



September 2006 Newsletter

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Editor's Note

Jenny Magnes, September 2006

Dear fellow DLS members: To start with, I would like to thank the DLS leadership for trusting me with the new role as the editor of the DLS newsletter. I will do my best in serving the DLS members in this role. It will be a great pleasure to provide you with laser science news and updates on conferences, awards, events and research.

Furthermore, I thank Marjatta Lyyra for her recommendation and her leadership during the years I have known her.

The newsletter also serves as a forum for questions, concerns, and ideas from the community. It is my hope to provide a place where we can help to develop ideas and address concerns that may not have found a place in scientific journals. Some of the postings may serve to tie new collaborations, create new subfields, or connect different areas of research.

Other areas that might be of interest are careers, mentoring, or plain job placements. I am sure that tips and ideas will be especially appreciated by many readers. In this manner, we also give a voice to a broader audience such as members in industry and Laser Science support personnel.

I am very much looking forward to hearing from you. Send any input to jenny.magnes@usma.edu.

Chair's Message

Harold Metcalf, September 2006

To DLS members:

During the several months since the last newsletter, most of the activity of your division and its leadership has been “behind the scenes”, but that is about to change dramatically. One obvious example can be found on the masthead of this newsletter: after many years of dedicated service, Marjatta Lyyra has turned over the editorship to Jenny Magnes. She will welcome input of news items from the membership in general, and DLS welcomes her aboard! In addition there is activity calling for your participation, namely, the ballot is open for your vote. Now is the chance for you to have some influence on the leadership of your division, and you are encouraged to do so. It's really very easy to vote at the URL provided in the email to you by John Fourkas on 25 August and repeated on 5 September, so don't hesitate. There is a superb slate of candidates from whom you will select not only the leadership of DLS but also its representation to the APS through its Council. Vote!

The other major activity about to burst forth is our annual meeting in Rochester next month, 8 – 12 October. Prepare to attend a meeting featuring a record number of contributed and invited papers that are distributed in sessions devoted to a broad range of topics of interest to us all. You can view the entire program at <http://www.osa.org/meetings/annual/program/> and register at the discounted rate until 15 September. Don't put it off – you could lose \$100 by not pre-registering. Come see our members who were selected for APS Fellowship be recognized, hear the Schawlow prize lecture, listen to more than 40 of the future leaders of our field describe their work in the Symposium on Undergraduate Research, see the apparatus exhibit, and otherwise enjoy what will truly be a landmark meeting thanks to the effort of our program chairs, Poul Jessen and Arjun Yodh.

Our business meeting will be Tuesday afternoon, 10 October, at 5:00 PM. This is a chance to express your sentiments in a public forum (email communication to the DLS leadership is always welcome). The banquet will be Tuesday evening following the business meeting, and is made especially attractive because its cost is partially

subsidized by your division. This is an opportunity to relax with friends, meet new people, and generally enjoy a special dinner. The DLS leadership is committed to making this your “MUST ATTEND” meeting every year, and substantiation this notion will become patently clear in Rochester next month. Don’t miss it. More information is in a separate “welcome” section below and at the program website cited above.

Just in case you think meetings simply “happen”, be informed that the planning began last month for the October 2007 meeting in San Jose. Our program chairs for that meeting, Fred Raab of LIGO and Charlie Schmuttenmaer of Yale, are already working to make that meeting especially attractive. Suggestions for speakers and for topics are very welcome and should be sent directly to them.

The “behind the scenes” activity is by no means confidential. In May there was an executive committee (EC) meeting whose proceedings are summarized elsewhere in this newsletter. We allocated funds for several of our activities, and adopted a new stance for the duties of the members. These initiatives will be formalized in legitimate motions after being tested in various forms, but essentially amount to selecting specialized activities for various EC members to promote benefits for our membership. Our bylaws (see <http://www.aps.org/units/dls/bylaws.pdf>) ascribe some of these activities to members of the leadership chain, but we plan to institute others.

For example, a nascent “careers committee” populated by ‘at-large’ members will encompass the Symposium on Undergraduate Research, support for graduate students and post-docs to attend DLS meetings, the New Laser Scientists Conference, and the Distinguished Traveling Lecturer program, to assure their successful operation into the future. These special benefits for DLS membership have been shepherded by dedicated people for many years, and we want to enable their continuation. Another activity for an “at-large” member will be to seek out relevant news items to feed to Jenny so that our newsletter will continue to be comprehensive. Anne Kelley has volunteered to be the first person to do this. Of course, any input from the membership is always welcome (this means you!). On yet another topic, our membership numbers are near the threshold to remain as a division of the APS, and one of the prescribed duties of the recent past chair will be membership maintenance and enhancement. Needless to say, we will call on you for help by enrolling your colleagues in DLS.

DLS is also an active participant in the CLEO/QELS meeting usually held in the late spring. In fact, this meeting has historically provided a substantial income whose proceeds support many of our activities. The program for this meeting is set by a Joint Council for Quantum Electronics (JCQE) and its budget is set by a steering committee, which has substantial overlap with JCQE. We are indeed fortunate that Bob Boyd recently agreed to continue his excellent service to DLS on JCQE, and he’ll join Henry Kapteyn and Wendell Hill. Our representation to the steering committee will continue with Wendell, and he’ll be joined by Mike Raymer. These people play a vital role in sustaining the DLS role in this important meeting activity.

WELCOME TO LASER SCIENCE XXII

The leadership of the Division of Laser Science (DLS) of the American Physical Society is pleased to welcome you to our annual meeting, called LS-XXII, in Rochester in October, 2006. Located in one of the optics capitals of the world, the meeting provides a forum for the latest work on laser applications and development, spanning a broad range of topics in physics, biology and chemistry. This year's program includes many of the most exciting areas of modern laser science, including ultrafast dynamics, quantum information, and applications to condensed matter and the life sciences. In addition to an outstanding technical program, there are many exciting special symposia and events scheduled for the meeting this year. Special attention is appropriate for the Symposium on Undergraduate Research on Monday afternoon showcasing the work of some of our youngest prospective scientists. FIO/LS attendees may attend the technical sessions of any of these meetings.

One of the plenary talks on Monday morning will be given by our own Steve Chu who has expanded his horizons beyond laser and atomic physics to become Director of Lawrence Berkeley National Laboratory. The technical sessions of this year's LS meeting are organized around seven focused themes: Quantum Information Science, Precision and Quantum Enabled Measurements Cold atoms and Molecules, Ultrafast laser science (Joint with FIO), Nonlinear Optics, Optics in Condensed Matter Physics, and Biomedical Laser Science (joint with FIO). We are also sponsoring the Symposium on Undergraduate Research on Monday from 12:00 noon to 6:30 PM. The event provides an opportunity for some of the student members of our community to present their work before an audience of their peers as well as the larger optics community. All are invited and encouraged to attend.

Honors and Awards to DLS Members 2006

We congratulate our members on the recognition of their achievements. It is always a great event when the outstanding achievements of our division members are recognized on a larger scale. We can see from the awards listed that the efforts impact many other fields and are appreciated nationally and globally. The awards recognize achievements in optics, quantum optics, spectroscopy, teaching, laser science, physical chemistry, etc. Congratulations C. Lewis Cocke, Mark Johnson, Rainer Grobe, Q. Charles Su, Paul B. Corkum and F. Fleming Crim!

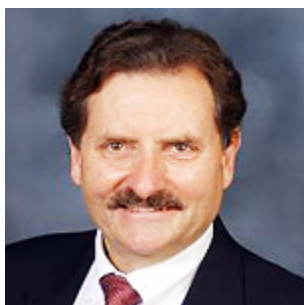


Davisson-Gerner Prize in Atomic or Surface Physics:

C. Lewis Cocke
Kansas State University

“For a sustained record of novel experimental developments and new insights into interactions of ion and photon beams with atoms and molecules.”

source: <http://jrm.phys.ksu.edu/Faculty/cocke.html>



Earle K. Plyler Prize for Molecular Spectroscopy:

Mark Johnson
Yale University

“For the applications of spectroscopic methods towards the understanding of solvation on the microscopic scale, especially the solvation of protons and hydroxide anions by water.”

source: <http://www.aps.org/praw/plyler/06winner.cfm>



Research in an Undergraduate Institution:

Rainer Grobe and Q. Charles Su
Illinois State University

“For their outstanding effort at creating a successful and renowned optical theory research program at Illinois State University, and for their exemplary involvement of undergraduates in this research.”

source: http://www.phy.ilstu.edu/~ilp/media_coverage/CAS_News_10_10_05.html



Arthur L. Schawlow Prize in Laser Science:

Paul B. Corkum
NRC Canada

"For seminal contributions to the development of ultrasoft, intense laser-field science, including his development of the recollision model for laser-matter interactions, and his leadership in the emerging field of attosecond laser science."

source: http://steacie.nrc-cnrc.gc.ca/personal/corkum/corkum_index_e.html
<http://www.osa.org/meetings/annual/program/plenary/default.asp>



American Chemical Society

Irving Langmuir Award in Chemical Physics:

F. Fleming Crim, Jr.
University of Wisconsin

"Collisional energy transfer in highly vibrationally excited molecules."

source: <http://www.rescorp.org/acs.06.html>



Optical Society of America

Charles Hard Townes Award:

Paul B. Corkum
NRC Canada

"For key contributions to the understanding of the physics of atoms and molecules in intense laser fields and the application of these ideas to ultra-fast measurement techniques."

sources: http://steacie.nrc-cnrc.gc.ca/personal/corkum/corkum_index_e.html
<http://www.osa.org/meetings/annual/program/plenary/default.asp>



In the News

- The article [Undergrads Show their Stuff at FiO](#) by **Harold Metcalf** appeared in the March issue of OPN. The article highlights the success of the undergraduate symposium during the the Frontiers in Optics/Laser Science (FiO/LS) meeting in October 2005.
- **John Marburger's** speech given on the 75th Anniversary celebration of AIP will be published in [Physics Today](#).
- **Gordon Drake** is the new editor of [PRA](#). **Congratulations!**

Executive Committee Minutes

- This Executive Committee (EC) was crowded with evaluating past events and projects as well as getting ready for a new round. Members present were: Hal Metcalf, Leo Hollberg, Mark Johnson, John Fourkas, Anne Kelley, Steve Cundiff, Wendell Hill, Dan Gauthier, Joe Eberly and Alex Gaeta. Also, we had the following visitors for portions of the meeting: Henry van Driel (chair of JCQE), Liz Rogan (executive director, OSA), Will Ryan (Senior Director of Meetings and Conventions, OSA)
- Joe Eberly remarked that several organizations are striving to make meetings such as the OSA meetings more collaborative to broaden participation. PhAST will draw more industrial scientists. On another note, APS, AIP, and OSA have been developing plans for larger homeland security research needs. One critical point is the procedure in granting visas to students and visiting scientists.
- Membership has been steady but is not at the target of 3% of APS. Encourage students and colleagues to join! John Fourkas suggested a membership committee. We would like to hear about the background of our members and their interests. Questionnaires will follow.
- New are electronic ballots.
- A DLS member list may soon be available on the APS website.
- The chair, Harold Metcalf, is asking for historical information on DLS officers, committee members, agreements etc. Please, contact the chair with any info at hmetcalf@notes.cc.sunysb.edu. A DLS handbook will be developed with the input.
- A DLS Careers Committee is under development to take care of DLS members from "cradle to grave." To institutionalize the roles in promoting carrers and education, the proposed duties are: Chair (DLS vice chair), Distinguished Traveling Lecturer (DTL) officer, Symposium on Undergraduate Research (SUR) officer, one in charge of the New Laser Scientists Conference (NLSC) officer, and the fourth of Student Travel Grant (STG) program officer.
- New responsibilities of EC members have been proposed by Hal Metcalf:
 - a. The recent past chair should be chair of the membership committee.

- b. The chair-elect should be chair of the Careers and Education committee.
 - c. The two "first year" members-at-large should gather news and information to feed to the newsletter editor. This includes awards and other recognition of DLS members, major scientific results, highlights or achievements in or related to DLS, major science funding changes, special invitations and achievements of members, etc. This info can be gathered from the media, from the APS news, from other organizations' news (e.g., OSA), etc. Their job would be to read and report, and it would put them in strong contact with the community they will represent for the next three years.
 - d. One of the two "second year" members-at-large would assist the secretary-treasurer with selecting the student travel grant awards and the other would keep track of and offer improvements to the Divisional web page.
 - e. The third year member-at-large who worked on the web page would continue for a second year and acquire a second-year apprentice, and the other one would arrange for the DLS banquet program at the annual meeting, including selection of speakers, venue and menu, etc. It would need close coordination with the program co-chairs.
- Please direct any comments to the appropriate [committee member](#).
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Calendar

[Laser Science Conference XXII - Annual Meeting of the DLS](#)

(Co-located with the OSA Annual Meeting, "Frontiers in Optics 2006")

October 8-12, 2006

Rochester Riverside Convention Center, Rochester, NY

New Laser Scientists Conference:

The DLS will sponsor the 4th New Laser Scientist Conference, a 1½ day mini-conference for new faculty and scientists doing laser related research, in conjunction with the October 2006 meeting of the OSA/DLS in Rochester, NY. The NLSC helps to establish a peer group for new laser scientists in the DLS and includes roundtable discussions as well as interactions with funding program managers. This conference is designed to benefit new faculty and scientists who are within a few years of their first permanent appointment. DLS expects to offer this conference approximately every other year. NLSC-4 will be coordinated by Bob Jones and Mike Chapman.

For more information please contact: Bob Jones at rrj3c@virginia.edu, or or tel. 434-982-2189 at Physics Dept., University of Virginia, Charlottesville, VA 22904-4714.

source: <http://www.aps.org/units/dls/nls.cfm>

Note that the Symposium on Undergraduate Research will again take place in Rochester.

For other details see:

<http://www.osa.org/meetings/annual/>
<http://www.osa.org/meetings/topicals/>

Student Travel Grant Program

Congratulations to the winners of the DLS Student Travel Grants at QELS. They are (with presentation titles):

- **Jing Bai**, Georgia Institute of Technology, *"Enhancement of Second-Harmonic Generation in Mid-Infrared Quantum Cascade Lasers."*
 - **Zhigang Chen**, University of Colorado, *"Spin Dynamics in n-Doped CdTe Quantum Wells: INterplay of Excitons, Trions and Two-Dimensional Electron Gas."*
 - **Ksenia Dolgaleva**, University of Rochester, *"Modification of Fluorescence Decay Times in Composite Materials Based on Nd:YAG Nanoparticles."*
 - **Alexander Govyadinov**, Oregon State University, *"Subwavelength Light Guiding in Photonic Funnels."*
 - **Shannon O'Leary**, University of Oregon, *"A Lambda-Type System for Electron Spins in a Mixed-Type GaAs/AlAs Quantum Well."*
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Distinguished Traveling Lecturer (DTL) Program

This program is very successful with the number of college applications for speakers in balance with the number of speakers available. We have nine volunteers as Distinguished Travelling Lecturers leading to enough flexibility with respect to accommodating the colleges' first choices for speakers.

The list of current DTLs include:

- **Jim Kafka**, Spectra Physics
- **Carlos Stroud**, The Institute of Optics, University of Rochester
- **Lee W. Casperson**, Dept. of Electrical Engineering, Portland State University
- **Eric Cornell**, JILA, University of Colorado
- **Robert Byer**, Department of Applied Physics, Stanford University
- **Ron Walsworth**, Harvard Smithsonian Center for Astrophysics, Harvard University
- **Luis A. Orozco**, Physics Department, University of Maryland
- **Christopher Monroe**, Department of Physics, University of Michigan

The DTL Committee members are:

- Rainer Grobe (Chair)
 - Margaret Murnane
 - Ian Walmsley
 - Matt Anderson
 - Elizabeth McCormack
 - Mark Beck
-

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DLS Fellowship Committee

Mark Johnson (Chair), John Sipe, Louis Bloomfield, Jeff Shapiro and Liz McCormack
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The Schawlow Prize Committee

Rainer Blatt (Chair), Roberto Merlin and Marlan Scully

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