name: _____ Citizenship: _____

University: _____ S. S. Number: ____ - ____ - ____

Degree Expected: _____

Address: _____ Date Expected: _____

_____

_____

_____

Estimated expenses: Transportation $_____ Lodging $_____

Are any other funds available to you? ☐ Yes ☐ No

If "Yes", how much? $_____

Title of Abstract submitted to 1995 DAMOP Meeting:

_____

_____

State briefly how you will benefit from attendance at the DAMOP Meeting:

_____

_____

_____

_____

_____

Please complete and return before April 15, 1995 to:

Ron Phaneuf
Secretary-Treasurer, DAMOP
Department of Physics / 220
University of Nevada, Reno
Reno, NV 89557-0058

PREREGISTRATION FORM
1995 Annual Meeting of the Division of Atomic, Molecular and Optical Physics
16-19 May 1995 Toronto, Ontario, Canada

Please type or print name as you wish it to appear on your badge:

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First name(s) Last name

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Institution

Complete Mailing Address:

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Telephone: (____) _____ Fax: (____) _____

Please check one box (in US or CDN currency) as follows:

APS/CAP Member:	Before April 1, 1995:	( ) US$200.	( ) CDN$275.
	After April 1, 1995:	( ) US$250.	( ) CDN$350.
APS/CAP nonmember:	Before April 1, 1995:	( ) US$275.	( ) CDN$375.
	After April 1, 1995:	( ) US$325.	( ) CDN$450.
Student:		( ) US$100.	( ) CDN$135.
Banquet/Reception for Guest/Accompanying person		( ) US$50.	( ) CDN$70.

Please make certified cheques payable to: **University of Toronto**

Or circle one: VISA or MASTERCARD Number:_____

Date of Expiry:_____ Signature: _____

Send to: U of T Conference Services, 45 Willcocks St., Toronto, Ontario, CANADA M5S 1C7

UNIVERSITY DORMITORY ROOM REGISTRATION FORM
1995 Annual Meeting of the Division of Atomic, Molecular and Optical Physics
16-19 May 1995 Toronto, Ontario, Canada

Name: _____
First Last

Address: _____

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Telephone: (____) _____ FAX: (____) _____

Arrival Date: _____ Departure Date: _____
(please note that check-in time is after 2 pm and checkout is before noon)

Cost is in Canadian dollars and includes breakfast:

Single room: _____ nights @ $35 per night

Double room: _____ nights @ $35 per night (Roommate: _____)

Total Payment: Canadian Dollars $ _____

Please make certified cheque (in Canadian dollars) payable to: **University of Toronto**

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Please direct any questions about university housing to: William Paolini, U of T Conference Services (phone: (416)978-5391; E-mail: bill.paolini@utoronto.ca; Fax: (416)971-2457).