Division of Atomic, Molecular and Optical Physics NEWSLETTER

A Division of The American Physical Society — February 1996

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Inside...

Ugo Fano Wins Enrico Fermi Award!

Ugo Fano, professor emeritus at the University of Chicago, will receive the Department of Energy's Enrico Fermi Award for pioneering contributions to the theory of atomic and radiation physics, which have had great impact on the development of gas lasers and in nuclear medicine. Fano is one of the last living students who worked with Fermi. The Presidential award is the government's oldest science and technology award, and includes of a gold medal and a $100,000 honorarium. Congratulations!

1996 Will Allis and Davisson-Germer Prize Winners Announced!

We congratulate our two most recent past DAMOP chairs, **Chun Lin** and **Thomas Gallagher**, who were named winners of the 1996 Will Allis and Davisson-Germer Prizes, respectively, by The American Physical Society. Each prize consists of a $5,000 honorarium and a certificate citing the contributions of the recipient.

The Will Allis Prize recognizes and encourages outstanding research into the microscopic or macroscopic behavior of ionized gases. Chun Lin is the John and Abigail Van Fleck Professor of Physics at the University of Wisconsin, and is cited *"for advancing the understanding of the microscopic behavior of ionized gases through his innovative and pioneering studies of excitation in electron and ion collisions with atomic and molecular targets."*

The Davisson-Germer Prize recognizes and encourages outstanding work in atomic or surface physics. Tom Gallagher is the Jesse W. Beams Professor of Physics at the University of Virginia, and is cited *"for his seminal elucidation of the characteristics and collisional behavior of highly excited states of atoms."*

Election of Officers

We are grateful to this year's nominating committee, chaired by Joe Dehmer, who worked into the Christmas holiday to assemble an outstanding slate of candidates for DAMOP offices for 1996-97. A brief biographical sketch is presented for each candidate. Please take the time to mark the self-mailing ballot and return it by April 1. Your input is important!

THERE IS A BALLOT INSIDE

PLEASE VOTE!

DAMOP Committees for 1995-96

Remember to √ and mail your ballot!

The following are the members of our DAMOP committees for 1995-96. We are grateful to these members for their willingness to serve and for their efforts on our behalf. Please contact a committee member to provide input or to request information.

Executive Committee (term ends)
Richard Freeman (Chair, 97)
Gordon Drake (Chair-Elect, 98)
Kate Kirby (Vice-Chair, 99)
Chun Lin (Past Chair, 96)
Ronald Phaneuf (Sec. Treas., 96)
Joseph Dehmer (Div. Councillor, 96)
Gordon Dunn (Div. Councillor, 98)
Nora Berrah (98)
Philip Bucksbaum (96)
Charlotte Fischer (97)
Katharine Gebbie (96)
Keith MacAdam (97)
Steven Manson (98)

Nominating Committee
Joseph Dehmer (Chair)
Philip Bucksbaum
James Cohen
Gordon Dunn
Anthony Starace

Fellowship Committee
Kate Kirby (Chair)
James Bergquist
Tu-Nan Chang
Thomas Morgan
James Samson

Publications Committee
Michael Prior (Chair)
Thomas W. Mossberg
Robert R. Jones
William Phillips
Leposava Vuscovic
Michael Morrison

Thesis Award Committee
Philip Cosby (Chair,96)
Ken Kulander (Vice-chair, 97)
Mark Kasevich (97)
Paul Julienne (96)
Peter Koch (96)

Program Committee
Gordon Drake (Chair, 97)
Norman Bardsley (98)
Kurt Becker (96)
William Cooke (97)
George Gibson (97)
Chi-Dong Lin (96)
Denis Lindle (98)
Donald Madison (96)
Fred Meyer (98)
Pierre Meystre (98)
Howard Milchberg (97)
William McConkey (98)
Thomas McIlrath (96)
Daniel Murnick (96)
Linn Van Woercom (97)
Kate Kirby (ex officio)
Richard Freeman (ex officio)
Ronald Phaneuf (ex officio)

Davisson-Germer Prize:
Bernd Crasemann (Chair)
Andrew Tam (Vice-Chair)
Daniel Larson
Stephen Leone
Carl Wieman

Will Allis Prize:
F. Barry Dunning (Chair)
Kurt Becker
Eldon Ferguson
James Lawler
James Peterson.

CAMOS

The **Committee on Atomic, Molecular and Optical Sciences** is a panel of the National Academy of Sciences which recommends policy for atomic, molecular and optical sciences in the U.S. The members for 1995-96 are:
William Stwalley (Chair, 97)
Wendell T. Hill (Vice Chair, 96)
Stuart Crampton (98)
Robert W. Field (96)
Daniel Grischkowski (96)
Tony F. Heinz (97)
John L. Hall (99)
John C. Miller (98)
Paul S. Julienne (97)
H. Jeffrey Kimble (97)
Siu Au Lee (96)
C. William McCurdy, Jr. (96)
Mara G. Prentiss (97)
David J. Wineland (96)
Donald C. Shapiro (NRC Staff)
Daniel F. Morgan (NRC Staff).

Call for APS Fellowship Nominations

The DAMOP Fellowship Committee relies on the AMO community to nominate outstanding individuals to receive this honor. Because fellowship selection within DAMOP is highly competitive, submission of additional supporting material such as the candidate's vita, bibliography and letters of support in addition to the nomination form is encouraged. The nomination form is printed in the January 1996 issue of *APS News* and also available on the APS homepage at http://aps.org. Nomination packages should reach the APS by March 15, 1996.
. . . Kate Kirby, Committee Chair

Congratulations to New APS Fellows!

We are proud to announce and to congratulate the following DAMOP members who were elected to fellowship in the American Physical Society in 1995. Certificates will be presented at the 1996 DAMOP meeting in Ann Arbor in May.

AMUSIA, Miron Ya
Ioffe Physical-Technial Institute, Russia
For the discovery of the collective nature of atomic photoionization and prediction of the collectivization of few-electron shells under the action of many-electron neighboring shells.

COHEN, James Samuel
Los Alamos National Laboratory
For pioneering contributions to the application of techniques of theoretical atomic and molecular physics to formation of muonic atoms and molecules, their interactions with normal species, and muon-catalyzed fusion.

COLLINS, Lee A.
Los Alamos National Laboratory
For distinguished theoretical research in atomic and molecular physics, notably on novel approaches to electron-molecule scattering, electron-atom scattering in intense fields, and the simulation of dense plasmas.

CSANAK, George
Los Alamos National Laboratory
For development of many-body Green's function techniques of bound-state and scattering properties of atomic and molecular systems; significant contributions to the theoretical foundation and physical interpretation of electron-photon coincidence experiments, and for contributions to the understanding of electron scattering by laser-excited targets.

DREIZLER, Reiner Martin
University of Frankfurt, Germany
For important contributions to the development and applications of density functional theory and to the theory of atomic collision processes.

FABRIKANT, Ilya I.
University of Nebraska
For his studies of electron collisions and Rydberg atom collisions involving the formation of temporary negative ions in the presence of external static fields.

GRIFFIN, Donald Christian
Rollins College
For theoretical developments in the fields of relativistic atomic structure and electron collisions with atomic ions, as well as contributions to undergraduate science education.

HULET, Randall G.
Rice University
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.

PINNINGTON, Eric H.
University of Alberta, Canada
For his extensive studies of highly ionized and excited atoms and the development of new techniques for the precise determination of lifetimes and oscillator strengths of cosmological significance.

PRATT, Stephen Turnham
Argonne National Laboratory
For fundamental contributions to molecular physics through imaginative and innovative studies that probe electron-nuclear coupling, and, in particular, for his elegant experiments on molecular photoionization, predissociation, autoionization, and excited-state reactions.

SCHLESINGER, Mordechay
University of Windsor, Canada
For the development of the unitary group approach to the theory of complex spectra and pioneering studies of impurity ion spectra in crystals.

SCHNEIDER, Dieter Herbert
Lawrence Livermore National Laboratory
For his contributions to the understanding of ion-atom collisions through electron spectroscopy and for his experiments elucidating the collision dynamics of very highly charged ions.

WEST, John Bailey
Daresbury Laboratory, United Kingdom
For seminal contributions to understanding of electron correlation effects and resonant phenomena in photoionization of atoms and molecules, through pioneering work in the application of photo-ion and angle resolved photo-electron spectroscopy.

Invited Symposia for 1996 DAMOP Meeting

Opening Plenary and Prize-Winner Session
Chair: Richard Freeman
Serge Haroche, Beller Lecture, *Quantum Measurements and Decoherence Studies with Single Atoms in Cavities*
Thomas Gallagher, Davisson-Germer Prize Lecture, *Resonant Collisional Energy Transfer with Rydberg Atoms*
Chun C. Lin, Will Allis Prize Lecture, *TBA*
Roy J. Glauber, Dannie Heinemann Prize Lecture, *TBA*

Applications of AMO Physics in Lighting Science
Organizer and Chair: James Lawler
John Waymouth, *Where We Are in Light Source Performance; Where We Would Like to Get.*
Douglas Doughty, *Mercury-Free Fluorescent Lighting.*
Helmer Adler, *High-Intensity Discharge Lighting.*
Nevin Gibson, *Low Pressure Molecular Discharges for Lighting.*

Applications of Laser Techniques and Atom Traps to Atomic Collisions
Organizer and Chair: Chun C. Lin
Hartmut Hotop, *Use of Laser Photoelectron Sources for Studies of Low-Energy Electron Collisions.*
Laura Ratliff, *Collisions and Photoassociation of Laser-Cooled Atoms: When Atoms Go Bump in the Light.*
Thad Walker, *Electron-Scattering Measurements Using a Magneto-Optical Trap.*
Phillip Gould, *Photoionization and Cold Collision Studies Using Trapped Atoms.*

Bose-Einstein Condensation of Atoms in the Gas Phase
Organizer: Philip Bucksbaum
Daniel Kleppner, *Attempts to Observe BEC in Atomic Hydrogen.*
Eric Cornell, *Bose-Einstein Condensation in Rubidium.*
Randy Hulet, *Bose-Einstein Condensation in Lithium.*
Wolfgang Ketterle, *Bose-Einstein Condensation in a Gas of Sodium.*
Keith Burnett, *Theory of Bose-Einstein Condensation in Atomic Gases.*

The Eclectic Life of AMO Physics
Organizer: Linn Van Woercom Chair: Thomas McIlrath
John E. Thomas, *Quantum Resonance Imaging.*
Gregory Lafyatis, *Atomic Beam Magnetic Resonance: A New Way to Study High T_c Superconductors.*
Stephen H. Lieberman, *Laser-Induced Spectroscopic Measurements Over Optic Fibers for In Situ Environmental Analyses.*
Michael Feld, *Fluorescence Tomography: Imaging Disease Inside the Body.*

High-Precision Spectroscopy in Rydberg States
Organizer and Chair: Gordon Drake
Richard Drachman, *Asymptotic Expansion Theory for Rydberg States.*
Eric Hessels, *High Precision Spectroscopy of Lithium Rydberg States.*
Stephen Lundeen, *High Precision Spectroscopy of Helium Rydberg States.*
David Shiner, *Precision Spectroscopy in Helium and Interface with Nuclear Physics.*
Chris Greene, *Interpretation of Transition Frequencies of Rydberg States.*

Highlights of Recent Progress in VUV and X-Ray Interactions
Organizer: C. Denise Caldwell Chair: Manfred Krause
Yoshiro Azuma, *Photon-Excitation in Hollow Atoms.*
Alexander Menzel, *Double-Electron Excitations in Helium.*
Albert Stowlow, *Molecular Dynamics Via Femtosecond Time-Resolved Photoelectron Spectroscopy.*
Jorge Rocca, *Discharge-Pumped Soft X-Ray Lasers.*

(continued on next page)

1996 DAMOP Invited Symposia *(continued)*

Ion-Atom Collisions
Organizer and Chair: C. Lewis Cocke
Robert Dunford, *Double Quantum Jumps and Searches for $e^+ + e^-$ Peaks - Some Recent Results from ATLAS.*
Randy Vane, *Atomic Physics with 33 TeV Lead Ions.*
Harvey Gould, *Charge-Changing Collisions Between Bare Ions.*
Rienhold Schuch, *A New Generation of Atomic Collision Experiments at Storage Rings.*

Molecules in Strong Laser Fields
Organizer: George Gibson Chair: Louis DiMauro
Tamar Seideman, *Ionization of Molecules in Strong Laser Fields.*
Martin Schmidt, *Dynamics of Strong Laser Field Induced Coulomb Explosion of Molecules.*
Stephane Chelkowski, *Dissociation, Ionization and Coulomb Explosion in Strong Laser Fields.*
Henrik Stapelfeldt, *Observation of Enhanced Ionization Rate of Molecular Ions.*

Novel Aspects of Electron-Molecule Scattering
Organizer and Chair: Kurt H. Becker
Paul Burrow, *Dissociative Attachment in Polyatomics - a Challenge for Chemical Physics.*
Thomas Recigno, *Calculations of Cross Sections for Dissociative Excitation and Dissociation.*
Kam Tong Leung, *Recent Developments of Momentum Density Measurements of Polyatomics by Molecular (e, 2e) Spectroscopy.*
Karl Blum, *Electron Scattering from Oriented and State-Selected Molecules.*

Recent Advances in Collision Theory
Organizer and Chair: Don Madison
Igor Bray, *Calculation of Electron-Impact Excitation and Ionization of Atoms.*
Michael Pindzola, *Time-Dependent Close-Coupling Method for Electron-Impact Excitation of Atoms.*
James McGuire, *Probing the Dynamics of Electron Correlation with Charged Particles and with Photons.*
Kenneth Kulander, *Recent Advances in Ultra-Short Pulse Multiphoton Processes.*

Strong Atom-Field Coupling and Quantum Computing
Organizer and Chair: Carl Wieman
Christopher Monroe, *From Quantum Gates to Quantum Computers with Trapped Ions.*
Seth Lloyd, *Quantum Analog Computers.*
Jeff Kimble, *Implementing Quantum Logic in Cavity QED.*
Thomas Pellizzari, *Quantum Computing with Atoms and Photons.*

Ultrafast Interactions and Applications
Organizer: Philip Bucksbaum
Robert R. Jones, *Rydberg Atoms and Half-Cycle Pulses.*
Henry Kapteyn, *Ultrafast High Harmonic Generation.*
+ contributed papers.

AMO Thesis Award Symposium

Other 1996 DAMOP Meeting information and forms begin on page 11.

GEC Web Site

The Gaseous Electronics Conference (GEC) is in the process of establishing a worldwide web site. Its URL is
http://www/gec.org/gec/

STUDENTS: ***Remember, the first year of APS Membership for students is still free! This includes membership in three divisions and/or topical groups.***

NEWS FROM TAMOC

Reactions to the "Forum on Jobs" held last year at the Toronto DAMOP were mostly quite positive (for a summary, see the TAMOC home page). Following the Forum, TAMOC took a poll to determine the community's interest in: (I) developing a "Hot Topics" report which could be used to justify funding AMO theory, (II) developing a report designed to provide a case for hiring AMO theorists, or (III) determining that no report was needed at this time. We appreciate the efforts of those who took the time to respond and especially those who included detailed comments. However, few responses were received, and these were about evenly divided between options I and II. Consequently no firm conclusion can be drawn as to the action to be taken. Further discussion of this topic is planned for the next TAMOC meeting.

The next TAMOC meeting will be held Wednesday evening May 15 at 8:00 p.m. in Ann Arbor. This year, the focus of the meeting will be a "Forum on Funding." Given the present state of government and corporate funding of AMO physics, and the apparent prospects for the future, it is timely for the community to discuss how it is going to respond to an almost certain downsizing of funding in the next five years. This issue transcends TAMOC and the Forum will include discussions of funding directions for both experimental and theoretical research. We expect that this year's Forum will produce as many stimulating discussions and suggestions as the Forum on Jobs did.

Finally, we wish to remind interested parties of the existence of the TAMOC home page on the World Wide Web (http://www-cfadc.phy.ornl.gov/tamoc/tamoc.html) where we will continue to post announcements, job offerings etc. We encourage you to submit (preferably already in the HTML format) appropriate material to the Secretary.

Chair:	**Don Madison**	**madison@physics.umr.edu**
Secretary:	**David Schultz**	**schultz@orph01.phy.ornl.gov**

Other Meetings

Workshop on Atomic Physics with Hard X-Rays from High Brilliance Synchrotron Light Sources, May 20-21, 1996

A workshop on atomic physics with hard X-rays from high-brilliance synchrotron light sources will be held at Argonne National Laboratory on May 20 - 21, 1996. Topics to be addressed will include photoionization, x-ray scattering, inner-shell processes, resonant Raman spectroscopy, recoil-momentum spectroscopy, electron and x-ray spectroscopy, and the present status of third-generation synchrotron x-ray sources.

For further information contact:

Steve Southworth
Physics Division, Bldg. 203
Argonne National Laboratory
Argonne, Illinois 60439
TEL: 708-252-3894
FAX: 708-252-6210
e-mail: southworth@anl.gov

Fourteenth Biennial International Conference of the Application of Accelerators in Research and Industry, November 6-9, 1996

The Fourteenth Biennial International Conference of the Application of Accelerators in Research and Industry will be held at the University of North Texas in Denton, Texas, November 6-9, 1996 (Wednesday through Saturday). The proceedings of the conference will be published in **Nuclear Instruments and Methods** in April, 1997. The deadline for submission of abstracts in APS format is July 1, 1996. For further information contact:

Jerome L. Duggan
The University of North Texas
Department of Physics
P. O. Box 5368
Denton, TX 76203-0368
TEL: 817-565-3252 or 817-565-3250
FAX: 817-565-2227
e-mail: stippec@cas.unt.edu

Election of Divisional Officers

Candidates for Vice-Chair:

The vice-chair takes over as chair of the Fellowship Committee after the 1996 DAMOP Meeting, succeeds to Chair-Elect after the 1997 Meeting (serving as chair of the Program Committee at the 1998 DAMOP Meeting), and then succeeds to DAMOP Chair for the year preceding the 1999 Meeting. The Chair presides over Executive Committee meetings, appoints committees and serves as spokesperson for the Division. The total term of office for this position is therefore three years, beginning in May, 1996.

KULANDER, KENNETH C. BS Mathematics, Cornell College, 1965; Ph.D. Physical Chemistry, University of Minnesota, 1972. Postdoctoral Fellow, University of Minnesota, 1972-75; Senior Research Associate, Daresbury Laboratory, Warrington, England, 1975-78; Staff Physicist, 1978-86, Leader, 1986 to present, Theoretical Atomic and Molecular Physics Group, Lawrence Livermore National Laboratory. Visiting Scientist, Max Planck Institute for Quantum Optics, Garching, Germany, 1982-83; JILA Visiting Fellow, University of Colorado, 1993-94. Lawrence Livermore National Laboratory Physics Distinguished Achievement Award, 1989, 94. Fellow, American Physical Society, 1989; Member, Optical Society of America. DAMOP: Member, Fellowship Committee, 1990-92, Thesis Prize Committee, 1996; LSTG: Member, Nominating Committee, 1995; FBSTG: Vice-Chair, 1995 and Member, Fellowship Committee, 1996. Co-chair, Workshop of Super-Intense Laser-Atom Physics, 1991; Local Organizing Committee, DAMOP, 1991; Vice Chair, Multiphoton Gordon Conference, 1996; Member, Program Committees: IQEC, 1987; OSA Conference on High Energy Density Physics with Sub-ps Lasers, 1989; ILS/OSA Annual Meeting, 1991-93, 95-96; OSA Short Wavelength Conference, 1993, 97; International Conference on Multiphoton Processes, 1993, 96; NATO ARW on Super-Intense Laser-Atom Physics, 1995; SPIE/OSA Laser Optics Conference and Conference on Coherent and Nonlinear Optics, 1995; QELS, 1995-6; APS/AAPT Joint Meeting, 1996. Member, Editorial Board, International Journal of Nonlinear Optical Physics, 1990- ; DOE Review Panels, 1991-92; Minnesota Supercomputer Institute Review Panel, 1993; Lawrence Livermore National Laboratory, Laboratory Directed Research and Development Committees, 1991, 95. *RESEARCH INTERESTS:* Theory of atomic and molecular scattering processes, molecular photodissociation, development of computational methods for time-dependent dynamics, multiphoton processes in atoms and molecules, collisions in strong laser fields.

WIEMAN, CARL E. S. B., MIT 1973; Ph.D., Stanford University 1977; Assistant Research Scientist, Department of Physics, University of Michigan, 1977-1979; Assistant Professor of Physics, Univ. of Mich., 1979-84; Associate Professor of Physics, University of Colorado, 1984-87; Fellow, Joint Institute for Laboratory Astrophysics, 1985-present; Professor of Physics, University of Colorado, 1987-present; JILA Chair 1993-4; Sloan Fellow 1987-88; Guggenheim Fellowship, 1990-91; APS Fellow; E. O. Lawrence Prize in Physics (DOE), 1993; Davisson Germer Award, 1994 (APS); Einstein Medal for Laser Science (Soc. for Opt. and Quant. Elec.), 1995; member of the National Academy of Sciences, 1995; Richtmyer Memorial Lecture Award (AAPT), 1996; member Optical Society of America, American Physical Society, and American Assoc. of Physics Teachers. LSTG Steering Committee, 1989-90; LSTG Nominating Committee, 1990; organized Telluride Workshop on Laser Trapping and Cooling, 1990; BESAC Subcommittee on Physics (DOE),1989-90 ; NSF Review Panel for AMO physics program, 1991; NRC Review Panel for Air Force HEDM Program, 1991-95; Selection Panel for Lawrence Prize in Physics, 1991; Broida Prize Selection Committee, 1992; LSTG Executive Steering Committee, 1993-95; Co-Chair, International Quantum Electronic Conference, 1994; Co-Chair, 14th International Conference on Atomic Physics, 1994; DAMOP Program Committee, 1994-95; Davisson Germer Prize Committee, 1995-; Joint Council on Quantum Electronics 1996-. *RESEARCH INTERESTS:* High-resolution laser spectroscopy, parity nonconservation in atoms, laser cooling and trapping of neutral atoms, and Bose-Einstein Condensation.

Candidates for Secretary-Treasurer:

The secretary-treasurer maintains all the records of the division including executive committee meeting agenda and minutes, and has responsibility for all funds at the disposal of the division. The secretary-treasurer advises the officers and membership of deadlines, organizes elections, prepares newsletters, and serves as the liaison with the APS. The term is three years beginning in May, 1996.

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. Chair, Will Allis Prize Committee, 1995. Treasurer, Soaring Club of Houston, 1987-present. *RESEARCH INTERESTS:* Atoms in high-lying Rydberg states and their application to studies of 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; magnetic properties of thin epitaxial films.

SCHULTZ, DAVID R. BA, Physics, Washington University (St. Louis) 1983; Lecturer, McDonnell Planetarium, 1979-1983; Member, Sigma Pi Sigma; Outstanding Graduate Fellow, Sandia National Laboratory-Livermore, 1988; Ph.D., Physics, University of Missouri-Rolla, 1989; Postdoctoral Fellow, University of Missouri-Rolla, 1989-91; US DOE Fusion Energy Postdoctoral Fellow, Oak Ridge National Laboratory, 1991-92; Atomic Theory Group Leader, 1995-present, and Director, Controlled Fusion Atomic Data Center, 1992-present, Physics Division, Oak Ridge National Laboratory; Secretary, Theoretical Atomic, Molecular, and Optical Community (TAMOC) of DAMOP, 1994-present; Editorial Board Member, Atomic Data and Nuclear Data Tables, 1993-present, International Bulletin on Atomic and Molecular Data for Fusion 1992-present; Advisory Group Member, Atomic and Molecular Data Unit, International Atomic Energy Agency, 1991-present. *RESEARCH INTERESTS:* Theoretical study of the atomic few-body problem; ion-atom collisions, analysis of the ejected electron spectrum (ionization) and charge transfer; use of high performance computational facilities; quasi-classical methods and direct lattice solution of the time-dependent Schrödinger equation.

Candidates for Divisional Councillor:
The Divsional Councillor represents DAMOP on the APS Council, which is the governing body of the American Physical Society. The APS Council sets policy and has the ultimate responsibility for the actions of the Society. The term is four years, beginning January 1, 1997.

HELLER, ERIC J. B.S. Chemistry and Mathematics, University of Minnesota, 1968; Ph.D. Chemical Physics, Harvard University, 1973; Postdoctoral Research, James Franck Institute, University of Chicago, 1973-1974, Assistant Prof., UCLA 1975-1979; Assoc. Prof. UCLA 1979-1980, Prof. UCLA 1981-1982; Visiting Scientist, LANL, 1981-1982, Staff Scientist, LANL, 1982-1984; Professor, University of Washington, 1984-1993; Professor, Harvard University, 1993-present; Director, Institute for Theoretical Atomic and Molecular Physics (ITAMP)1993-present; Editorial Board, Chemical Physics; Alfred P. Sloan Fellow, 1976; Camille and Henry Dreyfus Teacher-Scholar, 1977; Member, Committee on Atomic, Molecular, and Optical Physics (CAMOS) 1985-1987; Fellow, American Physical Society, 1987; Member, Division of Atomic Molecular and Optical Physics (DAMOP); Alexander von Humboldt Senior Fellow, 1984; John Simon Guggenheim Fellowship, 1992; American Academy of Arts and Sciences Fellow, 1993; Member, Advisory Board, Santa Barbara Institute for Theoretical Physics 1994-97; Member, International Academy of Quantum Molecular Science, 1995. *RESEARCH INTERESTS:* Quantum and semiclassical methods applied to atoms and molecules; electronic, infrared, and Raman spectroscopy and correlation functions; chaos and quantum mechanics; semiclassical approaches to chaos; theory of STM images of surface state electron-atom and defect scattering.

MORRISON, MICHAEL A. B.S. Rice University, 1971; M.A. Rice University, 1974; Ph.D. Rice University, 1977; NSF Postdoctoral Fellow, Los Alamos National Laboratory, 1976-77; Consultant, Los Alamos National Laboratory; 1977–present; Assistant Professor, University of Oklahoma, 1977-1981; Associate Processor, 1981–1986, Professor, 1986–1991; Professor of Physics and General Education and Adjunct Professor of English, 1991–present; David Ross Boyd Professor, 1993–present; Visiting Scientist, Joint Institute for Laboratory Astrophysics, 1986; Visiting Fellow, Joint Institute for Laboratory Astrophysics, 1991–1992; Faculty Administrative Fellow (Office of the Provost), University of Oklahoma, 1988–1989; Visiting Research Fellow, Australian National University, 1979, 1982, 1984, 1989, 1996; Fulbright Fellow, Australian National University, 1996; Editorial Board of the Australian Journal of Physics, 1983–1995; Sigma Xi Research Award, 1982; University of Oklahoma Associate's Distinguished Lectureship, 1984 and 1987; University of Oklahoma Regent's Award for Excellence in Teaching, 1984; Fred Jones Foundation Master Teaching Award, 1989; Fellow, American Physical Society, 1987. Member, Division of Atomic, Molecular, and Optical Physics (DAMOP). AUTHOR: Quantum States of Atoms, Molecules, and Solids (with Neal Lane and Thomas L. Estle, Prentice Hall, 1977), Understanding Quantum Physics, (Prentice-Hall, 1990); The Joy of Quantum Physics (Prentice-Hall, forthcoming). *RESEARCH INTERESTS:* electron-molecule scattering, orientation and alignment phenomena in near-resonant energy transfer collisions involving Rydberg, atoms, scattering of spin polarized electrons from atoms; multi-step laser excitation of atoms; science education; the role of science in contemporary culture (literature and film).

***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 1996 DAMOP Meeting.

CHUPP, TIMOTHY E. A.B. (With Honors) in Physics, Princeton University, 1977; M.Sc. in Physics, University of Washington, 1978; Ph.D. in Physics, University of Washington, 1983. Research Assistant, Max Planck Institute for Astrophysics Garching, Germany, 1972-1973; Instructor and Assistant Professor of Physics, Princeton University, 1983-85; Assistant, Associate Professor of Physics, Harvard University, 1985-1991; Associate Professor of Physics, University of Michigan, 1991-1994; Professor of Physics, 1994-present; Associate Chair for Graduate Studies 1994-present. Guest Investigator, Los Alamos National Laboratory 1991-1994; Visiting Scientist, Stanford Linear Accelerator Center 1991-1992; Visiting Scholar, Institute for Nuclear Theory, Seattle 1992-1993. Presidential Young Investigator Award, 1987; Alfred P. Sloan Research Fellow; I.I. Rabi Prize of the American Physical Society, 1993; Fellow of the American Physical Society. Harvard University Faculty of Arts and Sciences Council 1989-1991; Harvard College Committee on Undergraduate Education 1989-1991; NIST Precision Measurement Grants Outside Review Committee 1991-1994; Ann Arbor Public Schools Science Department Community Advisory Committee 1992-present; South East Michigan Science Fair Judge 1993; American Physical Society 1995 Rabi Prize Selection Committee; European Community Human Capital Mobility Conference on Neutron Techniques Organizing Committee 1994. *RESEARCH INTERESTS:* Development of precision measurement, optical pumping, and nuclear polarization techniques and applications to both fundamental and applied problems; investigations of the foundations of physics such as the linearity of quantum mechanics and invariance under local Lorentz transformations; measurements of the manifestations of elementary particle interactions in low energy and atomic systems such as atomic electric dipole moments; properties of the neutron accessed with polarization including neutron structure and correlations in polarized neutron beta-decay; applications of optically pumped masers as magnetometers and atomic clocks; exploitation of long coherence times in spin polarized systems; and noble gas enhancement of bio/medical magnetic resonance imaging and spectroscopy especially for neurological studies of functional imaging of cerebral blood flow.

GAY, TIMOTHY J. B.S.(Physics), California Institute of Technology, 1975; Ph.D.(Physics), University of Chicago, 1980; Research Associate and Lecturer, Yale University, 1980-83. Research Assistant Professor, 1983; Assistant Professor, 1984-89; Associate Professor, 1989-92; Professor, 1992-93; University of Missouri-Rolla. Professor, 1993-present, University of Nebraska. Fellow, American Physical Society, 1994. Faculty Excellence Award, University of Missouri-Rolla,1987-92. Outstanding Teacher Award, University of Missouri-Rolla, 1987,1988,1990,1991. Co-Chairman, Organizing Committee, Conference on Two-Center Effects in Ion-Atom Collisions (Lincoln, Nebraska 1994). Member, Local Organizing Committee, Eleventh International Symposium on Ion-Atom Collisions (Manhattan, Kansas 1989). *RESEARCH INTERESTS:* Collisions of polarized electrons with chiral molecules and state-selected atoms. Optical manipulation and state selection of metastable atomic beams. High-accuracy electron polarimetry, particularly for nuclear physics applications. Optical pumping of helium discharges for production of polarized electrons. Ion-atom collisions; coherence and correlation.

HILL, WENDELL T. III. B.A., University of California, Irvine 1974; Ph.D. Stanford University, 1980. NRC Postdoctoral Fellow, NIST 1980-1982; Assistant Research Scientist, University of Maryland, 1982-1986; Assistant Professor, University of Maryland, 1986-1990; Associate Professor, 1990-. Visiting Scholar Instituto Venezalano de Investigaciones, Venezuela, 1983; Visiting Professor, Université de Paris, Orsay 1989; Visiting Fellow, JILA 1992-1993. Presidential Young Investigator, 1985-1990. Chair, OSA Optical Physics Technical Group, 1994-1995; QELS Laser Spectroscopy Subcommittee, 1995. Vice Chair, Committee on Atomic, Molecular and Optical Sciences, 1996. Member, Executive Committee of APS Division of Laser Science, 1994-1997; Committee on Atomic, Molecular and Optical Sciences, 1993-1996; APS Committee on Minorities, 1994-1996; OSA program committee, 1994-1996; QELS program committee, 1989, 1995; PYI Executive Committee on Undergraduate Education, 1992-1995; NIH Advisory Committee for the Science Enrichment Program for junior high/middle school students, 1989-1991; numerous NSF program and proposal review panels. Organizer, Symposium on High Field Laser-Matter Physics: Molecules, OSA Annual Meeting, 1994; Symposium on Photoelectron-Photoion imaging, 1996 OSA Annual Meeting, Symposium on Small Molecules in Intense Laser Fields, APS Spring Meeting, 1989. *RESEARCH INTERESTS:* High intensity laser interaction with atoms and molecules, high precision measurements, time-domain measurements of atomic and molecular dynamics, competitive decay processes in small molecules, cold atom processes.

LESTER, MARSHA I. B.A. (Chemistry), Douglass College, Rutgers University, 1976; Ph.D. (Chemistry), Columbia University, 1981; NSF Postdoctoral Fellow, Bell Laboratories, 1981-82; Assistant Professor, 1982-88, Associate Professor, 1988-92, Professor, 1992 - present, Department of Chemistry, University of Pennsylvania;

Visiting Professor of Chemistry, Massachusetts Institute of Technology, 1995-96; Science Scholar at the Mary Ingraham Bunting Institute of Radcliffe College, 1995-96. Awards: Camille and Henry Dreyfus Young Faculty Award, 1982; Camille and Henry Dreyfus Teacher-Scholar, 1986; Alfred P. Sloan Research Fellow, 1987; NSF Career Advancement Award, 1988; Fellow, American Physical Society, 1993; Broida Prize, International Symposium on Free Radicals, 1995. APS Activities: Division of Chemical Physics (DCP), Executive Committee, 1989-91; Steering Committee for Laser Science Topical Group (LSTG), 1989-92; Interdisciplinary Laser Science Conference, sponsored by the Laser Science Topical Group (LSTG), Program Vice-Chair, 1993; Program Chair, 1994; Conference Vice-Chair, 1995; Conference Chair, 1996. Other Activities: NSF Advisory Committee for Physics, 1988-91; NRC Board of Chemical Sciences and Technology, 1992-95; Gordon Research Conference on Molecular Energy Transfer, Conference Co-Chair, 1997. *RESEARCH INTERESTS:* Spectroscopy and photofragmentation dynamics of weakly-bound complexes; energy disposal and lifetimes in photodissociation processes; intermolecular potential energy surfaces; optical-optical double resonance and stimulated emission pumping spectroscopies.

NRC FAMOS Report to be Distributed to DAMOP Membership

The DAMOP Executive Committee has elected to reprint and distribute the FAMOS Report, ***"Atomic, Molecular and Optical Science: An Investment in the Future"*** to all DAMOP members. It should be in your hands before the next DAMOP meeting. The report is the culmination of two years of serious effort on the part of the AMO science community to highlight its accomplishments and to obtain a better picture of how AMO science fits into the changing societal context for research. The booklet is written and illustrated so as to make sense to a broad cross section of the public that supports our science. A striking feature of AMO science is the close connection between its most fundamental aspects and its applications. Hopefully the report will be helpful to DAMOP members in getting the word out about the excitement and the utility of AMO science research. Our legislators need to hear this message. The future vitality of our field may well depend on how effectively we carry it!

IN MEMORY

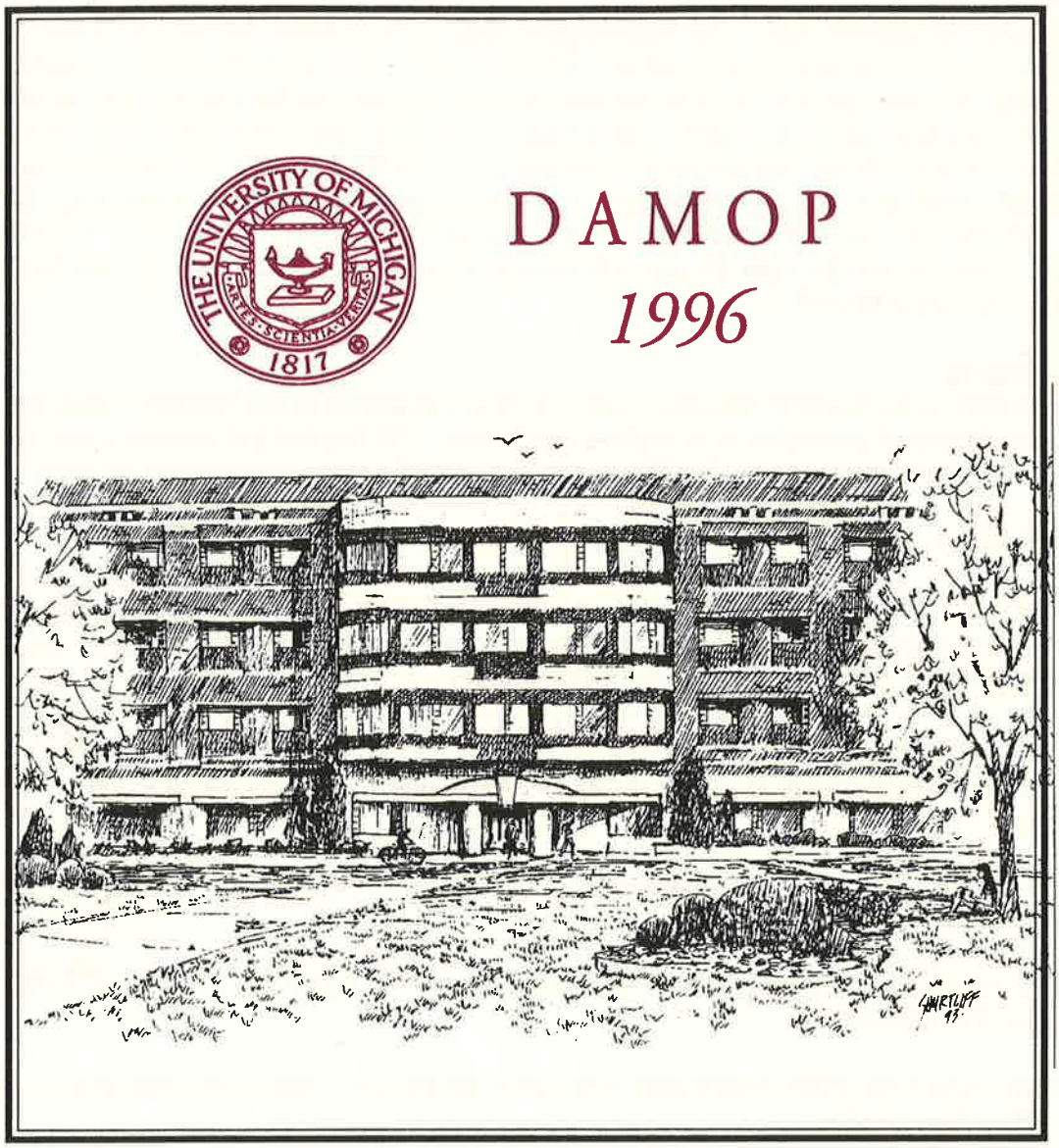
John P. Giese (1959-1995), associate professor of physics at Kansas State University, died on July 23, 1995 of respiratory failure due to cystic fibrosis. John earned his B.S. degree from KSU in 1982 (Magna cum Laude, honors program) and his Ph.D. from KSU in 1986 . He spent one year as a visiting research scientist at the University of Aarhus and one year as an ORAU postdoc at Oak Ridge National Laboratory before returning to join the KSU faculty in 1989 as an assistant professor. He was promoted to associate professor in 1993. John's early research at KSU was on electron capture from inner shells by protons and by highly charged ions from atomic hydrogen. At Aarhus he and Erik Horsdal Pederson worked on angular distributions of hydrogen atoms formed from fast-proton bombardment of He, reporting a peak in the ratio of double to single target ionization which helped to stimulate recent attempts to factor simple collisions into underlying two-body Coulomb mechanisms. He continued along similar lines at Oak Ridge with investigations of two electron excitations in He by highly charged ions.

He developed an interest in ion-ion collisions and established a close collaboration with Erhard Salzborn and Frank Melchert at the Justus-Liebig University at Giessen. Building on this collaboration, he instigated at KSU a project to study collisions of highly charged ions with highly charged ions. He was responsible for the building up of the first facility in the US for the study of such collisions. This facility was just reaching completion at the time of his death.

In addition to his many research contributions in ion-atom collisions, he took great interest in undergraduate teaching, helping to develop new curricula and new courses in physics and giving much of his time to talk to and encourage young physics students. He spent his entire adult life with the full awareness that he had less time to spend on earth than most do, and he was always in a hurry to get on with it so as to miss as little as possible.

. . . Lew Cocke

Don't forget to vote!



Artist Bill Shurtliff's rendition of the new Physics Research Laboratory at the University of Michigan which was opened October 12, 1995.

27th Annual DAMOP Meeting
May 15-18, 1996
Ann Arbor, Michigan

The 27th Annual Meeting of the Division of the Atomic, Molecular and Optical Physics (DAMOP) of the American Physical Society will be held on the campus of the University of Michigan in Ann Arbor, Michigan, on Wednesday through Saturday, 15-18 May, 1996. A welcoming reception will be held on the evening of Tuesday, May 14th. The local organizing committee consists of representatives from the Physics and Chemistry Departments, as well as the Center for Ultrafast Optical Science. The meeting this year has been extended to 4 days to accommodate an increasing number of oral and contributed papers, as well as a special symposium on Saturday morning on Bose-Einstein Condensation. Lodging is available in hotels, university guest houses and dormitories, all conveniently located near the meeting rooms. Some financial support will be available for student travel and expenses. Registration, lodging and travel information and forms are enclosed.

Accommodations

University Lodging

Mary Markley Residence Hall, 1503 Washington Heights, Ann Arbor, MI, 48109-2015; Reservations made through UM Conference & Seminars, 313-764-5297; Fax: 313-764-1557. Located 6 block from the Meeting. Please use the "Residence Hall Lodging" portion on the conference registration form. Each room has two twin beds, desks with lamps, and chairs. Separate men's and women's bathrooms are located on each floor. Housekeeping service includes fresh towels daily and a change of bed linens every other day. No air-conditioning. Rates (including continental breakfast): $37.75/night single; $25.60/night per half double (you must arrange for your own roommate). Advance payment is required. If you cancel by April 30, you will receive a full refund. After April 30, the first day's cost is deducted from your refund.

Other Lodging

Accommodations for DAMOP Meeting participants are available at the facilities listed below. Please contact the facility of your choice to make a reservation. To receive the special hotel rates quoted below, indicate you are with the DAMOP Meeting and make your reservations by April 1.

CAMPUS AREA (walking distance to the meeting):

Bell Tower Hotel, 300 S. Thayer Street, Ann Arbor, MI 48104, 1-800-999-8693 or 313-769-3010 (1/2 block from the Meeting). A small European-style inn elegantly furnished in English decor. Free valet parking is available. Rates: $91 single; $103 double.

Campus Inn, 615 East Huron, Ann Arbor, MI 48104, 313-769-2200 or 1-800-666-8693, FAX 313-769-6222; Three blocks from the Meeting. A full-service quality hotel; free parking. Rates: $68 single; $80 double.

OTHER HOTELS (Located 2 miles south of campus, shuttle bus service to the Meeting will be provided).

Courtyard (Marriott), 3205 Boardwalk, Ann Arbor, MI 48108, 1-800-321-2211 or 313-995-5900. Rates: $73 single; $83 double.

Fairfield Inn (Marriott), 3285 Boardwalk, Ann Arbor, MI 48108, 1-800-228-2800 or 313-995-5200. Rates: $50 single/double.

Hampton Inn, 925 Victors Way, Ann Arbor, MI 48108, 1-800-426-7866 or 313-665-5000; FAX 313-665-8452. Rates: $60 single/double.

Sheraton Inn, 300 Boardwalk, Ann Arbor, MI 48108, 1-800-848-2770 or 313-996-0600; FAX 313-996-8136. Rates: $73 single/double.

Ann Arbor

Ann Arbor is home to the main campus of the University of Michigan. The city has many excellent cafes, restaurants and bookstores within a short walk from campus. The weather in mid-May is often ideal.