member profile

born to teach

Glenn Boreman shares his love of classical optics with students and engineers.

By Sharon Streams

Glenn Boreman was born to teach. Fortunately for students and electro-optical engineers, he has spent his professional life doing just that. “I enjoy seeing the light bulb switching on over the student’s head,” he says.

But teaching is only one facet of this man. In addition, Boreman is an active researcher. As technical leader of the Infrared Systems Laboratory at University of Central Florida/CREOL (UCF/Center for Research and Education in Optics and Lasers; Orlando, FL), he and his staff of seven continuously work on design, test, and fabrication—the so-called “three-legged stool”—of IR detectors and systems. He constantly revamps his course material to reflect the new research and applications, as well as the shift in focus driven by industry. “I must have taught 15 different classes during my 14-year tenure at UCF,” Boreman says.

One of his courses has become a classic: “Basic Optics for Engineers,” which has also been a staple at SPIE meetings for many years. Boreman also presents the material at in-company training sessions worldwide (the accompanying tutorial text and video have even been translated into Spanish by Javier Alda of Complutense University of Madrid).

Boreman’s dedication to teaching is coupled with his early and unwavering decision to study optics. At age 16, he visited the Institute of Optics at the University of Rochester (U of R; Rochester, NY) and decided on the spot to make optics his career. He received his bachelor’s degree from U of R and then headed to the University of Arizona (U of A; Tucson, AZ) for his Ph.D. It was at the U of A where the native New Yorker discovered his love of warm weather. During his time there, he also made many excursions to the Caribbean and Latin America, eventually visiting two-thirds of the states in Mexico. In 1984 the desire to teach optics in a temperate climate led Boreman to Orlando and UCF, where he has resided and worked ever since.

He has watched the university more than double in size, from 15,000 to 34,000 students, and he was there for the 1985 establishment of CREOL. Though he enjoys the balmy climate of Florida, Boreman takes the opportunity to travel during the summers to England, Switzerland, Spain, or Sweden as a visiting scholar. “My time in Europe is my time to think,” he says simply. In other words, the teacher becomes student for a while.

Boreman is a prolific published writer who has authored and coauthored several textbooks, monograph chapters, and more than 100 articles. He also edited a popular CD-ROM of Selected Papers on Infrared Technology (2000, SPIE Press). His most current book is Modulation Transfer Functions in Optical and Electro-Optical Systems (2001, SPIE Press). For 10 years, Boreman has been editor-in-chief of Applied Optics. Though the job can sometimes be harrowing (such as “when those faxes of 35 new submissions come rolling in on a Friday,” he says), Boreman enjoys the opportunity to read the hot new research coming down the wire. A Fellow of SPIE and OSA, he also served on SPIE’s board of directors from 1997 to 1999.

For several years Boreman has lived on a spacious homestead in central Florida with his wife, Maggie, their son, Eddie, two horses, a cat, and three dogs, including Buddy, Boreman’s best friend and trail-walking partner. He originally met Maggie while at U of A, where she was a technical editor for the Optical Sciences Center. They became reacquainted years later and married, with Eustance Dereniak serving as best man. Maggie has copy-edited all of Boreman’s books, and he has learned an important rule of publishing: “Never argue with your editor.”

Sharon Streams is senior editor of the SPIE Press.
SPIE Fellows awarded for contributions to optics

The Optical Society of America (OSA) has given awards to the following SPIE Fellows for their contributions to the field of optics:

Douglas S. Goodman was awarded the Esther Hoffman Beller Award for outstanding contributions to optical science and engineering education, including advanced research in image formation, machine vision, metrology, photolithography, alignment, and fingerprint imaging.

Duncan T. Moore was awarded the OSA Leadership Award/New Focus Prize, which recognizes a person or group of optics professionals who had significant impact on the field of optics or made a significant contribution to society. Moore is being recognized for his technical, educational, and service contributions to the worldwide optics community and to the public-policy arena while an associate director for technology in the White House Office of Science and Technology Policy.

Federico Capasso was awarded the R.W. Wood Prize for outstanding invention in the field of optics. Capasso made seminal contributions to the invention, demonstration, and development of the quantum cascade laser, which is revolutionizing the field of infrared lasers and their applications.

Warren J. Smith was awarded the Joseph Fraunhofer Award/Robert M. Burley Prize for significant accomplishments he has made to optical engineering in his 55-year career in optics, including work on the Manhattan Project, pioneering the use of computers for optical design, and designing almost every type of lens and optical system.

SPIE and OSA develop optics education program to address work-force shortages

By Janice Gaines Walker

Acknowledging the need to aggressively respond to optics work-force shortages, SPIE and OSA have initiated an effort to leverage education expertise and resources. The two societies hosted an education planning workshop— the first of its kind— on 29 July during SPIE’s 46th Annual Meeting in San Diego, CA.

This workshop is the first of a series aimed at developing a comprehensive education initiative to address the needs of the optical science and engineering community. Workshop participants included 22 optical-engineering and science professionals with expertise in education at all levels, underrepresented minorities in science and engineering, industry stakeholders, and SPIE and OSA staff. Participants were asked to develop recommendations for a blueprint that will be used to guide an optics education program to be carried out by SPIE and OSA.

SPIE and OSA sponsor numerous projects and services that promote teaching and that raise the visibility of optics and optical engineering as a course of study and as a career. Generally, these education efforts reach formal classrooms and schools, as well as the ethnic and gender groups who traditionally make up the science and technology workforce. The areas in which the societies have not been as active are informal science education and education that targets minorities in science and technology.

To fill these gaps, the societies will pursue the following education goals, which were the focus of the planning workshop:

• Increase science and technology literacy for the public, with special understanding of optics as an integrated area of knowledge that crosses numerous disciplinary fields.
• Target underrepresented groups in science and technology.
• Raise awareness of career options and development in optics.

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SPIE officers and directors elected for 2002

SPIE’s 2001 election results were announced at the society’s annual general membership meeting. Term of office begins 1 January 2002.

Officers elected for the 2002 term:
- President: James A. Harrington, professor, Ceramic and Materials Engineering, Fiber Optic Materials Research Program, Rutgers University, Piscataway, NJ.
- Vice President: Anthony J. DeMaria, chief scientist, Laser Division, Coherent DEOS, Bloomfield, CT.
- Secretary: Malgorzata Kujawinska, professor, Warsaw University of Technology, Warsaw, Poland.
- Treasurer: Dean T. Hodges, director, business development, Laser Group, Melles Griot, Carlsbad, CA.

Directors elected for a three-year term beginning in 2002:
- Arthur E. Chiou, professor and chairman, electrical engineering department, The Institute of Electrical Engineering, National Dong Hwa University, Hualien, Taiwan.
- Robert A. Fisher, owner and president, R.A. Fisher Associates, Santa Fe, N.M.
- Carmiña Londoño, standards specialist, Office of Standards Services, NIST, Gaithersburg, MD.
- Hans Tiziani, professor, University of Stuttgart, Germany.

Janice Gaines Walker is SPIE’s director of education services.

industry sponsorships enhance SPIE’s on-site student programs

TRW Space & Electronics (Cleveland, OH), a communications systems engineering organization, demonstrated its commitment to education as the major sponsor of SPIE’s first scholarship and grant awards ceremony and student reception at the society’s annual meeting in San Diego, CA, 29 July to 3 August. With TRW’s support, the ceremony and reception honored 15 outstanding young people, as well as representatives of several optics programs, who received the society’s highest educational awards. Approximately 100 people attended, including recipients, their families, and members of SPIE leadership. Support from sponsors such as TRW Space & Electronics allows SPIE to enhance its student programs and encourage and increase student participation in the society and in optics fields. Other companies have also sponsored SPIE’s student programs. Coherent Auburn Division (Auburn, CA) funded the student reception held at the AeroSense conference in early April. Coherent has an ongoing commitment to education (see oemagazine, July 2001, page 37) and has also donated materials for SPIE’s educational work.

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### Education

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- 2001 ICO Galileo Galilei award winner Kehar Singh of India
- ICO awards 2002: call for applications
- News from ICO members: New Bureau for Academia Mexicana de Optica
- List of forthcoming events with ICO Participation:
  - ICO XIXth general meeting in Florence, Italy, August 2002
  - Photociencias 2002, La Habana, Cuba, January-February 2002
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