

ELECTRICAL & COMPUTER ENGINEERING DEPARTMENT

ANNUAL REPORT SUMMARY

2008-2009

UNDERGRADUATE EDUCATION

The Electrical & Computer Engineering (ECE) department offers undergraduate degrees in Electrical Engineering (EE), Computer Engineering (CompE, offered jointly with the Computer Science & Engineering Department), and Engineering Physics (jointly with the College of Liberal Arts & Sciences). In Fall 2008, 149 students were enrolled in Electrical Engineering, 44 in Computer Engineering, and 5 in Engineering Physics. During the academic year, we awarded 33 B.S.E. degrees in EE, 11 degrees in CompE, and two in Engineering Physics.

RESEARCH AND SCHOLARSHIP

The ECE faculty conducts funded research in fields including systems and energy, communications and signal/image processing, biomedical engineering, microelectronics, photonics and optoelectronics, electromagnetics, nanotechnology, VLSI, computer engineering, and homeland security. Scholarly productivity stimulated by research is strong. The faculty published numerous papers, including 92 refereed journal articles, 11 book chapters, and 155 full conference proceedings papers. They developed 2 software packages, offered many professional short courses, were keynote speakers at 11 international conferences, and delivered 61 invited talks. The faculty worked on 104 sponsored grants with annual expenditures estimated to be \$3.8 million. During the year, the ECE faculty advised 141 graduate students; of these, 6 successfully completed their Ph.D. degrees and 24 students garnered their M.S. degrees. Geoffrey Taylor was awarded 3 patents; Anthony DeMaria, Krishna Pattipati, Peter Willett and Shengli Zhou secured one each.

FACULTY HONORS

ECE faculty members received several prestigious awards. Shengli Zhou became the first recipient in the School of Engineering of the Presidential Early Career Award for Scientists and Engineers (PECASE). He also received the UTC Professorship in Engineering Innovation Award. Mohammad Tehranipoor received the National Science Foundation (NSF) Career Award and the 2008 IEEE Computer Society Meritorious Service Award. Two faculty members hold endowed chairs: Yaakov Bar-Shalom is the Marianne E. Klewin Endowed Professor in Engineering and Peter Luh is the SNET Professor of Communications & Information Technologies. Yaakov Bar-Shalom and Bahram Javidi are Board of Trustees Distinguished Professors.

The faculty members are also leaders in many professional societies/organizations. Yaakov Bar-Shalom, Steven Boggs, Anthony DeMaria, John Enderle, Bahram Javidi, Peter Luh, Krishna Pattipati, Geoffrey Taylor and Peter Willet are IEEE Fellows. John Enderle and Bahram Javidi are American Institute for Medical and Biological Engineering Fellows. Anthony DeMaria and Bahram Javidi are Optical Society of America Fellows. Anthony DeMaria, Eric Donkor, Bahram Javidi are SPIE Fellows. John Enderle is an American Society of Engineering Education Fellow. Rajeev Bansal is a Fellow of the Electromagnetics Academy. Anthony DeMaria is a Fellow of the American Physical Society.

Monty Escabi was inducted into the Connecticut Academy of Science and Engineering (CASE), joining faculty members Rajeev Bansal, Yaakov Bar-Shalom, Anthony DeMaria (who is a co-founding member), Eric Donkor, John Enderle, Faquir Jain, Bahram Javidi, Peter Luh, Krishna Pattipati, Geoffrey Taylor and Quing Zhu. Anthony DeMaria is a member of the National Academy of Engineers and the

National Academy of Sciences. During 2008-2009, ECE faculty members held 7 major journal editorships, 22 associate editorships or conference chair posts, and 31 other editorial or conference-planning appointments. In particular, Mehdi Anwar, Yaakov Bar-Shalom, John Enderle, Bahram Javidi, Peter Willett and Quing Zhu were Editors-in Chief while Mehdi Anwar, John Chandy, John Enderle, Faquir Jain, Bahram Javidi, Peter Luh, Mohammad Tehranipoor, Lei Wang and Peter Willett served as Editors and/or Associate Editors of professional journals.

Congratulations to Shengli Zhou who received promotion and tenure to associate professor.

Also, congratulations to Mehdi Daneshpanah, ECE Ph. D. graduate student, for receiving the 2008 IEEE Lasers & Electro-Optics Society (LEOS) Graduate Student Fellowship Award.

INDUSTRIAL CONNECTIONS

The Department has a vibrant Industrial Advisory Board (IAB) providing vital input on curricula, courses, and strategies. Industrial feedback is essential in maintaining high-quality, relevant programs and is a major link in the ABET accreditation process. Additionally, the affiliated companies participate in collaborative research, sponsor senior design projects, provide internship opportunities for our students, and often hire them permanently. The companies represented on the IAB this year are Aptima, ARRIS Access and Transport, BAE Systems, Coherent, General Electric Company, Hamilton Sundstrand, The Hartford, ISO New England, JDS Uniphase, Naval Undersea Warfare Center, Pfizer, Phonon Corporation, Pratt & Whitney, Sikorsky Aircraft Corporation, Silicon DFX and Toyota Technical Center USA. The Department is also active in collaborative research and development projects with many other companies.

STUDENT ACTIVITIES

The UConn student branch of the Institute of Electrical & Electronics Engineers (IEEE) organized many professional, service, and social activities for the engineering community. The student branch hosted two professional seminars. Michael Bozzi gave a presentation on the RPI international scholars program and Krenar Jusufi (ASML) spoke about new lithography technologies. Each semester a well-attended barbecue-style picnic served to advertise and promote IEEE and to gather faculty and students together. The branch also elected new officers. The IEEE student branch advisor is Dr. Ali Gokirmak

UConn's chapter of The International Society of Optical Engineering (SPIE) was established in April 2006. Its goal is to promote the discipline of Optical Science and Engineering through the organized effort of this group and to further the professional development of its members. During the past academic year we had a distinguished seminar on Photoacoustic Imaging given by Prof. Andreas Mandelis from the University of Toronto. Professor Quing Zhu is the faculty advisor for the chapter.

UConn's chapter of Eta Kappa Nu (HKN) inducted 7 new members during 2008-2009 and elected new officers in the spring semester. The chapter cosponsored a number of activities during the year with the student branch of the IEEE. Professor Monty Escabi is the faculty advisor for the chapter.

ECE Personnel Changes

After serving the ECE department diligently for over ten years, Barbara Zlotnick retired June 1st. At the same time, after completing his three-year term, ECE Department Head Peter Luh stepped down and will be on sabbatical for a year working at National Taiwan University and United Technologies Research Center. ECE Associate Head Rajeev Bansal will be taking the reins as Department Head on July 1 and will be supported by the new Associate Head John Chandy.

