Boris Zel’dovich Receives OSA’s Max Born Award

It is with great pleasure that we report that Prof. Boris Zel’dovich of CREOL and the Physics Department was selected to receive the Optical Society of America’s Max Born Award “for his seminal contribution to the discovery and theoretical understanding of optical phase conjugation.” It honors the memory of Max Born who made distinguished contributions to physics in general and optics in particular. The award is very prestigious, and is presented to a person who had made outstanding contributions to physical optics, theoretical or experimental. Past recipients of this award include Roy Glauber of Harvard, Emil Wolf of Rochester, and J.P. Gordon of Bell Labs. It is endowed by the United Technologies Research Center and consists of a silver medal, a certificate, and a $1500 honorarium. It was presented to Prof. Zel’dovich at CLEO. He co-discovered “optical phase conjugation” while at Russia’s Lebedev Physics Institute in 1972. “Optical phase conjugation” is a nonlinear phenomenon in wave propagation which allows distortions introduced into a laser beam by an optical inhomogeneous medium to be “undone” via a process that is essentially the production of a “time reversed wave.” Thus, this technology permits the generation of clean undistorted laser beams when the laser medium is an inhomogeneous one.

Peter Delfyett Receives President’s Award

On December 16, 1996 President Clinton named 60 young independent researchers to receive the first annual Presidential Early Career Award for Scientists and Engineers. This new award, created last year from the Presidential Faculty Fellow Award, recognizes demonstrated excellence and promise of future success in scientific or engineering research, and the potential for leadership in their fields. The candidates were nominated by nine agencies across the federal government and recipients receive $500,000 over a five year period to further their research.

Prof. Delfyett was recognized “for outstanding engineering research contributions in ultrafast optics and photonic technologies.” Prof. Delfyett will use the grant to develop a research and education program for undergraduate and graduate students in engineering and physics, who are interested in optical sciences. The research component will focus on areas of ultrahigh speed
Director’s Corner

The front page of this issue of CREOL Highlights features special recognition of two CREOL faculty — Professors Boris Zel’dovich and Peter Delfyett. I invite all Highlights’ readers to join me in congratulating the two outstanding faculty members for this well deserved recognition. I am proud to be associated with such exceptional scientists and such exceptional gentlemen. Boris’ and Peter’s abilities as scientists are matched only by their love and enthusiasm for teaching. Both are involved in teaching core courses in our Optical Sciences and Engineering program, and teaching and mentoring young children as well.

Also to be congratulated are Professors Glenn Boreman and Kathleen Richardson. Glenn, a “Charter Member” of CREOL, was promoted to Full Professor. Kathleen was recognized as a “Nationally Outstanding Teacher” at the Eighth National Conference on College Teaching and Learning. Like Boris and Peter, Kathleen is active in outreach to K-12 students, and involves undergraduate students in her research.

Our modern culture makes a distinction between the “real world” and the “academic world”. For those of you in the “real world”, this is the middle of the year. For us it is the end of the academic year. This perhaps explains, in part, why this issue of Highlights has a bit of the “feel” of a Christmas Letter, complete with family pictures, boasting about the achievements of family members, and a recounting of our various activities. I would appreciate any feedback regarding the content and format of Highlights. For those of you on email, please send comments to mj@creol.ucf.edu.

Contributing to the “end of the year” feeling is the fact that Professor Martin Stickley left us June 1, 1997, for a new assignment in the US Air Force’s European Office. Martin is being “loaned” to the Air Force via the government’s Interpersonnel Exchange Agreement (IPA) (see the related article in this issue of Highlights). I can’t think of a better person for that job than Martin. We wish him and Dottie the best during their one- to three-year European excursion, however, they will be missed. Martin has done yeoman’s duty during his tenure as Associate Director of CREOL. Among his many accomplishments were organizing and administering our Industrial Affiliates program, editing Highlights, leading our laser radar activity, planning and executing our move into the new CREOL building, providing leadership in developing the CREOL administrative support structure, arranging our Partnership days and many CREOL tours and open houses, pushing and prodding us all to meet deadlines, and more or less doing all those administrative functions that I did not want to (or could not) do. Thanks Martin for a job well done...and come back soon!

Thanks to the many people that communicated support for CREOL’s quest to become an independent academic unit of the University. The debate has given us an opportunity to better articulate CREOL’s mission, goals, and progress. We feel that the argument is strong and that we have appropriately addressed all concerns and questions regarding the proposed change. I hope that the front page of the next issue of Highlights will contain an announcement that our request has been granted.

Faculty News

Dr. Glenn Boreman received his promotion to Professor of Engineering on 25 March 1997. Boreman joined the faculty of the Electrical Engineering Department in August 1984.

Dr. Martin Stickley, Associate Director of CREOL, joined the U.S. Air Force’s European Office of Aerospace Research and Development (EOARD) in London, England on June 1, 1997 for a two year tour as a Research Liaison Officer. He is responsible for identifying and assessing laser and optics technologies found in Europe, the Former Soviet Union, the Middle East and Africa for the Air Force’s Lasers and Imaging Directorate at the Phillips Lab in Albuquerque, New Mexico, and materials technology for the Materials Directorate at the Wright Lab in Dayton, Ohio. He will also assist in arranging for visits by foreign scientists to Air Force laboratories; visits by Air Force scientists to non U.S. labs; cooperative agreements between Air Force labs and foreign research institutes, and sponsorship of conferences held in those countries. He joins EOARD via an Interpersonnel Exchange Agreement (IPA) between the U.S. Air Force and UCF. He can be reached at mstickley@eoard.af.mil.

Dr. William Silfvast, CREOL faculty member and Professor and Chair of the UCF Physics Department, will take a sabbatical leave from UCF starting in August 1997 and join the Sandia National Laboratory at Livermore, CA to develop a lithium plasma discharge source for EUV lithography.

Dr. Kathleen Richardson received the Award for Innovative Excellence in Teaching, Learning and Technology from The Center for the Advancement of Teaching and Learning.
Seminar Presentations:


N.A. Riza, "Seminar on 3-D photonics systems for controlling ultrasonic phased array systems," at the Dept. of Biomedical Engineering, Duke University, Durham, NC, (April 18, 1997).


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CREOL Affiliates*

Anvik Corporation
Hawthorne, New York

Analog Modules, Inc.
Longwood, Florida

Artificial Reality
Vernon, Connecticut

Control Laser
Orlando, Florida

Crystal Photonics, Inc.
Orlando, Florida

Hewlett Packard
Palo Alto, California

Laser Ionics
Orlando, Florida

Lasergenics
San Jose, California

Lee Laser, Inc.
Orlando, Florida

Lightning Optical Corp.
Tarpon Springs, Florida

Lockheed Martin Electronics
Orlando, Florida

MIT
Cambridge, Massachusetts

Manasota Optics
Sarasota, Florida

Melles Griot, Inc.
Auburn, Massachusetts

NEC
Tokyo, Japan

NEOS Technologies
Melbourne, Florida

OSMIC, Inc.
Saxburg, Pennsylvania

Photon Data, Inc.
Winter Park, Florida

Photonic Systems, Inc
Melbourne, Florida

Quantum Technology
Lake Mary, Florida

Robins, Kaplan, Miller & Ciresi L.L.P.
Minneapolis, Minnesota

Schwartz Electro-Optics Inc.
Orlando, Florida

Sensor Physics
Oldsmar, Florida

Semiconductor Research Corp.
Durham, North Carolina

Sola Group (Pilkington)
Menlo Park, California

Spectra-Physics Lasers
Mountain View, California

Thomson-CSF Optronique
France

Tony Johnson Associates
Apopka, Florida

Ultrafast Systems, Inc.
Longwood, Florida

Virgo Lighting Optical Corp.
Port Richie and Tarpon Springs, Florida

Willson Eyeware
Lakeland, Florida

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CREOL Highlights

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C.M. Stickley, Associate Director
Noreen Hodapp, Graphic Design

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* - A CREOL Affiliates Program application form can be obtained from Sharon Cruz at 407-823-6986.
### New CREOL Contract and Grant Awards

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<th>PI</th>
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<td>All in One Laser Rod (AOLR) Project</td>
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<td>Controlled Pulse Duration Lasers</td>
<td>Lawrence Livermore National Lab</td>
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<td>Bass</td>
<td>Consultation and Support for Diode Pumped ND</td>
<td>Schwartz Electro-Optics</td>
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<td>Boreman</td>
<td>Magnetorheological Fluid Structural</td>
<td>University of Rochester</td>
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<td>Boreman</td>
<td>Precision Closed Loop Control of Optical Beam</td>
<td>Visidyne, Inc.</td>
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<td>Single Crystals for High Average Power SS Lasers</td>
<td>DOD/Army/ARO</td>
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<td>ARL Adelphi Site Contracts Brch.</td>
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<td>Delfyett</td>
<td>All Optical Clock Recovery for High Speed...</td>
<td>DOD/AF/Rome Lab</td>
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<td>Optical Amplifiers Based on Vibronic Transitions</td>
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<td>Final Construction &amp; Operation of a Continuous FEL</td>
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<td>Spectral Filters for 300nm Writing in PTR Glasses</td>
<td>Accuwave Corp.</td>
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<td>Interactive Design Software for Diode-Pumped...</td>
<td>Decade Optical Systems, Inc.</td>
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<td>Improved Chemical Oxygen-Iodine Laser (COIL)...</td>
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<td>All-Optical Binary Flip-Flop Gate for Photonic...</td>
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<td>Femtosecond Laser Plasma Studies at 100TW Level</td>
<td>Universite Laval</td>
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<td>Photonic Time Delay Beamforming for Aegis Radar</td>
<td>DoEnergy</td>
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<td>Technical Mgmt. Concepts Inc.</td>
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<td>University of Puerto Rico</td>
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**TOTAL** $3,668,261