

DIVISION OF ATOMIC, MOLECULAR AND OPTICAL PHYSICS NEWSLETTER

A Division of The American Physical Society

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INSIDE...

- [CHAIR'S LETTER](#)
- [WELCOME TO WILLIAMSBURG!](#)
- [REGISTER YOUR EMAIL ADDRESS NOW!](#)
- [CHANGING OF THE GUARD](#)
- [FELLOWSHIP](#)
- [WILLIAMSBURG SYMPOSIA](#)
- [CONGRATULATIONS TO NEW APS PRIZE WINNERS](#)
- [MEETING BULLETIN BOARD](#)
- [DAMOP CANDIDATE BIOGRAPHIES](#)
- [2002 BALLOT](#)

CHAIR'S LETTER

Dear DAMOP friends,

It has been a pleasure to serve as chair for the past year. Let me begin by thanking Tim Gay for all the work he does for DAMOP, and also thanking all those on the executive committee, and all the other advisors who have guided my path this year. Roy Champion deserves special thanks for all the work of organizing our annual meeting in Williamsburg. In this letter I mention some of the new initiatives that were developed over the past year, and some issues that will come before the DAMOP Executive Committee in our meeting in Williamsburg.

1. TUTORIAL AND FUNDING

We have enhanced our annual meeting by adding a one-day tutorial for students before the conference. This will occur at Old Dominion University in Norfolk (a one-hour drive from Williamsburg), and it is organized by Mark Havey. This year's speakers and titles are

Margaret Murnane (University of Colorado)

How to Make Atoms Sing and Molecules Dance: using shaped light pulses to observe and control nature.

Christopher Monroe (University of Michigan)

Quantum Information for Dummies.

William D. Phillips (NIST)

Bose-Einstein Condensation: teaching a gazillion atoms to sing in perfect harmony and dance in perfect step.

It should be quite a musical program. For information about the tutorial, go to the web page, www.damop2002.org and click on "Student Tutorial". (Postdocs will be accepted as space permits.)

In response to the creation of this new tutorial, both NSF and NIST have increased student travel support for the tutorial and DAMOP meeting, and we thank them for this support. Perhaps also because of the tutorial, the number of requests for student funding increased from about 60 in the past to over 100 this year. (This means that total support is up but support per student will be down from previous years. We hope to improve that in the future.)

2. RELATIONSHIP WITH MARCH AND APRIL APS MEETINGS

It is important that we communicate not only with each other - we also need to convey the excitement of AMO physics to other branches of the physics community. The March and April meetings of the APS are the available mechanism for communication across divisions.

The March meeting is dominated by condensed matter and materials and polymer physics, chemical physics, biological physics, and fluid dynamics. DAMOP cosponsored four invited sessions and three contributed sessions, dealing with quantum fluids, Bose-Einstein condensation, optical lattices, and quantum computation. Deborah Jin received the Maria Goeppert-Mayer award, and Carl Wieman and Wolfgang Ketterle spoke at a special APS-sponsored a special session for our Nobel Prize winners. I am told that all of the DAMOP sessions were well attended.

Charles Clark has been leading an effort to increase our participation and visibility at this meeting, and our executive committee will be examining various options. How do we best communicate with each other, and also get our stories out to the general physics community? Should we sponsor more sessions at the March meeting? Should we sometimes have our DAMOP annual meeting jointly with or immediately following the March Meeting? Bring your opinion to the DAMOP Business Meeting in Williamsburg.

The April meeting is dominated by the nuclear, particle, plasma, and astrophysics communities. DAMOP participation in the April meeting has been declining for a decade. This year we cosponsored a symposium on Antimatter, and we had one contributed session entitled Quantum Mechanics and Optics. Discussions continue about

our future participation in this meeting.

3. PUBLICITY

I begin with two quotes:

Former President Clinton

"... [W]e have not done a good enough job of helping all Americans understand why the enormous investments we have made in science and technology are so important....It is our responsibility to help open the world of science to our citizens _ to help them understand the great questions that science is seeking to answer, to help them see how those answers will directly affect their lives."

Former Speaker of the House Newt Gingrich

"The fate of our country may well depend on whether or not scientists recognize that they have real responsibilities as citizens....No one else has their understanding or credibility...America needs a science lobby fueled by scientists....Educate your fellow countrymen about the exciting world that awaits us, and we will help you find the resources to achieve these great breakthroughs."

Many of us believe that we in the scientific community have indeed not done well at communicating the excitement of our work to the general public. Therefore, this year for the second time, the DAMOP Public Affairs Committee is asking each symposium organizer and speaker in invited sessions at the upcoming DAMOP meeting to contribute a News Release about their work and their session. Each speaker should send to the organizer and/or chair of their session approximately a one-page "press release" summarizing their work, WRITTEN IN LAY LANGUAGE. The goal is to reach the broadest possible audience. Highest priority goes to news that can communicate with the general public through the science sections of our national newspapers and magazines. Others are also welcome to contribute - often we do not hear about exciting discoveries until the meeting.

These press releases will be placed on a web site and publicized through the APS and AIP press offices. This year Jim McGuire has agreed to act as collector and editor of these press releases. This time we will also seek some objective measure of the success of our efforts.

4. APS PRIZES

An APS task force has proposed that all APS prizes be increased to \$10,000, and those that cannot be funded at this level be called "awards" instead of "prizes". Below I quote from a letter addressed from the APS council to the various Divisional Executive Committees.

"[We are] writing to seek your input...APS currently has a special Task Force on Prizes and Awards. In its preliminary report to the Council, one of its recommendations was to require that, by the end of 2006, all APS prizes (not awards) have stipends of at least \$10,000. If sufficient funding were not available at that time, APS would have the option of giving the prize every two years (for what are now annual prizes), or renaming the prize as an award....

"We hope that you agree that it is a good idea to keep the stipends for APS prizes at a level commensurate with the honor. We believe that such action is essential to maintaining the prestige associated with APS prizes. Unfortunately, many of the prizes

now carry stipends well below \$10,000. Would you and your colleagues be willing to help us raise funds, if needed, for the prize(s) in your unit's area of expertise?

Alternatively, what is your reaction to APS giving a particular prize less frequently or changing the prize to an award?"

Most of the prizes of interest to DAMOP members are not at this proposed level. (Allis Prize, Gaseous Electronics-\$5,000 biennial; Broida Prize, Spectroscopy-\$5,000 biennial; Pyle Prize, Molecular Spectroscopy-\$3,000 annual; Rabi Prize young investigators in AMO Physics-\$7,500 biennial; Rahman Prize, Computational Physics-\$5,000, annual; Research in an Undergraduate Institution-\$5,000 annual.) Everyone will agree that these prizes should be increased, and that someone else should find the money. A \$10,000 annual prize needs an endowment of about \$250,000. Who will help raise funds?

5. ELECTRONIC BALLOTING AND OTHER COMMUNICATIONS

In the divisional elections of the officers and the executive committee, some divisions allow balloting by email. Should we? Presently about 1/5 of the DAMOP membership votes in elections. Preliminary evidence is that when email is substituted for snailmail balloting, participation goes down slightly (this question needs further study). The security and integrity of ballots is also a question.

On a related topic, our Secretary-Treasurer, Tim Gay, receives many requests to send notices out to the DAMOP membership: meeting announcements, political and funding initiatives, postdoc ads, and other things. Generally he resists distribution of announcements, unless he sees a good reason why the DAMOP email list should be used. He will appreciate any encouragement you can give him to keep unsolicited announcements out of your email.

In conclusion, it has been a pleasure to serve, and now I happily look forward to my future service as "former chair".

John Delos
College of William and Mary

WELCOME TO WILLIAMSBURG!

The 33rd DAMOP meeting will take place on the campus of the College of William and Mary in Williamsburg, Virginia, Tuesday evening, May 28, 2002 through Saturday noon, June 1, 2002. It is being held in conjunction with the Division of Laser Science (DLS) and the Topical Group on Precision Measurements and Fundamental Constants (TGPMFC); see the list of Symposia in this newsletter. A DAMOP tutorial session for students will be held on Tuesday, May 28. The event will be hosted by Old Dominion University in nearby Norfolk, VA. For more information, please refer to <http://www.physics.odu.edu/symposium>. The main meeting website is <http://www.damop2002.org>.

On Tuesday evening at 1830, there will be a Welcoming Reception in the Chesapeake Room, University Center. Running quasi-concurrently with the reception will be the annual TAMOC meeting, in the Tidewater B Room, also in the University Center. The DAMOP Business meeting will be held at 1530, Friday afternoon in the Commonwealth Auditorium, University Center.

REGISTER YOUR EMAIL ADDRESS NOW!

If you are part of the last 4% of the DAMOP membership for whom we do not have an email address, please help us out by sending it to APS at coa@aps.org. We are sending out more and more announcements solely by email, and will start voting by email in the near future

CHANGING OF THE GUARD

Thanks are in order for the people who are leaving various DAMOP positions. Dan Larson is finishing his last year in the Chair Line, and John Delos will take his place as Most Recent Past Chair. Jim Cohen and Linda Young will be rotating off the Executive Committee after three years of service, and Hal Metcalf will be ending his four-year term as Divisional Counselor.

The Chairs of the various committees this past year were: Nominating Committee - Phil Gould; Fellowship Committee - Barry Dunning; Program Committee - Chris Greene; Thesis Prize Committee - Deborah Watson; Davisson-Germer Prize Committee - John Thomas; Rabi Prize Committee - Lou DiMauro; Broida Prize Committee - Bill Stwalley, and the Allis Prize Committee - Tom Rescigno. Messrs. DiMauro and Stwalley will continue next year in their respective positions. The hard work of Thad Walker, Don Madison, and Mark Havey, all of the Education Committee, should be noted as well. They were responsible for obtaining generous support from the NSF and NIST for student travel to the Williamsburg meeting. Finally, Tim Gay, with the greatest reluctance, will relinquish his post as Secretary/Treasurer.

FELLOWSHIP

Donald Beck, Michigan Technological University

For his outstanding contributions to the development and application of many body and relativistic formalism to atoms and negative ions.

Peter Beiersdorfer, Lawrence Livermore National Laboratory

For his many contributions to precision x-ray spectroscopy of highly-charged systems and application of this spectroscopy to plasma and astrophysical problems.

Ali Belkacem, Lawrence Berkeley Laboratory

For contributions made in the study of charge changing mechanisms involving high energy, relativistic, highly charged ions leading to the discovery of new atomic processes involving the negative energy continuum.

Donald Bethune, IBM Almaden Research Center

For contributing to our understanding of fullerenes, including spectroscopy that confirmed the fullerene structure of carbon clusters, and for synthesizing metallofullerenes and single wall carbon nanotubes.

John Doyle, Harvard University

In recognition of contributions to the field of atomic, molecular and optical physics and in low-energy nuclear/particle physics, particularly buffer gas cooling and magnetic trapping of atoms, molecules and neutrons.

David Gidley, University of Michigan

For his pioneering contributions to the physics of positronium including precision measurement of the singlet and triplet state lifetimes and for his development of applications and techniques using positrons for the study of materials.

(Nominated by the Fundamental Constants Topical Group)

Henry Kapteyn, University of Colorado

For his imaginative techniques for the generation of ultrashort pulses of optical and x-ray radiation that have had a widespread impact on laser science.

Paul Kwiat, Los Alamos National Laboratory

For the development of quantum optical techniques to investigate the foundations of quantum physics and their use in studies of quantum information concepts.

Margaret Murnane, University of Colorado

For her major contributions to the optical physics and technology of the generation of ultrashort pulses of optical and x-ray radiation.

Francis Robicheaux, Jr., Auburn University

For his theoretical contributions to a better understanding of quantal dynamics in atoms and molecules subject to time-dependent probes: including photoionization, photorecombination, pulsed field ionization, and electron-impact ionization.

Tamar Seideman, National Research Council

For creative work in theoretical molecular physics, including coherent control of internal and external molecular degrees of freedom of molecules, control of surface reactions using an Scanning Tunneling Microscope, and time-resolved photoelectron spectroscopy.

Peter Teubner, The Flinders University of South Australia

For pioneering and outstanding contributions to experiments in electron scattering from atoms and molecules including the development of coincidence techniques and benchmark experiments on alkali targets.

Ronald Walsworth, Jr., Harvard-Smithsonian Center for Astrophysics

For the development and use of atomic clocks in tests of fundamental symmetries; and multidisciplinary applications of related technology.

(Nominated by the Fundamental Constants Topical Group)

Carl Williams, N.I.S.T.

For definitive calculations of atomic collision processes, which have improved our understanding of photoassociation spectroscopy, dynamics of Bose-Einstein condensates, and effects of radiation retardation on atomic collisions.

Paul Zitzewitz, University of Michigan-Dearborn

For his many contributions to physics and science education for high school and middle school teachers and students, and for his many contributions to the Forum on Education.

(Nominated by the Forum on Education)

WILLIAMSBURG SYMPOSIA

(Unless otherwise noted, the Symposia are those of DAMOP.)

Intermezzo--Joint DPF/DAMOP Session. *Kostelecky, Walsworth, Johnson, Flambaum*

Plenary Nobel Prize Session. *Cornell, Ketterle*

Ultra-Short Optical Pulses: Frontiers and Applications. *Reider, Diddams, Sokolov, Kapteyn*

Advances in AMO Theory. *Kokoouline, Watson, Vardi, Cirac*

Quantum Information. *Wineland, Polzik, Kwiat, Girvin*

Nobel and APS Prize Session. *Wieman, Garscadden*

Electron and Photon Impact. *Hanstorp, Lindle, Morgan, Pratt*

Undergraduate Research. *Doret, Purdy, Saylor, Dunn, Rigazio, Baysinger*

Chaos. *Davidson, Mouchet, Habib, Sridhar*

Thesis Prize Session. *Sokolov, DeMarco, Kielpinski, Vrinceanu, Inouye*

Rydberg Atoms and Ultracold Plasmas. *Dunning, Conover, Robicheaux, Mazevet*

Quantum Optics. *Aspect, Bloch, Kasevich, Prentiss*

Davisson-Germer Prize Symposium and Nanoscale and Biological AMO Physics. *Gabrielse, Polanyi, Huels, Halas, Duncan*

Heavy Particle Collisions. *Stolterfoht, Havener, Gorczyca, Benis*

Symposium of the Topical Group on Precision Measurements and Fundamental Constants: Optical Comb Based Precision Frequency Metrology. *Jones, Oates, Willmann, Gabrielse*

Symposium of the Division of Laser Science: Novel Laser Methods in Molecular Spectroscopy. *Johnson, Hepburn, Lineberger, Lester*

Quantum Degenerate Gases. *Moss, Hulet, Modugno, Feder*

Late-Breaking Developments Session. *Batelaan, Thomas, Chapman, Berrah*

CONGRATULATIONS TO NEW APS PRIZE WINNERS

The following people have been awarded APS prizes this year for distinctly DAMOP-flavored work:

Allis Prize: Alan Garscadden, Air Force Research Laboratory

Citation: In recognition of his distinguished career in gaseous electronics, marked by a sustained creativity in linking fundamental processes to the macroscopic properties of gas discharges and plasmas, and for his dedicated role as an advocate for the field of gaseous electronics.

LeRoy Apker Award for a Non-Ph.d. Institution: Robert Wagner, Illinois State University

Citation: For work on Intense Laser Physics Theory.

Awardee's Statement: My current research focuses on numerical simulations of cycloatoms. Cycloatoms can be created with a hydrogen atom in a linearly polarized laser and a static magnetic field orientated parallel to the magnetic field component of the laser beam. When the magnetic field is chosen such that the cyclotron frequency of the electron is close to the laser frequency, a resonance condition results that quickly accelerates the electron to a velocity close to the speed of light. When this occurs, the probability density function for the electron becomes "smeared out" into a ring-shaped distribution which rotates around the nucleus with the laser period.

Davisson-Germer Prize: Gerald Gabrielse, Harvard University

Citation: For pioneering work in trapping, cooling, and precision measurements of the properties of matter and antimatter in ion traps.

Maria Goeppert-Mayer Award: Deborah S. Jin, N.I.S.T.

Citation: For her innovative realization and exploration of a novel quantum system, the degenerate Fermi atomic gas, and the scientific promise portended by her pioneering work.

Prize for Research in an Undergraduate Institute: James Cederberg, St. Olaf College

Citation: For his sustained and productive research in molecular beam spectroscopy and an extraordinary record of spurring interest in careers in physics through student participation in challenging experiments.

MEETING BULLETIN BOARD

RECOIL-INDUCED EFFECTS AND BEC

Palazzo Feltrinelli, Gargnano, Garda Lake, Italy

25-27 June 2002

E -mail: Stefano.Olivares@mi.infn.it

GORDON RESEARCH CONFERENCE: PLASMA PROCESSING SCIENCE

Tilton School, Tilton, New Hampshire, USA

July 21-26, 2002

Gordon Research Conferences on the World Wide Web: <http://www.grc.uri.edu>

Deadline for submission of abstracts: May 15, 2002

INTERNATIONAL CONFERENCE ON ELECTRON AND PHOTON IMPACT
IONISATION AND RELATED TOPICS

Metz, France

18-20 July, 2002

<http://pmc.sciences.univ-metz.fr/congres/meeting2002.html>

RESONANCES AND REFLECTIONS: PROFILES OF UGO FANO'S PHYSICS AND
ITS INFLUENCE

July 24-26, 2002

I T A M P - Cambridge, MA 02138

This conference is a satellite meeting of the International Conference on Atomic Physics
(ICAP 2002, <http://cua.mit.edu/ICAP2002/>) which will be held at MIT July 28 - August 2,
2002.

2002 GORDON CONFERENCE ON MULTIPHOTON PROCESSES

June 30-July 5, 2002

Tilton School, Plymouth, NH

Deadline for poster submissions is May 31, 2002.

Conference website: <http://www.chemistry.bnl.gov/grc>

Gordon Research Conference website: <http://www.grc.uri.edu/>

34th CONFERENCE of EUROPEAN GROUP for ATOMIC SPECTROSCOPY
(EGAS 34)

Sofia, 9-12 July 2002

<http://egas34.issp.bas.bg/req>
<http://www.issp.bas.bg/egas34/>

E-mail: egas34@issp.bas.bg

THE 2ND CONFERENCE ON ELEMENTARY PROCESSES IN ATOMIC SYSTEMS
(CEPAS)

Gdansk, Poland, 2--6 September 2002

Email: cepas@mif.pg.gda.pl

Home-page: <http://www.mif.pg.gda.pl/cepas2002/>

Related Conference:

The International Symposium on Low Energy Electron-Molecule Interactions organized by Akademia Podlaska (Siedlce) will be held from August 29 to September 2, 2002 in Chlewiska/Siedlce, Poland. For more information visit <http://leemi.ap.siedlce.pl>

ICAP 2002 and AMO SUMMER SCHOOL

Website: <http://cua.mit.edu/icap2002/>

ICAP 2002: Eighteenth International Conference on Atomic Physics
July 28 to August 2, 2002
Cambridge, Massachusetts, USA

AMO SUMMER SCHOOL
July 21 to July 26, 2002
Cambridge, Massachusetts, USA

DAMOP CANDIDATE BIOGRAPHIES

Ballots are due 13 May 2002! **DON'T FORGET TO SIGN YOUR BALLOT!**
Members who do not live in North America may email their vote to tgay1@unl.edu before 20 May.

FOR VICE CHAIR (will become Chair-Elect in 2003 and Chair in 2004)

EBERLY, J.H.

B.S. (Evan Pugh Medalist), Penn State Univ., 1957; Ph.D., Stanford Univ., 1962. NRC Postdoctoral Fellow and staff member, USNOL, 1962-67. Visiting Research Associate, Univ. of Rochester (Emil Wolf); Assistant Professor, Associate Professor, Professor, Univ. of Rochester Department of Physics and Astronomy, 1967-97, Professor of Optics (adj.) 1979-present, Andrew Carnegie Professor of Physics, Univ. of Rochester, 1997-present. Visiting Distinguished Professor of Physics, Univ. of Arkansas, spring 1982; SERC Fellow, Great Britain (Imperial College), summer 1983; Humboldt Senior Awardee, Max-Planck-Institut f?r Quantenoptik, Garching, Germany, 1985; Auckland Foundation Visting Lecturer, Auckland Univ., New Zealand, August 1987; University Visiting Professor of Physics, Univ. of Queensland, Australia, Spring Term 1987; La Caixa Lecturer in Physics, Autonomous Univ. of Barcelona, Spain, spring 1988; Visiting Professor, Univ. Catholique de Louvain, Belgium, spring 1994; Visiting Professor, Universit?t Ulm, Ulm, Germany, summer 1995; Visiting Professor, Univ. of Texas at Austin, spring 1998. NAS Exchange Lectureship, Eastern Europe (Poland), 1970; Senior Fellow, JILA (NIST and Univ. Colorado) 1978-79; Gilford Lecturer, Oberlin College

1982; Humboldt Preis, A. von Humboldt Foundation of West Germany, 1984; Smoluchowski Medal, Physical Society of Poland, 1987; Charles Townes Award, IEEE-OSA, 1994; Distinguished Alumnus Award, Penn State College of Science, 1998; Robert Georgen Award for Distinguished Achievement and Artistry in Undergraduate Education, Univ. of Rochester 2000; Foreign Member, Academy of Science of Poland 2000. SELECTED PROFESSIONAL ACTIVITIES: Senior Editor, Multiphoton Bibliographies, 1976-83; Assoc. Editor, Phys. Rev. A 1979-81; Associate Editor, Optics Letters, 1980-83; Assoc. Editor, Phys. Rev. A 1982-84; Topical Editor, JOSA B, 1984-89; Founding Editor, Optics Express, 1996 - 2001; co-Editor of proceedings of ICOMP 1 (John Wiley), and Coherence and Quantum Optics VI, VII, VIII (Plenum). Member DEAP Program Comm. 1974-75; Co-Organizer Aspen Workshop on Quantum Optics and Intense Fields 1975; Program Co-Chair, Eastern Theor. Phys. Conf. 1976; Co-initiator 1977 of ICOMP series of conferences - International Conferences on Multiphoton Processes; member DEAP Nominating Comm. 1977; member OSA Finance Comm. 1977-83; Co-Organizer, NSF Symposium on Computer Films for Research, JILA 1978; member APS Davison-Germer Prize Comm. 1978; member APS Isaacson Prize Comm. 1979; member Organizing Comm., Europhysics Study Conf. on Multiphoton Processes, Benodet 1979; member and Chair, IEEE-OSA Charles Townes Award Comm. 1980-2; member, DEAP Comm. on Fellows 1981-82; member, CAMS Editorial Board 1982; member, Advisory Board, Max-Planck-Inst. f?r Quantenoptik, Garching 1983-89; Symposium Chair, DEAP Ann. Mtg. 1984; member, Advisory Comm, IKONO 6, Moscow 1985; Vice President and member Board of Directors, Phi Beta Kappa, Iota Chapter (NY) 1986-91; member, Program Comm., DAMOP 1986; member-at-large Board of Directors OSA 1987-89; initiated 1989 the SILAP series of Conferences (Super-Intense Laser-Atom Physics); member, Visiting Committee, Lehigh Univ. Department of Physics, 1992-94; member, NSF Physics Division, Triennial Committee of Visitors, 1994; Chair, APS Division of Laser Science, 1995-96; Chair of Review Committee, AG Nichtklassische Strahlung der MPG, Berlin, 1995; member, Physics Advisory Committee, Lawrence Livermore National Laboratory, 1995 -1997; member, Program Comm. on 80th birthday of Nobel Laureate A.M. Prokhorov, Moscow, 1996; member APS Rabi Prize Comm. 1997; member, Advisory Board, Institute of Theoretical Physics (Santa Barbara) 2000-2002; member and Vice Chair, CAMOS of NRC-NAS 2001-02; Chair, Board of Editors OSA 2002-2004; Director, NATO Advanced Study Institute on Quantum Information, Turkey, summer 2002; co-Director ITP (Santa Barbara) Workshop on Quantum Optics, summer 2002. RESEARCH INTERESTS: Theoretical physics of atoms in strong radiation fields, including non-perturbative treatment of resonance dynamics, quantum control, relaxation and coherence, cavity QED, multiphoton processes, short-pulse propagation, solitons, dark state theory and quantum entanglement in continuous Hilbert spaces.

McGUIRE, JAMES H.

BS Rensselaer 1964; PhD Northeastern, 1969; Assistant Professor Texas A&M 1969 - 72; Assistant - full professor Kansas State 1972 - 91; Murchison-Mallory Professor of Physics, Tulane University 1991 - present; APS Fellow; SELECTED PROFESSIONAL ACTIVITIES: DAMOP Secretary-Treasurer 1990-93; DAMOP Executive Committee 1990 -93, DAMOP Program Committee 1987 - 93, 2001; DAMOP Publicity Committee 1999 - 2003; DAMOP Undergraduate Research Award Committee 1997, 1999; Secretary TAMOC 1988 - 90; Vice Chair, Chair-Elect, Chair Few Body Topical Group of APS 1999 - 2001; Member DLS, DCP, FIAP, GFC. International Secretary of ICPEAC 1993 - 2001; Organizing Committee, International Seminar on Ion-Atom Collisions 1989 - 2001, Chair 1989, 1993; International Advisory Board HCI 1987, and International Workshop on Photoionization 1994; Co-Chair, Conference on Raman Emission by X-rays, 1995; Local Committee, International Committee on Theoretical Chemical

Physics 1996; William A. Stamey Teaching Award 1990; US Coordinator, Monbusho International Research Programs (Japan) 1994 - 6; Commencement speaker, Tulane University, 1995; Nominating Committee Forum on Physics and Society of APS 1998 - 9; Editor, Encyclopedia of Physics 1992 - 6; Distinguished Member Award, National Society of Collegiate Scholars 2000; Committee on Graduate Education of AAPT 1993 - 96; Committee on Constitution and Bylaws of the American Physical Society 1999 - 2002, Chair 2001; Nominating Committee of the Forum on Physics and Society 1998 - 99; Panel on the Future of AMO Physics, DOE 1997; NSF Advisory Panel on Atomic Physics 1997; Organizing Committee, Workshop on Atomic Physics at High Brilliance Synchrotron Radiation Light Sources 1993; Outstanding Alumni Award of Northeastern U. for Education 1995; Alexander von Humboldt Award 1997; Advisory Board of ITAMP at Harvard 1999 - 2002. RESEARCH INTERESTS: Dynamics of multi-electron systems interacting with light and matter; multiple electron transitions in moderately strong and strong fields; dynamics of electron correlation in atomic and molecular systems; quantum time entanglement; quantum information; transfer of electrons and atoms in collisions with ions, positrons and molecules; science education and outreach.

FOR SECRETARY/TREASURER (three year term)

COCKE, C. LEWIS

B.A.Haverford College 1962; Ph.D. Caltech 1967; NSF Postdoctoral Fellow 1967-68; Research Associate, 1968-69, Univ. Strasbourg; Assistant Professor, Kansas State University, 1969-74; Associate Prof. 74; Professor 79; University Distinguished Professor, 97-present. Visiting professor/scientist, Univ. Aarhus, 1975-76, LBNL, 1998, Univ. Stockholm 1999; Alexander von Humboldt Award Winner, Univ. Frankfurt, 1991-92. Fellow, American Physical Society; SELECTED PROFESSIONAL ACTIVITIES: DEAP/DAMOP committees: Program 82-84, 93-95; Publications 81-83, 96, chair 97-99; Executive 84-85; Fellowship 89, chair 90. NRC committees: Physics Survey Committee, Panel on AMO Physics, 1983-84; Panel on Scientific Opportunities for the Use of Cooled Heavy Ion Storage Rings, 1986-88 ; Conference organizing committees: Co-Chair of Eleventh ISIAC, 1989; Workshop on High Energy Ion-Atom Collision Processes, Debrecen, 1990; ICPEAC General committee, 1993-97; Highly Charged Ion Conference, 1992, 1996-2000; RESEARCH INTERESTS : Collisions involving multiply charged ions interacting with electrons, atoms, surfaces and clusters. Interaction of intense laser pulses with ion beams, atoms and molecules. Interaction of synchrotron radiation with atoms and molecules.

COLLINS, LEE A.

B.A.(physics/mathematics): Rice University,1970; Ph.D.(physics): Rice University,1975. Postdoctoral Fellow, JILA, 1975-1977; Postdoctoral Fellow, Los Alamos National Laboratory, 1977-1979; Visiting Scientist, Daresbury Laboratory, U.K., 1979; Staff Member, Los Alamos National Laboratory, 1979-present, Laboratory Fellow, 2000. Fellow: American Physical Society, 1995. SELECTED PROFESSIONAL ACTIVITIES: Specialist Editor, Computer Physics Communications, 1983-1991; Editorial Board, Physical Review A, 1992-1994; Associate Editor, Physical Review A, 1994-present. Executive Committee, APS Forum for Physics and Society, 1999-present; Editorial Board, Physics and Society, 2000-present, Nominating Committee, APS Few Body Systems Topical Group, 1998; Executive Committee, APS Few Body Systems Topical Group, 2001-present; Education Committee, DAMOP, 1999; Local and Program Committees, Santa Fe DAMOP meeting, 1998; Local Committee, ICPEAC, 2001. Director, Los Alamos Summer School, 1992-present; Adjunct Professor, University of New Mexico, 1992-present. RESEARCH INTERESTS: Theoretical AMO physics: electron atom and molecule scattering, atom-atom collisions, Patoms in intense fields,

quantum control of molecular systems, ultracold phenomena (Bose-Einstein condensates and plasmas), computational methods. Other areas: warm dense matter and materials in extreme environments.

FOR DIVISIONAL COUNCILLOR (four year term)

KIRBY, KATE P.

A.B. (Chemistry and Physics) Harvard/Radcliffe, 1967; Ph.D. (Chemical Physics) University of Chicago, 1972. Postdoctoral Fellow, Harvard College Observatory, 1972-73. Research Physicist, Smithsonian Astrophysical Observatory, 1973-. Lecturer, Harvard University Department of Astronomy, 1973-86. Associate Director, Harvard-Smithsonian Center for Astrophysics, heading the Atomic and Molecular Physics Division, 1988-2001. Deputy Director, Institute for Theoretical Atomic and Molecular Physics (ITAMP), 1989-1998; Acting Director, ITAMP 1998-2000; Director, ITAMP 2001-. Fellow of the American Physical Society; Fellow of the AAAS.

SELECTED PROFESSIONAL ACTIVITIES: Vice-Chair, Chair-Elect and Chair of DAMOP, 1995-1998; member, Editorial Board of Atomic, Molecular and Optical Physics Handbook, 1994-; member, Panel on AMO Physics at DOE, Sept. 1997; co-organizer of Congressional Reception highlighting AMO Physics applications (for House of Representative members and staff) Washington DC, April 1997; member, Oak Ridge National Lab. Physics Advisory Committee, 1999-2000; member, NRC Committee on Atomic, Molecular and Optical Science (CAMOS), 1998-; member, NSF Panel for site review of the Institute for Theoretical Physics, UC-Santa Barbara, Jan. 2000; Vice-Chair and Chair, International Conference on Photonic, Electronic and Atomic Collisions (ICPEAC), 1999-2003; member, APS Committee on Meetings, 2000-2003; member, AMO Theory Panel at NSF Physics Division, Feb. 2001; Chair, NAS/NRC Committee to Evaluate the Future Opportunities for Laboratory Astrophysics, 2001-. **RESEARCH INTERESTS:** Theoretical studies of atomic and molecular structure, spectroscopy and collisions: molecular excited states and transition probabilities; molecular photodissociation, photoionization, autoionization, and radiative association; charge transfer; line-broadening; applications of atomic and molecular physics to astrophysics and atmospheric physics.

PHANEUF, RONALD H.

B.S. 1969, M.S. 1970, Ph.D. 1973, University of Windsor. Postdoctoral Research Associate, JILA, 1973-75. Research Associate, 1975-81; Research Staff Member, 1981-85; Senior Research Staff Member, 1985-92; Program Manager, Atomic Physics and Plasma Diagnostics for Fusion, 1983-92; Director, Controlled Fusion Atomic Data Center, 1985-92, Oak Ridge National Laboratory. JILA Visiting Scientist, 1988-89. Professor of Physics, University of Nevada, Reno, 1992-present. APS Fellow, 1986.

SELECTED PROFESSIONAL ACTIVITIES: DAMOP Publications Committee, 1985-86; Executive Committee, 1988-89; Program Committee, 1989-91; Secretary-Treasurer, 1993-96; Nominating Committee, 1996 (chair), 1997; Fellowship Committee, 1999-2000; Local Committee for 1993 DAMOP Meeting. NRC Committee on Atomic, Molecular and Optical Science (CAMOS), 1990-93; AMO Sciences Assessment Panel, Committee on Physical Sciences, Mathematics and Applications, 1992-93; FAMOS Survey of AMO Scientists, 1992-93. Screening Panel for DOE E.O. Lawrence Award, 1994. Editorial Board, Journal of Physical and Chemical Reference Data, 1986-88. International Conference on the Physics of Highly Charged Ions, Program Committee, 1990-92. APS Topical Conference on Atomic Processes in Plasmas, Program Committee, 1987, 1993, 1995, 1999. ICPEAC General Committee, 1983-87, 1997 - present. Advisory Group on Atomic and Molecular Data for Fusion, International Atomic Energy Agency, 1983-1992. Director, Nevada DOE/EPSCoR Program, 1998-2000.

Member, American Association of Physics Teachers, 1993-. **RESEARCH INTERESTS:** Interactions of multiply charged ions with electrons, photons, atoms and molecules; photon-ion interactions using synchrotron radiation; charge-changing and excitation processes; atomic processes in plasmas; fusion energy.

FOR THE EXECUTIVE COMMITTEE

BECKER, KURT H.

Dipl. Phys. (1978) and Dr. rer. nat. (1981), Universität des Saarlandes, Saarbrücken, Germany. DFG Postdoctoral Fellow and Research Associate, University of Windsor, Canada, 1982-84. Assistant Professor, Lehigh University, 1984-88. Associate Professor and Professor, City College of CUNY, 1988-96. Professor, Stevens Institute of Technology, 1997-present; Head, Department of Physics and Engineering Physics, Stevens Institute of Technology, 2000-present. Dr. Eduard-Martin Price from the Universität des Saarlandes, 1983. Fellow of the American Physical Society, 1992. Thomas Alva Edison Patent Award from the Research and Development Council of New Jersey, 2001. **SELECTED PROFESSIONAL ACTIVITIES:** Co-Chair, Organizing Committee of the 5th International Symposium on Polarization and Correlation in Electronic and Atomic Collisions, 1989. Co-Chair, Organizing Committee of the XXII. International Conference on Phenomena in Ionized Gases (ICPIG), 1995. Member, GEC Executive Committee, 1991-93. Member, ICPEAC General Committee, 1993-97. Vice-Chair and Chair of the APS Will Allis Prize Committee, 1995-97. Member, APS-DAMOP Program Committee, 1996-97. Member, Scientific Advisory Board, Institute for Low-Temperature Plasma Physics, Greifswald, Germany, 1997-present. Member, ICPIG International Scientific Committee, 1999-present. **RESEARCH INTERESTS:** Electron-driven processes in the gas phase; experimental determination of collision cross sections, optical and electron spectroscopy, mass spectrometry; calculation of ionization cross sections, development of scaling laws and additivity rules; collisions in low-temperature plasmas, optical, mass spectrometric and probe diagnostics of discharge plasmas; generation, maintenance, and characterization of high-pressure and atmospheric-pressure discharge plasmas and their technological applications.

DOYLE, JOHN.

B.S. (Electrical Engineering) MIT, 1985; PhD. (Condensed Matter and Atomic Physics) MIT, 1991; AT&T Bell Laboratories, Research Assistant, 1988; Postdoctoral Associate, MIT, 1991-1993; Assistant Professor of Physics, Harvard University, 1993-1997; John L. Loeb Associate Professor of the Natural Sciences and Associate Professor of Physics, Harvard University, 1997-1999; Professor of Physics, Harvard University, 1999-present. Co-director Harvard-MIT Center for Ultracold Atoms, 2000-present. **RESEARCH INTERESTS:** Trapping of ultracold neutrons, atoms, and molecules. Most recently, the development of large Bose condensates, trapping and cooling of fermionic chromium, measurement of the neutron beta-decay lifetime, trapping and cooling of NH.

ROLSTON, STEVEN L.

B.A.(Physics) Wesleyan University, 1980; Ph.D (Physics), State University of New York at Stony Brook, Stony Brook, NY, 1986; Research Associate, University of Washington, Seattle, WA, 1986-87; Research Associate, Harvard University, Cambridge, MA, 1987-88; Staff Physicist, National Institute of Standards and Technology, Gaithersburg, MD, 1988-present; R&D 100 Award, 1991, U.S. Dept. of Commerce Silver Medal, 1996; APS Fellow, 1997; **SELECTED PROFESSIONAL ACTIVITIES:** Chair, DAMOP Publications Committee, 1997; Program Committee, QELS 99; Chair, ILS Program sub-committee, 2000, Vice-chair, 1999 and chair, 2001, Atomic Physics Gordon

Conference, Program Committee, DAMOP, 2002, Editorial Board, Physical Review A (2002-2005) RESEARCH INTERESTS: Laser cooling and trapping; atom optics; Bose Einstein condensation; optical lattices; quantum information and computation; ultracold collisions; ultracold plasmas and Rydberg gases.

SCHULTZ, DAVID R.

B.A. (Physics), Washington University, 1983; Ph.D. (Physics), University of Missouri, Rolla, 1989; Postdoctoral Research Assistant, University of Missouri, Rolla, 1989-1991; US DOE Fusion Energy Postdoctoral Fellow, Oak Ridge National Laboratory (ORNL), 1991-1992; Staff Member, Physics Division, ORNL, 1992-present; Director, ORNL Controlled Fusion Atomic Data Center, 1992-present; Task Leader, Theoretical Atomic Physics, ORNL, 1995-present; Group Leader, Atomic Physics, ORNL, 2000-present; Adjunct Professor of Physics, University of Tennessee, Knoxville, 1998-present; Fellow of the American Physical Society, 2001; SELECTED PROFESSIONAL ACTIVITIES: Secretary, Theoretical Atomic, Molecular, Optical Community (TAMOC) of DAMOP, 1995-1998; Co-Editor, Atomic Data and Nuclear Data Tables (ADNDT), 2002-present; Editorial Board Member ADNDT, 1993-2001, Editorial Board Member International Bulletin on Atomic and Molecular Data for Fusion, 1993-present; Editorial Board Member, Atomic and Plasma-Material Interaction Data for Fusion, 1998-present; Advisory Group Member, International Atomic Energy Agency, 1991-present; Program Committee, APS Topical Conference on Atomic Processes in Plasmas (APiP), 1999-present; Local Chair, 13th APS Topical Conference on APiP, 2002; Treasurer, International Conference on Atomic and Molecular Data and Their Applications (ICAMDATA), 1997-present; Local Chair, 3rd ICAMDATA, 2002; Local Committee, XXII ICPEAC, 2001; Chair, Working Group 3: Collision Processes, International Astronomical Union Commission 14: Atomic and Molecular Data, 1996-present. RESEARCH INTERESTS: electron- and ion-atom collisions; plasma physics in fusion energy and astrophysics; quasi-classical methods; high performance computing and lattice solution of the time-dependent Schrodinger equation; new interests in optical computing, ultrafast optics, electronic properties of nanoscale systems, and cold electron--molecular-ion collisions

**OFFICIAL 2002 BALLOT FOR DAMOP VICE-CHAIR,
SECRETARY/TREASURER, DIVISIONAL COUNCILOR, AND
EXECUTIVE COMMITTEE**

Vice Chair (vote for one)

Joe Eberly _____

Jim McGuire _____

Secretary/Treasurer (vote for one)

Lew Cocke _____

Lee Collins _____

Divisional Councilor (vote for one)

Kate Kirby _____

Ron Phaneuf _____

Executive Committee (vote for two)

Kurt Becker _____

John Doyle _____

Steve Rolston _____

Dave Schultz _____

Please fold where indicated on reverse side, tape or place in an envelope, and mail before **13 May 2002** to the address indicated. **DO NOT FORGET TO SIGN YOUR BALLOT!**

Members who do not live in North America may email their vote to tgay1@unl.edu before 20 May.

(Address on back)

Timothy J. Gay
Behlen Laboratory of Physics
University of Nebraska
Lincoln, NE 68588-0111

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