



July 1996 Newsletter

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Chair's Message July 1996

This column is the last that I will write as Chair of the Division of Laser Science, and I want to leave you with a simple message. The Division of Laser Science, indeed the entire American

Physical Society, is an organization of volunteers who do a remarkable job in "advancing and diffusing the knowledge of physics"--the constitutionally mandated objective of the Society. It has been my privilege to have served with many groups and on many committees of the Society during the past 15 years, but the group that has impressed me most is this one--the remarkable volunteers who created and nurtured the Laser Science Topical Group.

The Laser Science Topical Group became the Division of Laser Science during my tenure as Chair, and I am pleased that I was able to play a small role in this transition. To list all those who worked to make this passage a reality would take the entire issue of this Newsletter; many were listed in earlier Newsletters. However, here, I would like to thank one person who gave extraordinary service to the Division during the past three years. That person is John Miller, who will retire as Secretary-Treasurer of the Division after three years of service at the ILS-XII meeting in Rochester. My thanks are sincere for two reasons. First, I too, served as the Secretary-Treasurer of a Society Division, and I know how demanding the job is. It is most definitely not an honorary position. Second, shortly after I became Chair of the Division, I took on a new job in the Department of Energy's Office of Basic Energy Sciences. Perhaps not surprisingly, this new job quickly became a voracious time consumer. While my attention was often elsewhere, John made certain that the Division continued to run smoothly and efficiently. And he did this with such grace and ease that few noticed he was handling virtually all of Division activities by himself. In addition, John has fostered innovative change during his tenure with the Division, and he leaves it a stronger, more vigorous, more forward-looking organization. So, John, on behalf of all of us who benefited from your reign during the past three years, thank you very much.

In my candidate's statement written several years ago I wrote that "the Laser Science Topical Group is an outstanding example of a group that advances fundamental research in a rapidly evolving discipline, that brings together diverse constituencies within the APS, and that links science and technology. As such, it is a model for all APS subunits." I still believe these words today, and I urge you to become involved with this Division. Now, more than ever, the profession of physics needs the help and support of all of its members.

With that, I would like to introduce to you two Division members who will play a major role in its activities during the coming years. First, James Wicksted follows Roger Becker as editor of the Newsletter; Roger has done a wonderful job and his will be a tough act to follow. Second, Dan Grischkowsky becomes our first Division Councillor. Dan is well known to many of us and is one of the founders of the Division. Congratulations, Dan, on becoming our first Councillor, and welcome back to the Executive Committee.

And thank you all for your continued participation in and support of the activities of the Division. I'll see you in Rochester.

Pat Dehmer

ELECTION RESULTS

Dan Grischkowsky has been elected as the first APS Division of Laser Science Councilor.

Congratulations Dan!!

ILS-XII

The 12th Interdisciplinary Laser Science Meeting (ILS-XII), the annual meeting of the Division of Laser Science, will be held in Rochester, New York, October 20-25, 1996. The 1996 ILS Meeting will be held in conjunction with the Annual Meeting of the Optical Society of America and the Conference on Optics and Imaging in the Information Age. Members of the 1996 ILS Conference Committee are: Marsha Lester, Conference Chair; Jagdeep Shah, Conference Vice-Chair; John Weiner, Program Chair; and Richard Slusher, Program Vice-Chair.

The ILS Meeting consists of symposia in five basic areas: Lasers in Physics (Paul Julienne, Chair), Lasers in Chemistry (Giacinto Scoles, Chair), Physics of Laser Sources (Howard Milchberg, Chair), Lasers in Nonlinear Ultrafast Phenomena (Andrew Weiner, Chair), and Laser Applications (Peter Delfyett, Chair). Many of these symposia are organized jointly with OSA. Symposia in *Lasers in Physics* will cover a variety of research topics in Near Field Scanning Optical Microscopy, Bose-Einstein Condensation, Atom Optics, and Wave Packets and Coherence. Symposia in *Lasers in Chemistry* will feature Frequency Modulation Spectroscopy, Cavity Ring-Down Spectroscopy, Surface Photochemistry, and Molecular Spectroscopy at Very Low Temperature. Symposia in *Physics of Laser Sources* will present recent advances in Table Top Soft X-Ray Lasers, Fiber Lasers, and Ultrashort-Pulse High-Energy Lasers. Symposia in *Lasers in Nonlinear Ultrafast Phenomena* will highlight Optical Soliton Phenomena, Reaching and Measuring Attosecond Pulses, Coherent Nonlinear Spectroscopy of Disordered Systems and Nanostructures, and Ultrashort Pulse Generation Using Parametric Processes. Symposia in *Laser Applications* will emphasize Lasers in Telecommunications, Alternative Approaches in Optical Digital Storage, Lasers in Medicine, and Laser-Aided Manufacturing and Materials Processing.

The ILS-XII plenary talk will be given by William Happer of Princeton University. The title of the talk is "Illuminating Lungs with Lasers and Spins: The Past from Fraunhofer to a Medical Application". The 1996 Schawlow Prize will be awarded to Dr. Theodor W. Hänsch of the Max-Planck-Institute for Quantum Optics. The Schawlow lecture by Dr. Hänsch will be given during the ILS-XII Meeting.

Once again, this year's ILS program will feature four Critical Review Talks. Each talk will review the recent progress in an exciting area of research, discuss new insights and understanding, critically examine the outstanding issues, and provide the speaker's vision of, or speculation on, the direction of the field in the future. These four critical review talks are: "The Nature of the Bose-Einstein Condensation and its Realization in Dilute, Trapped Gases" by Eric Cornell (Joint Institute of Laboratory Astrophysics), "Photonic Bandgaps: A Critical Review" by Eli Yablonovitch (University of California, Los Angeles), "Semiconductor Cavity QED" by Yoshihisa Yamamoto (Stanford University), and "Wave Packets from Chemical Reaction to Biological Motion" by Ahmed Zewail (California Institute of Technology).

The 1996 ILS symposia and invited speakers are listed in the Call for Papers for the OSA Annual Meeting and the ILS-XII, which has been sent to all DLS members. Additional copies of the Call for Papers can be obtained from the OSA Meetings Department:

Lorenda Wieder, Meetings Manager
Optical Society of America
2010 Massachusetts Avenue, NW
Washington, DC 20036-1023
Phone: (202) 223-0920
FAX: (202) 416-6100
e-mail: lwiede@osa.org

STUDENT TRAVEL GRANTS

Awards of up to \$700

The DLS is pleased to continue its program to support student travel to DLS-sponsored meetings. A limited number of grants for travel and living expenses, up to \$700, are available to graduate students who are DLS members and who are authors or co-authors on an oral or poster paper at the ILS-XII meeting. To make these funds as widely available as possible, some priority will be given to requests for a lower level of support and to distribution of these grants to students of different institutions.

Applicants should submit a letter stating their estimated need for travel funds, including commitment of institutional support, if any, attached to a copy of the submitted abstract on which they are first author, and a letter of nomination from a member of DLS. Please list daytime phone number, fax number, e-mail address, and social security number. **Applicants are required to fax or e-mail their acceptance letter or attach it to the application upon receiving the official notice from OSA. Only one award will be given to a research group.** If it is likely that the paper cannot be given without financial support, the student should indicate whether the paper would have to be withdrawn if this request for funds cannot be met. Checks will be issued at the meeting. Hotel accommodations will be covered at up to half the conference rate for a double room.

The nominator should certify that the applicant is a full-time graduate student, and, in the case of foreign students, that they have a student visa valid through the meeting dates. The applicants will be evaluated by the selection committee chaired by John C. Miller. Applications should be sent to Dr. Miller at the address given on the first page of this Newsletter. **The deadline for submitting applications is August 9, 1996.**

1996 ARTHUR L. SCHAWLOW PRIZE IN LASER SCIENCE

to

Theodor W. Hdnsch

Max-Planck-Institute for Quantum Optics

Theodor W. Hänsch is the winner of the 1996 Arthur L. Schawlow prize "for his many outstanding contributions to laser spectroscopy including his extraordinary measurement of the spectrum of atomic hydrogen". Dr. Hänsch is the Executive Director of the Max-Planck-Institute for Quantum Optics in Garching, Germany, and professor of Physics at the University of Munich. He is also lecturing at the University of Florence, and he is Consulting Professor at the Physics Department of Stanford University.

Dr. Hänsch received his Masters Degree (Dipl. Phys., 1966) and Doctorate (Dr. Rer. Nat., 1969) from the University of Heidelberg. In 1970, he came to the United States where he joined the Physics Department of Stanford University as an Associate Professor in 1972. From 1975 until he returned to his native Germany in 1986, he served as a full professor at Stanford. His research interests include testing basic physics laws with techniques of precise laser spectroscopy and the cooling and manipulation of atomic matter with laser light.

Dr. Hänsch is a Fellow of the American Physical Society and the Optical Society of America, as well as a member of the American Academy of Arts and Sciences, and the Bavarian Academy of Sciences. He has been awarded the Herbert P. Brodia Prize of the American Physical Society (1983), the Cyrus B. Comstock Prize of the National Academy of Science (1983), the William F. Meggers Award of the Optical Society of America (1985), the Michelson Medal of the Franklin Institute (1986), the Italgas Prize for Research and Innovation (1987), the Gottfried Wilhelm Leibniz Prize of the German Science Foundation (1988), and the King Faisal International Prize for Science (1989).

NOTICE:

There are several changes being planned for future newsletters. First, a new section called "**IN FOCUS**" will be added and will consist of a news item (concerning recent advances in laser research) or viewpoint(s) from one or more DLS members. Second, because of our recent division status, it may be time to change the logo on the first page of the newsletter. This being the case, I would like to ask all the members to utilize their artistic skills and send me their designs for a new logo (or send a statement if you prefer to maintain the present one). Your comments and suggestions are always welcome. Please send your letters, ideas, art work, etc., to Jim Wicksted, DLS Newsletter Editor, Center for Laser Research, 413 NRC, Oklahoma State University, Stillwater, OK 74078-3038; (405) 744-5807; FAX (405) 744-6406; e-mail: jpw519@vms.ucc.okstate.edu

DISTINGUISHED TRAVELING LECTURER PROGRAM IN LASER SCIENCE

The **Division of Laser Science (DLS)** of the American Physical Society announces the continuance of its sponsorship of a lecture program in **Laser Science**. Lecturers will visit selected academic institutions for two days, during which time they will give a public lecture open to the entire academic community and meet informally with student and faculty. They

may also give guest lectures in classes related to Laser Science. The purpose of the program is to bring distinguished scientists to predominantly undergraduate colleges and universities in order to convey the excitement of Laser Science to undergraduate students.

Guidelines: DLS will be responsible for the travel expenses and honorarium of the lecturer. The host institution will be responsible for the local expenses of the lecturer and for advertising the public lecture. Recommendations to the DLS chair for host institutions will be made by the Selection Committee after consulting with the lecturers. **Priority will be given to those institutions that are not located in major metropolitan centers and do not have extensive resources for similar programs.**

Lecturers for the 1996-1997 Academic Year:

- Geraldine Richmond, Univ. of Oregon, Dept. of Chemistry. Surface Non-Linear Optics.
- Jagdeep Shah, AT&T Bell Laboratories. Quantum Optics.
- Stephen Leone, JILA, Univ. of Colorado. Chemical Physics
- Philip Bucksbaum, Dept. of Physics, Univ. of Michigan. High-Field Laser Physics
- Bill Phillips, NIST. Atom Cooling and Trapping

Application Procedures: A DLS member at the prospective host institution should request a particular lecturer (and alternate) and submit a list of preferred dates. The member should also provide a brief description of the host institution, its undergraduate students, and an estimate of the number of students likely to benefit. To ensure consideration for speakers for the Spring of 1997, please submit an application by June 21. Applications for the Fall of 1997 should be submitted by January 17, 1997.

The Distinguished Traveling Lecturer Selection Committee members are Michael Raymer (Chair), Neal Abraham, and Paul Kleiber.

Send applications for the both the Spring 1997 and Fall 1997 programs to the current DLS secretary-treasurer at the address shown on the first page of the newsletter.

Keep up on the Division of Laser Science on the DLS home page at
<http://aps.org/division.html>

CALENDAR

Quantum Optics, 8-9 Jul, 1996, Queensland, Australia. (For more information, contact: Prof. P. Drummond, Physics Dept., University of Queensland, Australia, 61 7 3365 3404.) Satellite Meeting to IQEC '96. Technical Meeting.

Summer Topical Meetings, 7-12 Jul, 1996, Maui, Hawaii. Technical Meetings, Tabletop Exhibit. Sponsored by OSA/IEEE-LEOS and OSA/IEEE-LEOS/SPIE.

Optical Amplifiers and Their Applications, Topical Meeting, 10-13 Jul, 1996, Monterey, CA. Sponsored by OSA/IEEE-LEOS. Technical Meeting, Tabletop Exhibit.

20th International Quantum Electronics Conference (IQEC), 14-19 Jul, Sydney, Australia. Sponsored by ACQE. (For more information contact: Prof. J. Piper, School of Physics, Macquane Univ., NSW 2109, 02 805 8977.) OSA is a cooperating society. Technical Meeting.

International Conference on Applications of Photonic Technology (ICAPT'96), 29 Jul-1 Aug, Montreal, Canada. Sponsored by IEEE. Contact:

e-mail icapt96@utcc.utoronto.ca. OSA is a cooperating society. Technical Meeting.

CLEO/EUROPE, 8-13 Sep, 1996, Hamburg, Germany. Co-located with the European Quantum Electronics Conference (EQEC). Sponsored by EPS/IEEE-LEOS/OSA, in cooperation with EOS. Contact: fax IOP at +44 (0) 171 823 1051; for technical information: fax IEEE-LEOS at (908) 562-8434; for exhibits: fax OSA at 202-416-6100.

OSA '96 80th Anniversary Annual Meeting,

20-25 Oct, 1996, Rochester, NY. Co-located with

ILS-XII and Optics and Imaging in the Information Age. Technical Meeting, Tutorials, Engineering Tutorials, Engineering "How To" Program, Short Courses, and Technical Exhibit (Technical Exhibit sponsored by: OSA/Photonics Spectra).

Interdisciplinary Laser Science Conference

(**ILS-XII**), 20-25 Oct, 1996, Rochester, NY. Co-located with the OSA Annual Meeting and Optics and Imaging in the Information Age. (For further information, contact OSA). Sponsored by APS-DLS, in cooperation with OSA. Technical Meeting.

Conference on Lasers and Electro-Optics

(**CLEO '97**), 18-23 May, 1997, Baltimore, MD. Co-located with the Quantum Electronics and Laser Science Conference (QELS '97). Abstract Deadline: November 27, 1996. Sponsored by: IEEE-LEOS/OSA in cooperation with EPS-QEO/JQEJG. Technical Meeting, Short Courses, Technical Exhibit.

Quantum Electronics and Laser Science Conference (QELS '97), 18-23 May, 1997, Baltimore, MD. Co-located with the Conference on Lasers and Electro-Optics (CLEO '97). Abstract Deadline: November 27, 1996. Sponsored by APS-DLS/IEEE-LEOS/OSA. Technical Meeting.

OSA '97 Annual Meeting, 11-17 Oct, 1997, Long Beach, CA. Co-located with ILS-XIII. Technical Meeting, Tutorials, Engineering "How To" Program, Short Courses, Technical Exhibit (Technical Exhibit sponsored by: OSA/Photonics Spectra).

Interdisciplinary Laser Science Conference

(**ILS-XIII**), 11-17 Oct, 1997, Long Beach, CA. Co-located with the OSA Annual Meeting. (For further information contact OSA). Sponsored by APS-DLS, in cooperation with OSA. Technical Meeting.

ILS PROGRAM COMMITTEE

LASERS IN PHYSICS

Paul Julienne, *National Institute of Standards and Technology, Chair*

Dan Heinzen, *University of Texas*

Lori Goldner, *National Institute of Standards and Technology*

Nick Bigelow, *University of Rochester*

Steve Rolston, *National Institute of Standards and Technology*

LASERS IN CHEMISTRY

Giacinto Scoles, *Princeton University, Chair*

Marsha Lester, *University of Pennsylvania*

Alec Wodtke, *University of California, Santa Barbara*

Ian Harrison, *University of Virginia*

William C. Stwalley, *University of Connecticut*

Anne B. Myers, *University of Rochester*

PHYSICS OF LASER SOURCES

Howard Milchberg, *University of Maryland, Chair*

Jorge Rocca, *Colorado State University*

Curtis Menyuk, *University of Maryland, Baltimore County*

Henry Kapteyn, *Washington State University*

NONLINEAR OPTICS AND ULTRAFAST PHENOMENA

Andrew Weiner, *Purdue University, Chair*

Stephan Koch, *Marburg University*

Rene Beigang, *University of Kaiserslautern*

Yaaron Silberberg, *Weizman Institute of Science*

LASER APPLICATIONS

Peter Delfyett, *University of Central Florida, CREOL, Chair*

Patrick LiKamWa, *University of Central Florida, CREOL*

Thomas Mossberg, *University of Oregon*

EXECUTIVE COMMITTEE OF THE DIVISION OF LASER SCIENCE

Robert R. Alfano, *City University of New York*

Arvinda Kar, *University of Central Florida, CREOL*

Patricia M. Dehmer, *Argonne National Laboratory, Chair*

Joseph H. Eberly, *University of Rochester,*

Chair-Elect

Paul L. Houston, *Cornell University, Vice-Chair*

John C. Miller, *Oak Ridge National Laboratory,*

Secretary-Treasurer

W. Carl Lineberger, *University of Colorado, JILA,*

Past-Chair

William E. Cooke, *College of William and Mary*; John Weiner, *University of Maryland*; Wendell T. Hill, *University of Maryland*; Paul D. Kleiber, *University of Iowa*; Naomi Halas, *Rice University*; Michael Raymer, *University of Oregon*; *Members at Large.*

SUMMER GRANTS

The winners of the 1996 summer research grants, along with their faculty advisors and college/university, are respectively: Eric Gansen, Dr. G.R. Sudhakaran, *University of*

Wisconsin-La Crosse; Kristin Hogan, Dr. D.W. Pratt, University of Pittsburgh; James Rowe, Dr. J.W. Thomas, Williams College; Sandra Bonila, Dr. N. Peyghambarian; John Bloodgood, Prof. G. Watson, University of Delaware; Catherine Glasheen, Dr. F.A. Mascarelli, Swarthmore College.

Congratulations to all the winners.

CANDIDATES FOR DLS OFFICERS

Vice-Chair

Thomas F. Gallagher, Jesse W. Beams Professor of Physics, University of Virginia. Ph.D. 1971, Harvard University; B.A. 1966, Williams College. Research Interests: Collisions of Rydberg atoms, doubly excited atomic states, and the evolution of atomic states in radiation fields. Other Scientific Activities: Executive Committee, DEAP (1981-84); General Committee, ICPEAC (1985-88); Associate Editor, Optics Letters (1985-89); Fellowship Committee, DAMOP (1985-86, 1988-89); Divisional Associate Editor, Physical Review Letters (1988-91); Program Committee, DAMOP (1989-95); Chairman, DAMOP (1993-94); Chairman, ELICOLS (1993); Program Committee, IQEC (1993-94); Topical Editor, JOSA B (1993-96); Program Committee, ICAP (1993-96). Honors, Positions, and Memberships: Fellow, American Physical Society; Fellow, Optical Society of America; Davison-Germer Prize of the APS (1996).

Candidate's Statement: Laser science is an unusually broad discipline including both the basic science behind the development of new lasers as well as the application of lasers to an increasingly wide range of problems. Although the Division has excellent intellectual overlap with the Divisions of Chemical Physics and Atomic, Molecular, and Optical Physics, there has never been any overlap of the meetings. It appears useful to have periodic, perhaps every three years, joint meetings of the three divisions. Working toward this goal would be my major objective.

William D. Phillips, NIST Fellow, National Institute of Standards and Technology, Gaithersburg, MD, and Adjunct Professor of Physics, University of Maryland, College Park, Maryland. Ph.D. 1976, Massachusetts Institute of Technology; B.S. 1970, Juniata College. Research Interests: Laser cooling and electromagnetic trapping of atoms, atom optics, atomic clocks, collisions, of ultracold atoms, and photoassociative molecular spectroscopy. Professional Activities: Program Committee of the International Laser Science Conference, 1986-88; Program Committee of IQEC-87 and QELS-89; Member of the founding steering committees of the American Physical Society Laser Science Topical Group and the Topical Group on Precision Measurement and Fundamental Constants; Visiting Professor at Ecole Normale Supérieure, 1989-90; Co-Organizer of and lecturer at the 1991 Enrico Fermi Summer School on Radiative Manipulation; Chair, OSA Optical Physics Group, 1992-93; Chair, Gordon Conference on Atomic Physics 1993; Member of the Executive Committee, Laser Science Topical Group of APS (1991-93); APS representative to Joint Council on Quantum Electronics, and International Council on Quantum Electronics (1991-93); Program Committee of DAMOP 1993-95; Program Committee of OSA/ILS '94; DAMOP Publications Committee

1994-97; Editorial Board of Advances in Atomic and Molecular Physics, 1995-present ; Lecturer at Enrico Fermi Summer School on Coherence and Collective Interactions of Particles and Radiation Beams, 1995. Professional Affiliations and Awards: Fellow, American Physical Society; Fellow, Optical Society of America; Fellow, American Academy of Arts and Sciences; Silver and Gold Medals of the U.S. Department of Commerce, 1983 and 1993; Michelson Medal of the Franklin Institute, 1996; Distinguished Traveling Lecturer (APS, Division of Laser Science) 1996-98.

Candidate's statement: The DLS is in a unique position with regard to its breadth of constituency both within the APS and within the wider scientific community, and in having a regular and significant financial income. This implies for DLS a responsibility to serve the diverse interests of its membership and to use its resources wisely. A strong and truly interdisciplinary ILS is one of the major ways in which the diversity is served, and I favor its continued association with the OSA Annual Meeting along with a distinct mission in representing a broader set of research interests. The travel grants, student research grants and traveling lectureships established by the LSTG and continued by DLS are excellent uses of resources, and should continue and be more widely publicized, particularly among members of the laser science community who are not members of DLS. This could also be an important recruiting tool to insure growth and continued influence for DLS within APS.

Secretary-Treasurer

Stephen T. Pratt, Chemist, Argonne National Laboratory. Ph.D. 1982, Yale University; B.A. 1977, Bennington College. Research Interests: Single-photon and multiphoton studies of atomic and molecular photoionization dynamics, autoionization, and predissociation phenomena; Decay processes of highly excited states including unimolecular reaction dynamics, Rydberg-state collisions and reactions, and field-ionization dynamics; Dispersive and threshold photoelectron spectroscopy (ZEKE-PES); Interference effects and coherent control of chemical reactions. Other Scientific Activities: Co-Chair, DOE Workshop on Advanced Laser Technology for Chemical Measurements (1989); Local Organizing Committee, 23rd Meeting of the APS Division of Atomic, Molecular, and Optical Physics (1992); Organizer, Symposium on Coherent Control of Physics and Chemistry, 23rd DAMOP Meeting (1992); Local Organizing Committee, 49th Annual Gaseous Electronics Conference (1996). Honors, Positions, and Memberships: Argonne National Laboratory Pacesetter Award, 1987; Fellow, American Physical Society; Member, Optical Society of America; Member, American Chemical Society; Member, American Association for the Advancement of Science.

Winthrop W. Smith, Professor, Department of Physics, The University of Connecticut (Storrs). Ph.D. 1963, M.I.T.; B.A. 1958, Amherst. Research Interests: Experimental AMO Physics, XUV and laser spectroscopy, laser cooling of ions and cold ion trapping, ion-atom and atom-atom collisions, associative ionization, negative ion photodetachment, excited state lifetimes, accelerator-based spectroscopy, ion impact on surfaces. Other Scientific Activities: NAS-NRC Committee on Atomic and Molecular Science (1976-79); Chair, Gordon Conference on Atomic Physics (1977); Chair, New England Section of the APS (1979); Review Committee for Nuclear Science, NSF (1982); Consultant, Los Alamos National Laboratory (1985-90). Honors, Positions, and Memberships: Visiting Fellow, Joint Institute for Laboratory Astrophysics,

Boulder (1975-76); Visiting Scientist, Molecular Physics, SRI International and Visiting Scholar, Physics, Stanford University (1982-83); Program Officer, Atomic Theory and AMP Program, Physics, NSF (1983-84); A.V. Humboldt senior U.S. Scientist Research Award and Visiting Scientist, Physics, Max-Planck Inst. f. Quantenoptik Garching (1990-92); Guest Prof. Inst. of Physics, University of Aarhus, Denmark (1990-91); Executive Committee DAMOP (1980-83); Secretary-Treasurer, DAMOP (1987-90); Phi Beta Kappa; Sigma Xi; Fellow, American Physical Society; Member, Optical Society of America.

Executive Committee

John L. Carlsten, Professor, Department of Physics, Montana State University. Ph.D. 1974, Harvard University (physics); B.S. 1969, University of Minnesota (physics). Research Interests: Stimulated Raman scattering, Raman Solitons, quantum fluctuations, gain guiding, index guiding, Diode lasers, frequency control and locking, intensity noise. Other Scientific Activities: Organized Conference (w/J. Hall), Third International Conference on Laser Spectroscopy (1977); American Physical Society Division of Atomic, Molecular, and Optical Physics Nominating Committee (1987); Organized Symposium, Solitons in Multiphonon Processes, Annual Meeting of the Optical Society of America (1988); Conference Organizer, Optical Technology Conference, Bozeman (1993, 1994, 1995). Honors, Positions, and Memberships: Director, Optical Technology Center (OpTeC), Montana State University (1995-present); Regents Professor, Montana State University (1992-1997); Pi Sigma Alpha Mortar Board Award for Teaching, Montana State University (1987, 1988, 1992, 1994); Cox Excellence Award for Creative Scholarship and Teaching, Montana State University (1990); Outstanding Teaching Award in College of Letters and Science, Montana State University (1989); Sigma Xi Outstanding Research Scientist Award, Montana State University (1989); Wiley Award for Excellence in Research, Montana State University (1986); Phi Kappa Phi Fridley Distinguished Teaching Award, Montana State University (1986); Outstanding Performance Award, Los Alamos National Laboratory (1980); Associate Group Leader/Staff Member, Los Alamos National Laboratory (1981-1984/1979-1981); Assistant Professor/Senior Research Associate/Postdoctoral Associate, University of Colorado/JILA (1976-1979/1974-1976); member, American Physical Society; member, Optical Society of America.

Thomas W. Mossberg, Professor of Physics, University of Oregon. Ph.D. 1978, M.A. 1975, Columbia University; A.B. 1973, University of Chicago. Research Interests: Fundamental aspects of laser action involving, for example, two-photon lasers and lasing without inversion; Cavity QED effects; Dynamics and spectra of driven atoms; Coherent atom-field interactions and their applications to information storage and processing. Other Scientific Activities: Quantum Optics Program Sub-Chair QELS (1996); IQEC Program committee (1987,1992, 1994); ILS Session Organizer (1992, 1995, 1996); Spectral Holeburning Program Committee (1991); OSA Annual Meeting Symposium Organizer (1989); DOE task force on future directions in AMO physics (1990); Publicity liaison JCQE (1991); Max Born Award Committee (1994); APS-DAMOP Publications Committee (1996); Feature Editor JOSA B. Honors, Positions, Memberships: Post-doctoral Fellow, Columbia University (1978-80); Assistant Professor, Columbia University (1981); Assistant Professor, Harvard University (1981-84); Associate Professor, Harvard University (1984-87); Fellow, American Physical

Society; Fellow, Optical Society of America; Chief Technology Officer, Templex Technology Corp.

Steven L. Rolston, Research Physicist, National Institute of Standards and Technology. Ph.D. 1986, State University of New York at Stony Brook; B.A. 1980, Wesleyan University. Research Interests: Laser cooling and trapping of atoms; atom optics; metastable atom lithography; ultracold collisions including Penning ionization, photoassociation, and optical control of collisions; precision measurements of metastable atomic lifetimes; microwave and optical frequency standards; coherent VUV generation; and antihydrogen production. Other Scientific Activities: Session Organizer, OSA/ILS Annual Meeting (1996); Session Organizer, April Meeting of the APS (1994). Honors, Positions, and Memberships: Postdoctoral Fellow, University of Washington (1986-87), and Harvard University (1987-88); NIST/Sigma Xi Young Scientist Award (1993); RD-100 Award (1991); Member, American Physical Society.

Doreen A. Weinberger, Associate Professor, Department of Physics, Smith College, Northampton, Massachusetts. Ph.D. 1984, University of Arizona (optical sciences); B.A. 1975, Mount Holyoke College (physics and astronomy). Research Interests: Nonlinear optics; nonlinear guided wave structures, including optical fibers; semiconductor nonlinearities and optoelectronics; physics education. Other Scientific Activities: Member, OSA Annual Meeting Technical Program Committee (1991-92); Member, OSA Integrated Photonics Research Technical Program Committee (1991-92); Organizer, Symposium on Second-Harmonic Generation in Glass Structures, OSA Annual Meeting (1992); Vice-Chair, OSA Nonlinear Optics Technical Group (1991-92); Member, various OSA Committees: Newport Research Award, Optics and Photonics News Advisory, Book Publishing, Membership and Education Services, New Focus Research Award (1988-96); Member, numerous NSF program and proposal review panels. Honors, Positions, and Memberships: NSF Presidential Young Investigator (1986-91); Assistant Professor of Electrical Engineering and Computer Science, University of Michigan (1984-91); Member, American Physical Society; Member, Optical Society of America; Member, American Association for the Advancement of Science; Member, AWIS; Sigma Xi; Phi Beta Kappa.

DEADLINES

Distinguished Lecturer Applications:
(Spring 1997): **21 June 1996**
(Fall 1997): **17 January 1997**

ILS-XII Student Travel Grants: **9 August 1996**

CLEO '97 Abstracts: **27 November 1996**

ASK YOUR COLLEAGUES TO JOIN THE DIVISION OF LASER SCIENCE

The Division of Laser Science (DLS) is a subunit of the American Physical Society (APS) specifically concerned with the use of lasers in science, the application of lasers in technology, and the interests of the laser community within the APS.

The DLS

- Promotes laser interests within the APS and represents such interests with other societies.
- Sponsors awards and educational program, including a Distinguished Traveling Lecturer Program aimed at four-year institutions.
- Cosponsors the Interdisciplinary Laser Science (ILS) and Quantum Electronics and Laser Science (QELS) Conferences.

Benefits of Membership

- Summer research fellowships for undergraduate students sponsored by DLS members.
- Travel grants to the ILS and QELS for graduate students sponsored by DLS members.
- The DLS Newsletter, a valuable source of information related to your profession.
- A route to APS Fellowship.
- Influence of the Laser Science actions in APS.

How to Join

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