



## November 1995 Newsletter

### Chairman's Message November 1995

Dear Colleagues:

On 31 December 1995, the LSTG will have had a membership exceeding 3% of the total membership of the American Physical Society for two consecutive years. Thus, in 1996, the LSTG becomes eligible for Divisional status. My first task as Chair of the LSTG will be to petition the APS Council to change our status. Once approval is granted, we will hold an election for our first Divisional Councilor. On behalf of all of the previous Chairs (Carl Collins, Tom McIlrath, Steve Chu, Bill Stwalley, Rick Freeman, Andy Tam, Dan Grischkowsky, and Carl Lineberger) and Secretary-Treasurers (Frank Tittel, Norm Kurnit, Wayne Itano, and John Miller) of the LSTG, I would like to thank you, the members, for your continuing support and involvement in our activities over the past ten years.

At this juncture, it is perhaps appropriate to review and reflect on our role in the American Physical Society. The LSTG, soon to be the DLS, has developed into the focal point for laser science within the Society. It is unique among the subunits of the Society in that it is both broadly multidisciplinary and interactive with other professional societies. Our annual meeting, which is joint with that of the Optical Society of America, includes invited and contributed papers in chemistry, physics, biosciences, medicine, nonlinear optics, ultrafast phenomena, and instrumentation. Furthermore, attendees at the joint meeting come from all of the research sectors -- academe, industry, and government laboratories. This, I believe, is the paradigm for the future. As a Division, we will continue to pursue these outreach activities and will continue to encourage the Society to do so on an even grander scale.

Over the coming months, you will be asked to provide input in a number of ways, (e.g., you will be asked for suggestions for topics at the annual meeting, and for nominations for Fellowship in the Society from our Division). My fondest hope is that we are deluged with replies (although, historically, this has not been the typical level of response). The LSTG is an instrument of the membership, and those listed on the masthead are as close as your e-mail -- no envelopes to address, no stamps to lick. So let us hear from you.

With my very best wishes for the holiday season.

**Pat Dehmer**

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## ELECTION RESULTS

We welcome the winners of this fall's election. **Paul Houston** was elected Vice Chair. He will succeed to the position of Chair Elect at the close of the 1996 Annual Meeting, and subsequently become chair in 1997. **Michael Raymer** and **Naomi Halas** were elected as members-at-large.

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## ROCHESTER THEORY CENTER FOR OPTICAL SCIENCE AND ENGINEERING

A new Theory Center of interest to the LSTG membership has been established at the University of Rochester with funding from the National Science Foundation. The Center began operation in October. J. H. Eberly is the Center Director.

The Rochester Theory Center (RTC) has several interrelated mandates. The first is to award a number of Postdoctoral Fellowships (5 or 6 postdocs are expected to be in residence in steady-state) to highly-qualified theorists who have graduated recently from US universities, particularly including those who have carried out their thesis research in fields unrelated to optics, but who are interested in learning about and working on current challenges in optical science and technology.

### Support

In addition to support for postdoctoral workers, RTC will also provide partial support for occasional senior visitors, sponsor topical workshops, and foster exchanges between Center researchers and industrial organizations with common interests. There are already 10 industrial and governmental organizations that have tentatively identified common interests with RTC. Cooperative ventures with other centers, including ITAMP (Harvard-Smithsonian), CUOS (Michigan), and JILA (Colorado and NIST) are already being discussed.

In the first several months of 1996 RTC will fill several postdoctoral positions. Postdoctoral fellows will be expected to work with two or more of the senior members of the center, who are senior scientists and faculty of the departments of Chemistry, Mechanical Engineering, Physics and Astronomy, the Institute of Optics and the Laboratory for Laser Energetics at the University of Rochester. They are: G. P. Agrawal, R. S. Craxton, J. H. Eberly (Center Director), D. G. Hall, R. S. Knox, L. Mandel, C. J. McKinstrie, S. Mukamel, C. R. Stroud, Jr., and E. Wolf.

### Current Research Areas

Problem areas of current interest to RTC include solitons in fibers, cavity QED, computer modeling of strong-field laser-matter interactions, opto-electronic device physics, high-power frequency conversion, X-ray propagation, femtosecond photophysics, photon pair correlations and quantum phase, molecular and semiconductor nonlinear optics, instabilities and non-linear wave phenomena, quantum control, quasi-classical wave packets, and optical processes in nanostructures.

All applicants for RTC postdoctoral positions must have received a doctoral degree from a US university within the past 3 years. Salaries for Fellows are in the range \$30-\$35,000 per year. For information about application procedures, prospective applicants should send an e-mail inquiry to: [secr@rtc.rochester.edu](mailto:secr@rtc.rochester.edu).

## **DISTINGUISHED TRAVELING LECTURER PROGRAM IN LASER SCIENCE**

The **Laser Science Topical Group (LSTG)** 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 students 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:** LSTG 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 LSTG 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:** An LSTG member at the prospective host institution should request a particular lecturer 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 fall of 1996, please submit an application by January 19. Applications for the Spring of 1997 should be submitted by June 20.

**Send applications to:** Dr. John C. Miller, MS 6125, Bldg. 4500S, Rm. S118, Oak Ridge National Laboratory, PO Box 2008, Oak Ridge, TN 37831, phone 423-574-6239; fax 423-576-4407; e-mail [millerjc@ornl.gov](mailto:millerjc@ornl.gov)

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## **NEWS FLASH: MORE MEMBERS ARE ELIGIBLE FOR FELLOWSHIP**

LSTG has made many distinguished contributions to the list of APS Fellows, including the six elected this year and to be announced in November, but there could be more!

The number of LSTG nominations chosen to be forwarded to the APS for

confirmation as Fellow in a given year is typically in the range of five to ten. This depends on the good judgment of the nominators in the first place and also on the Divisional Committee on Fellows headed by the LSTG Vice-Chair, Paul Houston, but the Committee can do nothing without nominations. This is where LSTG members must come into the picture. (Continued on page 7)

## **STUDENT TRAVEL GRANTS**

### **Awards of up to \$700**

The LSTG is pleased to continue its program to support student travel to LSTG-sponsored meetings. A limited number of grants for travel and living expenses, up to \$700, are available to graduate students who are LSTG members and who are authors or co-authors on an oral or poster paper at the QELS or ILS-XI meetings. 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 from 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 the first author, and a letter of nomination from a member of the LSTG. 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 should 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 applications will be evaluated by the selection committee of J-J. Song (Chair), I. Abella, N. Halas, and S. Leone. Applications should be sent to Dr. John C. Miller, Oak Ridge National Laboratory, Bethel Valley Road, Bldg. 4500-South, MS-6125, PO Box 2008, Oak Ridge, TN 37831-6125. Fax: 423-576-4407, **email: millerjc@ornl.gov**.

**The deadline for submitting applications is March 8, 1996.**

## **NOTICE TO LSTG AUTHORS AND EDITORS**

The Executive Committee has authorized a new policy of providing notices in the LSTG newsletter about new books by LSTG members as a two-way benefit of LSTG membership. Both LSTG authors and the LSTG community should benefit from widespread information about new books related to LSTG interest areas. All LSTG members who are new authors (copyright 1994 or 1995 and later) are invited to send a letter or fax showing the copyright

page, the title page, table of contents, and preface of their new book to the LSTG Newsletter Editor. The author is also invited to write one or two short sentences about the purpose of the new book; these will appear with the notice.

This is an experiment that will be evaluated after a suitable period. The Executive Committee will be pleased to receive comments and suggestions about it. Comments can be addressed to Roger Becker, the Newsletter Editor, or to John C. Miller, LSTG Secretary-Treasurer. If this service is valued by the membership, the same idea might be extended to new software releases intended for instructional purposes, and perhaps other similar educational aids.

## **SYMPOSIA FOR ILS XII**

### **Lasers in Physics, Paul Julienne**

Near-Field Optical Microscopy I, concepts & techniques, Lon Goldner, NIST

Near-Field Optical Microscopy II, applications. Lon Goldner

BEC I, Bose-Einstein Condensation Theory and Experiment, Dan Heinzen, Univ. Texas

BEC II, Ultracold Collisions-suppression and Relation to BEC, Dan Heinzen

Dynamics of wave packets and Rydberg States, Nick Bigelow, Univ. Rochester

Atomic Manipulation and Interferometry, Steve Bolston, NIST

High-Field Coherent Control, Ken Kulander, LLNL

### **Lasers in Chemistry, Giacinto Scoles**

FM Spectroscopy, Marsha Lester, Univ. Penn

Chemical Applications of Optical Cavities, Alec Wodtke, UCSB

Surface Photochemistry, Ian Harrison, Univ. Virginia

Laser Spectroscopy at Very Low Temperatures, W. C. Stwalley, Univ. Conn

Vibrational Effects in Electron Transfer Reactions, Anne Myers, Univ. Rochester

### **Physics of Laser Sources, Howard Milchberg**

Table Top X-Ray Lasers, Jorge Rocca, Colorado State Univ.

Advances in Fiber Lasers, Curtis Meryuk, Univ. of Maryland

Advances in Ultrashort Pulse High Energy Lasers, Henry Kapteyn, Washington State Univ.

New Concepts in Lasers, to be announced

### **Nonlinear Optics and Ultrafast Phenomena, Andrew Weiner**

Coherent nonlinear spectroscopy of distorted systems and nanostructures, Stephan Koch, Marburg Univ.

Single (or few) Cycle Optical Pulses, Andy Weiner, Purdue Univ.

Picosecond and parametric sources for the Mid-Infrared, Rana Beigung, U. Kaiserslautern

Novel Types of Optical Solutions, Ysaron Slibergerg, Weizmann Institute

### **Laser Applications, Peter Delfyett**

Lasers in Telecommunications High Speed, WCM Arrays, Ni-Op Temp., Patrick LiKamWe, CREOL

Lasers in Optical Data Storage 2-Photon Absorption, Spectral Hole Burn, Tom Mossberg, Univ. Oregon

Lasers in Medicine: Compact Sources, Imaging and Diagnostics, R. R. Alfano, CCNY

Material Processing "small green" lasers in Printing, Laser-Aided Manufacture, Arvinda Kar, CREOL

## **IMPRESSIONS OF UNDERGRADUATE SUMMER RESEARCH**

The advisors of the undergraduates participating in LSTG's summer research grant program are uniformly happy with the results. Students helped build and assemble laboratory equipment. More importantly, the research vitalized the educational programs of the schools.

At Fort Lewis College Jared Wilson used a pulsed dye laser to excite resonances on selected states of nickel vapor. One application of the work was to develop a sensitive probe for nickel, which is highly toxic. Nickel has several low-lying states which make it possible to infer the original temperature from the distribution of the states of the ablated material. Jared's advisor, Ron Estler, emphasized the wider educational benefits of his work. "Here we think research is inseparable from undergraduate education. Anything that promotes undergraduate students getting into the lab is very good. This program let me tap into our physics majors." At Centenary College Juan Rodriquez had similar comments. His student, Valerie Zabel, measured emission spectra of biological compounds such as vitamin B12 and anthracene. Work was done in the gas phase to separate out environmental effects on the response of the molecules. "Having Valerie was definitely a pleasure. She really got into it as if it were her own project. She did computer interfacing at a very fundamental level. Now we have an

improved spectrometer. When other students see that someone is having a good time they also want to get involved in summer projects. Pretty soon you develop a culture in which research is desired by students. Students develop a real appreciation for research".

The admiration of the students for the faculty was reciprocated. At Fort Collins Kyle Kung found his interaction with his advisor Nancy Levinger very rewarding. "I enjoyed working with an advisor who gave me a lot of room." Kyle filtered a directed white light source pumped by a sapphire laser to study the resonant second harmonic generation from organic films on water. Dave Robertson at Lawrence University also stressed the personnel interaction with his advisor, John Brandenberger. "I liked doing different things; I liked the variety and the collaboration with the faculty. My advisor talked to me about two hours a day. It blew me away." David used a diode laser to measure the absorption line shape of transitions in rubidium vapor. He found that the extent theory had failed to account for the population of excited states at high laser intensities.

### Hard Knocks

The first thing the students learned about was frustration. At the University of the Redlands Jeb Adams spent a long time working on an old YAG-pumped dye laser, replacing parts. "The dye was a mess, it leaked all over the floor." Jared Wilson found that frustration called for adjustment. "It takes discipline to deal with the setbacks that you encounter in any lab environment." Valerie Zabel shared this sentiment. "I had never done long-term research before. Programming was very difficult. There is so much trial and error. It was interesting to see how time consuming it really is. It was quite an eye opener for me." In the end, though, she found it to be well worth while. "By working with Dr. Rodriguez I learned a lot about the joys and heartaches of research. It is a long and difficult process that never runs according to plan. I think that is the beauty of it." Dave Robertson agreed. "Working eight hours a day is different from taking a class; it's a more mature experience, you are trying to solve real problems.

The complexity of research work added a new dimension beyond their previous experience. Valerie found this stimulating. "There were so many mirrors to guide the laser beam. It reminded me of a rat in a maze. I enjoyed it a lot." It was also demanding. One thing that impressed Jared was "the need to constantly think about everything that is going on, to develop an awareness of the whole experiment."

### Rewards

The upshot was the reward of accomplishment. Kyle concluded that "the subject is interesting; it's given me the drive to keep working. To see the results come out of a project that you've built up is very exciting. Nothing feels better." Jeb did not let the spilled dye on the floor get to him. "I had a great time. This is what I wanted to do. I had never worked on the inside of a laser before; I just saw pretty beams come out. I never did anything as intense as trying to fix a logic board." Valerie would like to see experience shared more widely. "I hope everyone gets a chance to do research. It is a lot of fun." She communicated her interest to many non technical people. Jeb did this in a formal setting. "We had a poster session at school which drew the

attention of a lot of students who were not science-oriented." Kyle enjoyed showing other undergraduates how the equipment worked and relating it to classroom lectures.

Their enthusiasm has propelled several students into continuing kindred work at the graduate level. Kyle, who plans to go into physical chemistry with a specialty in laser spectroscopy has made his career plans based on his experience. "This has really focused my career path." At the University of the Redlands Jeffrey Bartz observed that "LSTG supported a student (Adams) who had an interest in science but didn't know if he wanted to do research. It's prompted him to go on to graduate school." Jeb added "It made a difference. I had never had a good lab experience before. This gave me a chance to do something I could do well. I'm not afraid of the lab anymore." He will soon go on to graduate school in chemistry. Dave Robertson found that "it helped me to know what area of physics I want to go into (atomic physics). Before I had some doubts about graduate school; now I am applying to several schools." Ron Estler noted that "the project cemented some of Jared's ideas about what he wanted to do and what he didn't want to do. Both are important. If students learn where they fit, that's good. Jared did a lot of software development, and is still doing independent research. Students learning from other students is even better. We have rural students. Albuquerque is the nearest town of any size. Many have dropped out, then all of a sudden they get turned on. Usually they turn out to be terrific role models for the younger students. If they learn that they can be part of the real world, they are almost shocked to think that they are working on something that other people care about."

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### **News Flash(Continued from page 3)**

The Executive Committee is urging all LSTG members to think whether a colleague deserving of the rank of Fellow comes to mind. If you are uncertain about a colleague's status, consult the APS Membership Directory, where an asterisk identifies Fellows.

Any member can nominate any other member, and the supporting documentation is not difficult to assemble. The deadline for a nomination and supporting letters to reach the APS, in time for LSTG consideration, is almost six months away (April 1, 1996) providing plenty of opportunity for action. All of the required information is available on a WWW page and easily found via:

<http://aps.org/fellowship/fellform.html>

A phone call to Ken Cole of the APS at 301209-3268 will also work. **Joe Eberly CALENDAR**

**International Conference on Lasers '95**, 48 Dec 1995, Charleston, SC. 703-642-5835; fax 703-642-5838.

**Photonics West**, 27 Jan - 2 Feb 1996, San Jose Convention Center, San Jose, CA. Call SPIE at 360-676-3290 or 800-483-9034; fax 360-647-1445. e-mail PW96@spie.org



**Advanced Solid-State Lasers Topical Meeting**, 31 Jan-3 Feb 1996, San Francisco, CA. Sponsored by OSA/IEEE-LEOS. Technical meeting, tabletop exhibit.

**European Optical Society Topical Meeting on Materials for Nonlinear Optics**, 14-18 Jan 1996, Val Thorens, France. Contact: F. Kajzar, DEIN/SPE/GCO, Bat 451, CE Saclay, 91191 Gif-Sur-Yvette, France.

**Advanced Solid-State Lasers Topical Meeting**, Jan 31-Feb 3, 1996, San Francisco, CA. Technical Meeting, Tabletop Exhibit. Sponsored by OSA/IEEE-LEOS.

**Orlando Topical Meetings**, 18-22 Mar, 1996. Orlando, FL. Technical Meetings, Tabletop Exhibit.

**Spring Topical Meetings**, Apr 29 - 3 May, 1996, Boston, MA. Technical Meeting, Tabletop Exhibit, Holography, Diffractive Optics and Micro-Optics, Extreme Ultraviolet Lithography, Optical Fabrication and Testing, Integrated Photonics Research (sponsored by OSA/IEEE-LEOS).

**Ultrafast Phenomena**, 28 May - Jun 1, 1996. Hotel Del Coronado, San Diego, CA. OSA Conference Services, 202-223-0920; fax 202-416-6100, e-mail: confserv@osa.org. OpticsNet: URL <http://192.239.36.3> or <http://www.osa.org>

**Conference on Lasers and Electro-Optics (CLEO'96)**, 2-7 Jun, 1996, Anaheim, CA. Co-located with the Quantum Electronics and Laser Science Conference (QELS '96). Sponsored by: IEEE-LEOS/OSA. Technical Meeting, Short Courses, Technical Exhibit.

**Quantum Electronics and Laser Science Conference (QELS '96)**, 2-7 Jun, Anaheim, Ca. Co-located with the Conference on Lasers and Electro-Optics (CLEO '96). Sponsored by: APS-LSTG/IEEE-LEOS/OSA. Technical Meeting.

**Laser Interactions with Materials**, Gordon Research Conference, 9-14 Jun 1996, Holderness School, Plymouth, NH. Tom Dickinson, Chair, Washington State University JTD@WSU.EDU. 509-335-4914; fax 509-335-7816

**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**, 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.

**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. Technical Meeting, Short Courses, Technical Exhibit.

**OSA '96 80th Anniversary Annual Meeting**, 20-25 Oct., Rochester, NY. Co-located with ILS-XII and Optics and Imaging in the Information Age. Abstract Deadline: April 24, 1996. 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. Abstract Deadline: April 24, 1996. (For further information contact OSA). Sponsored by APS-LSTG, 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). 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). Sponsored by APS-LSTG/IEEE-LEOS/OSA. Technical Meeting.

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## **Deadlines**

Distinguished Lecturer Applications (Fall 1996): 19 January 1996.

1996 Undergraduate Summer Research Applications: 10 February 1996

LSTG Student Travel Grants for CLEO/QELS: 8 March 1996.

APS Fellow Nominations: 1 April 1996

ILS-XI Abstracts: 24 April 1996.

Distinguished Lecturer Applications (Spring 1997): 20 June 1996.

ILS-XI Student Travel Grants: 5 July 1996.

CLEO '97 Abstracts: 27 November 1996

## **Summer Research Summaries**

This year eight undergraduates participated in the LSTG summer research program:

Jared Wilson of Fort Lewis College, Durango, CO. Advisor: Ron Estler. Using Resonance-Ionization Mass Spectrometry, Wilson investigated the absorption spectrum of nickel atoms.

Kyle Kung of Colorado State University, Fort Collins, CO. Advisor: Nancy Levinger. Kung used resonant-enhanced second harmonic generation to investigate dye aggregation at water-solvent interfaces.

Valerie Zabel of Centenary College, Shreveport, LA. Advisor: Juan Rodriguez. Zabel studied the temperature dependence (300700 K) of emission spectra.

Jeb Adams of University of Redlands, Redlands, CA. Advisor: Jeffrey Bartz. Adams developed apparatus for the study of the energy disposal of laser-excited cobalt complexes.

Dave Robertson of Lawrence University Appleton, WI. Advisor: John Brandenberger. Using saturated absorption laser spectroscopy, Robertson studied the lineshape of rubidium hyperfine transitions.

Paul Mugabi of Gettysburg College, Gettysburg, PA. Advisor: Timothy Good. Mugaby constructed a laser-induced fluorescence apparatus for the study of plasma wave particle interactions.

Matthew Lakin of Georgetown University, Washington, DC. Advisor: Janice Hicks. Using surface second harmonic generation, Lakin studied HCl and HOCl adsorbed on ice crystals.

Geoffrey Park of Swarthmore College, Swarthmore, PA. Advisor: Carl Grossman. Park set up an experiment to measure the nonlinear coefficients of DIVA.

## **MINUTES OF THE EXECUTIVE COMMITTEE MEETING OF THE LASER SCIENCE TOPICAL GROUP (LSTG)**

**SEPTEMBER 13, 1995**

**PORTLAND, OREGON**

The meeting was called to order by the LSTG Chair, Carl Lineberger, at 12:00 noon in the Red Lion Lloyd Center Hotel. The meeting was held in conjunction with the Interdisciplinary Laser Science Conference (ILS-11) and the annual meeting of the Optical Society of America (OSA). Other Executive Committee members present were Chair-Elect Patricia Dehmer, Vice-Chair Joseph Eberly, Secretary-Treasurer John Miller, Past-Chair Dan Grischkowsky, and Members-at-Large Anthony Johnson, William Cooke, John Weiner, Wendell Hill, III, and Paul Kleiber (Carl Weiman was absent).

Thomas McIlrath, William Stwalley, and Mike Perry (for Roger Falcone), representing the Joint Council on Quantum Electronics, were present as non-voting ex-officio members of the Executive Committee. Nasser Peyghambarian, Marsha Lester, and Jaqdeep Shah represented the ILS Conference Committee. Geraldine Richmond, Chair of the ILS Undergraduate Summer

Research Program, was present. Mary Pat Paris, Membership Manager of the American Physical Society, was present by invitation.

### Membership

Paris, APS Membership Manager, presented summary material on LSTG membership, renewals, and overlap with other APS subunits and briefly discussed them. As of August 31, 1995, the LSTG membership was 1,165 representing 3.2% of the total APS count of 36,169. Both numbers should increase until the end of the calendar year when the numbers become official. The LSTG percentage is expected to remain above 3%. Grischkowsky reported that he has arranged an additional 273 mail solicitations to potential new members in a continuation of his membership drive.

### Division Status

The LSTG is expected to be eligible to become the Division of Laser Science (DLS) following verification of its membership (as greater than 3% of the total APS membership) as of December 31, 1995. Division status would become official following a vote at the APS Council Meeting, May, 5-6 in Indianapolis, Indiana. The APS has proposed that the new DLS elect its division councilor during its normal fall election cycle, the appointment becoming official on January 1, 1997. Dehmer and Lineberger expressed dissatisfaction with the arrangement, pointing out that the DLS would have no voting power for all of 1996. Dehmer explained that the APS constitution requires that councilors be elected in the year prior to serving but that this provision was enacted for other reasons. Dehmer will discuss with the APS the possibility of holding a special election of the DLS in January to elect a councilor who would then have voting rights immediately. A change in the APS constitution would presumably be required.

### Finances

Miller presented a summary (see attached) of the LSTG financial status for FY 95 (ending June 31, 1995). LSTG income was \$60,560 and expenses totaled \$68,978 leaving an ending balance of \$104,250. The largest expenses were for the major LSTG programs as follows: Undergraduate Summer Research Program (\$24,000), Distinguished Traveling Lecture Program (\$10,286), Graduate Student Travel Grants (\$8752), and ILS-10 (\$9770).

### Newsletter

Miller summarized a report from Roger Becker, newsletter editor, and thanked contributors for their efforts. The establishment of a "home page" on the Internet was discussed. Paris pointed out that many other subunits had home pages nested within the APS home page. It was pointed out that the major LSTG program descriptions, (for instance, the Distinguished Traveling Lecture Program (DTL) and the ILS registration and symposium information) could also be posted. Finally, the issue of electronic posting/delivery of the newsletter was briefly discussed. Cooke accepted the challenge of developing an LSTG home page.

### Distinguished Traveling Lecture Program

Lineberger announced a slate of five candidates for the next round of DTL speakers. An increased number of speakers is intended to provide more balance in subject matter and geography, thus allowing more scheduling flexibility. It also reduces the burden somewhat on speakers and allows more individuals to be honored by appointment as DTL speakers. The total number of lectures and the budget would, however, remain the same as in the past. A motion to authorize \$15,000 for FY 96 was passed.

#### Student Travel Grants

Miller summarized the status of the program. Eleven students were supported (up to \$600) to attend the Portland meeting. Discussion followed on ways to encourage more students to attend our meetings. McIlrath reported that student attendance was down from last year. Dehmer pointed out that DAMOP makes special arrangements for inexpensive lodging (three or more to a room) and can thus subsidize more students for the same money. Grischkowsky proposed a change to the requirement that the student must present a paper. He suggested that it be eased to require only that the student be a co-author on a paper. He pointed out that simply attending a major conference is a significant professional opportunity for a graduate student. A motion to ease the "presenter requirement" was passed.

#### Joint Council for Quantum Electronics

McIlrath summarized recent deliberations on changing the format of the OSA meeting to greatly reduce the number of parallel sessions and increase the size of the poster session. Any decisions on this reorganization would not be implemented before the 1997 meeting. The implication of these changes to the co-located ILS meeting was briefly discussed.

#### Interdisciplinary Laser Science (ILS) Conference

Peyghambarian reported that support for ILS-11 included \$5000 from NSF, \$5000 from the Army Research Office, \$500 from Lambda Physik, and approximately \$12,000 from the LSTG. The NSF monies were earmarked for student support only. Discussion ensued on focusing future fund-raising efforts on students rather than invited speakers.

Lester reported on progress toward ILS-12 in Rochester, New York, October 20-25, 1996. The program committee was in the process of selecting symposia in a concurrent meeting. Several people suggested increased advertising via the LSTG Newsletter and the Internet in order to increase awareness and attendance. A motion to provide \$14,000 to support ILS-12 was passed. Richart Slusher was named as the Program Vice-Chair for ILS.

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#### **NEW EDITOR WANTED!**

A new editor is needed to take over the newsletter now that we are a division. Contact Roger Becker, 513-229-3964, becker@udri.udayton.edu.

or call

John Miller, 423-574-6239,

millerjc@ornl.gov

## **ASK YOUR COLLEAGUES TO**

### **JOIN THE LASER SCIENCE TOPICAL GROUP**

The Laser Science Topical Group (LSTG) is on the verge of becoming a division. It is the 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 LSTG**

Promotes laser interests within the APS and represents such interests with other societies.

Sponsors awards and educational programs, 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 LSTG members.

Travel grants to the ILS and QELS for graduate students sponsored by LSTG members.

The LSTG Newsletter, a valuable source of information related to your profession.

A route to APS Fellowship.

Influence on the Laser Science actions in the APS.

#### **How to Join**

If you are already an APS member, check the LSTG on your APS renewal form and include the additional \$6 with your dues. If you have **already renewed** your APS membership for the year beginning 1 July 1996, use the form below. If you are **not yet** an APS member, contact the APS at the address given below or call the APS Membership Department at 301-209-3280. For more information, contact Dr. John C. Miller, LSTG Secretary-Treasurer, by phone (423-5746239) or fax (423-576-4407).

Use the form below only if you have already sent in your APS renewal form.

I am a member of the APS for Fiscal Year 1996. I wish to join the Laser Science Topical Group.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

MAIL TO: The American Physical Society

Membership Department

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College Park, MD 20740-3844