

ELECTRICAL & COMPUTER ENGINEERING DEPARTMENT

ANNUAL REPORT SUMMARY

2013-2014

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 (EGPHY, offered jointly with the College of Liberal Arts and Sciences). Fall 2013 undergraduate enrollments were: 247 students in the EE program, 50 students in the CompE program, and 10 students in the EGPHY program. During the academic year 2013-2014, we awarded 50 B.S.E. degrees in EE, 11 in CompE, and 7 in EGPHY.

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 security. Scholarly productivity stimulated by research is strong. The faculty publications included approximately 155 refereed journal articles, 11 book chapters, and 276 full conference proceedings papers. ECE faculty members offered many professional short courses, were keynote speakers at 7 international conferences, and delivered 52 invited talks. The faculty worked on 139 sponsored grants with annual expenditures of \$5.7 million. During the year, the ECE faculty advised 149 graduate students; of these, 14 successfully completed their Ph.D. degrees and 24 students (including those in Clinical Engineering advised by Dr. Enderle) garnered their M.S. degrees. Drs. Faquir Jain and Sung Yeul Park were each awarded one patent. Drs. Mark Tehranipoor and Shengli Zhou each authored one book.

FACULTY HONORS

ECE faculty members received several prestigious awards. Dr. Shengli Zhou was elected a Fellow of the IEEE (the Institute of Electrical and Electronic Engineering). He is also co-director of the Underwater Sensor Network Lab (UWSN). Dr. Krishna Pattipati was named the Interim Director of the UTC Institute for Advanced Systems Engineering. The Center for Hardware Assurance, Security, and Engineering (CHASE) and Comcast have come together to create a new cybersecurity research program. Dr. Mark Tehranipoor is the director of the partnership called the Comcast Center for Excellence for Security Innovation.

Mark Tehranipoor was promoted to full professor.

Drs. Yaakov Bar-Shalom and Bahram Javidi are Board of Trustees Distinguished Professors. Our endowed chairs include Dr. Yaakov Bar-Shalom, who is the Marianne E. Klewin Endowed Professor in Engineering, Dr. Peter Luh, who is the SNET Professor of Communications & Information Technologies and Dr. Krishna Pattipati, who is the United Technologies Corporation Chair in Systems Engineering. Dr. John Chandy is the UTC Associate Professor & Associate Head, Dr. Mark Tehranipoor is the Charles H. Knapp Associate Professor in Electrical Engineering, and Dr. Lei Wang is the Castleman Term Associate Professor in Engineering Innovation.

ECE faculty members are also leaders in many professional societies/organizations. Drs. Anthony DeMaria, Eric Donkor, Faquir Jain, Bahram Javidi and Quing Zhu are SPIE Fellows; Drs. Yaakov Bar-Shalom, Steven Boggs, Anthony DeMaria, John Enderle, Bahram Javidi, Peter Luh, Krishna Pattipati, Geoffrey Taylor and Peter Willett are IEEE Fellows; Drs. John Enderle and Bahram Javidi are American Institute for Medical and Biological Engineering Fellows; Drs. Anthony DeMaria and Bahram Javidi are Optical Society of America Fellows; Dr. John Enderle is an American Society of Engineering Education

Fellow; Dr. Rajeev Bansal is a Fellow of the Electromagnetics Academy; and Dr. Anthony DeMaria is a Fellow of the American Physical Society as well as a member of the prestigious National Academy of Engineers.

Drs. Mehdi Anwar, Rajeev Bansal, Yaakov Bar-Shalom, Anthony DeMaria (who is a co-founding member), Eric Donkor, John Enderle, Monty Escabi, Faquir Jain, Bahram Javidi, Peter Luh, Krishna Pattipati, Geoffrey Taylor, Shengli Zhou and Quing Zhu are elected member of the Connecticut Academy of Science and Engineering (CASE). During 2013-2014, ECE faculty members held several conference chair posts and numerous positions on the editorial boards of journals.

INDUSTRIAL CONNECTIONS

The Department has an engaged Industrial Advisory Board (IAB), providing vital input on our curricula, recruitment, 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, Coherent, Comcast, GE Corporate Financial Services, GE Consumer & Industrial Technology, Hamilton Sundstrand, ISO New England, JDS Uniphase, Naval Undersea Warfare Center, Northeast Utilities, Phonon Corporation, Pratt & Whitney, SAVANT, Sikorsky Aircraft Corporation, and Silicon DFX. The Department is also active in collaborative research and development projects with many other companies.

GRADUATE STUDENT AWARDS

Zhaohui Wang, who obtained her Ph.D in May 2013, was selected as the outstanding women scholar from the UConn Graduate School. Sherwin Li received the 2013 US Department of Energy Building Innovators Award and Shu Wan received the 2013 Connecticut Energy Foundation Scholarship. The fall 2013 recipients of the ECE Outstanding Teaching Assistant Award were Alireza Ghahari and Nicholas Williams and the spring 2014 awardees were Azer Faraclas and Joshua Ivaldi.

STUDENT ACTIVITIES

The UConn student branch of the Institute of Electrical and Electronics Engineers (IEEE) organized several educational and professional activities in the past two semesters. Their general meetings were geared toward increasing enrollment and visibility. The officers held Microsoft application development courses and programming microcontrollers workshops. They engaged other undergraduate students by holding general electronic applications classes and solder workshops as well as tutoring sessions. The branch is advised by Prof. Ali Gokirmak. The SPIE UConn chapter sponsored several seminars throughout the academic year. The speakers hosted were from Menlo Systems, University of Colorado, Lockheed Martin and GE Global Research. The chapter is co-advised by Profs. Faquir Jain and Quing Zhu.

ECE PERSONNEL CHANGES

Jeannette Burke is the new Administrative Services Specialist, working for CHASE, who joined our ECE staff in August 2013.