

Spring Graduating Class Shares Some Thoughts from their time in EE

The spring graduating class was asked to share their plans following graduation and some memories of classes. The following is a sample. (I didn't include student names because some wanted them included while others didn't.)

Graduation Plans

Jobs: U.S. Air Force developmental engineering officer
IBM in my area of focus
ArcelorMittal
PPL Susquehanna Steam Electric Station as a design engineer
ATI Allegheny Ludlum, a specialty metalics company
Raytheon BBN Technologies in their Cyber Security division
Westinghouse Electric Company
Alabama Power part of the Southern Company in protection and controls

Moving from the area

Getting married

Attending graduate school

Looking for a full-time position

My most memorable EE class

EE 477 - Fundamentals of Remote Sensing Systems. **Professor Tim Kane** did an excellent job of challenging students to think and made the class enjoyable and very informative.

EE 310 - Electronic Circuit Design I. **Professor Mark Wharton** was a great teacher. Also, it was after that class that I started to feel like an EE degree was worth something.

EE 387 – Energy Conversion. Interesting

EE 454 – Fundamentals of Computer Vision. I took this class with **Professor Bill Higgins**. He inspired me a great amount over that semester. The intensive project and assignment schedule has given me a lot of experience.

Hands-down, some of my most vivid memories come from the EE 441- Semiconductor Integrated Circuit Technology class with **Dr. Jerzy Ruzyllo**. His lectures were entertaining, but the hands on experience in the semiconductor fabrication lab was awesome. I have been asked to give a few guest lectures at my high school to promote engineering and the sciences, and the stories from that class connect well with students--especially when I show them the actual wafers we made in class!

My most memorable EE class was my first power course: EE 387 Energy Conversion, with **Professor Jeff Mayer**, in the fall of 2011. – In the summer of 2010, I had an internship with Westinghouse in their Rotating Equipment Services Group. During the internship, I was attempting to model the flux density and thermal capacities within a specific rotor and stator design (using Quickfield modeling software); however this was a very large task at the time considering I did not have a previous understand of the mechanics or physics of motors. When I was taking EE 387, I was able to directly relate my newfound knowledge to my internship – it was quite an amazing revelation and it clarified what my interests were within the EE field and where I wanted to focus my potential career path.

EE 310 - Electronic Circuit Design I in the Spring 2011 with **Professor Jack Mitchell**. Several of us students formed a small study group that lasted beyond this class, up to graduation. Plus, you can't beat Dr. Mitchell's lectures with their light, fun atmosphere.

Tell any professor there is a 'Matlab app', and you can see the curiosity and child-like joy form within their eyes - true story.



IEEE Student Chapter Ends Academic Year

IEEE Student chapter was awarded the 2012 Best New Student Organization by the Office of Student Activities. This award recognizes student organizations which have made a positive contribution to the campus community and/or their membership within the past year.



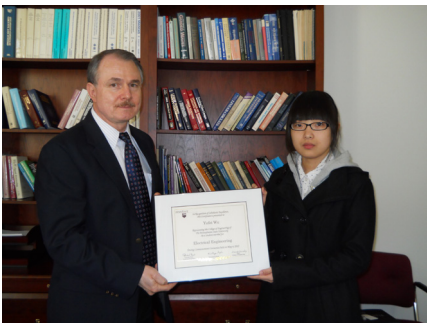
From left, Mostafa Sahraei-Ardakani, Ravender Virk, Matt Franco, Erik Bergstrom, and Keegan McCoy.

Our Penn State IEEE students participated in the IEEE Region 2 Student Activity Conference at Ohio State in April. Our student chapter won best paper and best T-shirt design.

Senior Design Showcase

Two teams with electrical engineering students won awards at the Spring 2012 Project Design Showcase. Titled "The Boeing Company 3 – LED Strobe System" and sponsored by Jason Steiner, the team members included electrical engineering students **Peter Gosch**, **Benjamin Haas**, **Patrick Lee**, and **Christina Miceli**. The team won 2nd place in the Lockheed Martin Design Award for Best Project.

Titled "Lincoln Labs/PSU Student Space Programs Lab – Emergency Aerial Communications System" and sponsored by Sven Bilen, the team members included electrical engineering student **Siwei Feng**, mechanical engineering student **Greg Brulo**, and computer engineering students **Ivan Stalev** and **David Zhang**. The team won the Boeing Systems Engineering Award.



Interim department head, Kultegin Aydin, left, and Yufei Wu

Yufei Wu was the student marshal for the Department of Electrical Engineering at the spring commencement. She chose Professor **Suman Datta** as her faculty escort.

College of Engineering student marshals are selected for their outstanding academic achievement and contributions to engineering student life.

NSF Research Dollars

The National Science Foundation recently released 2010 rankings of science and engineering research expenditures. The Penn State electrical engineering department ranked 3 among all private and public universities!

That is up one from a ranking of 4 in 2009.

Award Winners

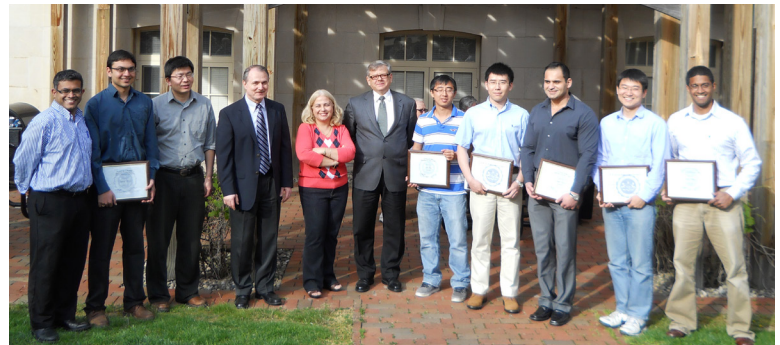
These electrical engineering graduate students received the following awards on April 18.

Melvin P. Bloom Memorial Outstanding Doctoral Research Award in Electrical Engineering – **Dheeraj Mohata** (**Suman Datta**, adviser) and **Kiron Mateti** (**Srinivas Tadigadapa**, adviser)

Nirmal K. Bose Dissertation Excellence Award – **Ye Tian** (**Aylin Yener**, adviser) and **Frank Namin** (**Doug Werner**, adviser)

A.J. Ferraro Graduate Research Award – **Zhihao Jiang** (**Doug Werner**, adviser) and **Chuan Yang** (**Zhiwen Liu**, adviser)

These awards are presented annually and recognize outstanding research in the department of electrical engineering. The six award winners are pictured below with the interim department head and several of their advisers.



Emil Laftchiev, Ph.D. candidate in electrical engineering, won the 2nd place paper award in the College of Engineering Research Symposium on April 5. His paper is titled "Terrain-Based Vehicle Localization From Real-Time Data Using Dynamical Models" and his adviser is Professor **Constantino Lagoa**.

Graduate students **Sonny Smith** and **Jose Ramirez** were selected to receive a Graham endowed fellowship for the 2012-13 academic year. The fellowship, administered by the Graduate School, recognizes students for their achievements to date and their potential for future success.

Kaya Tutuncuoglu, graduate student in Professor **Aylin Yener's** research group, recently received the 2012 AT&T Graduate Fellowship which provides funding and recognition to outstanding graduate students who are conducting research in wireless data application.

Faculty News

In March and April, **Ken Jenkins**, professor of electrical engineering, spent a portion of his sabbatical leave visiting the Department of Electrical and Computer Engineering (ECE) at the University of Texas at San Antonio. He presented the ECE department graduate seminar titled "Arithmetic vs. Algorithmic Fault Tolerance for Highly Scaled VLSI Signal Processors."

In March, **Jenkins** participated in the IEEE-HKN Advisory Board meeting that was held in Austin, TX, in conjunction with the annual meeting of the Electrical and Computer Engineering Department Heads Association.

In April, **Jenkins** served on a National Science Foundation review panel that met in Arlington, VA, to evaluate research proposals in the area of digital signal processing.

A U.S. patent, titled Mist Fabrication of Quantum Dot Devices, was granted to **Jerzy Ruzyllo**, distinguished professor of electrical engineering, **Jian Xu**, associate professor of engineering science and mechanics and two graduate students.

In June 2012, under the sponsorship of European Union Development Program, **Jerzy Ruzyllo**, distinguished professor of electrical engineering, will conduct series of workshops on semiconductor science and engineering at the Warsaw University of Technology and Crakow University of Technology in Poland.

Raj Mittra, professor of electrical engineering, presented a talk titled "The Magic of Electromagnetic Cloaking—Is It for Real?" to the IEEE and IET student groups at King Fahd University of Petroleum and Minerals in Saudi Arabia in April. He also presented a plenary talk titled "Design and Analysis of Optical and Microwave Antennas: Is It Simply a Matter of Scaling?" and a second talk titled "A New Approach to Designing Absorbers for Arbitrary Scatterers by Using the Transformation Optics" in Paris, France for the Advanced Electromagnetics Symposium in April.

Raj Mittra, professor of electrical engineering, presented two talks titled "Small and Non-Foster Antennas—A Review" at Harbin Engineering University in Harbin, China in May.

Mittra presented a talk titled "Some New Developments in Finite Difference Time Domain Method for Solving Multi-scale Problems" at Shanghai Jiao Tong University in Shanghai, China.

Mittra presented a keynote speech titled "A Critical Look at Transformation Optics Approach to Designing Cloaks, Superlenses and Directive Antennas for Microwaves and Millimeter Waves using Metamaterials" and a second talk titled "A New Computationally Efficient Technique for Modeling Periodic Structures with Applications to EBG, FSSs and Metamaterials" at the International Conference on Microwave and Millimeter Wave Technology in Shenzhen, China.

Qiming Zhang, distinguished professor of electrical engineering, has been awarded a QianRan Professorship at Tsinghua University in China. The position provides opportunity for him to conduct research in Tsinghua University.

Noel (Chris) Giebink received the DARPA Young Faculty Award in May. This award identifies and engages rising research stars in junior faculty positions and provides an opportunity to for them to understand the Department of Defense needs and DARPA's program development process.

Iam-Choon Khoo, W. E. Leonhard Professor of Electrical Engineering, presented a plenary talk titled "Liquid-Crystals-Plasmonics for Next Generation Electro- and Nonlinear Optics" at the Liquid Crystal Photonics Symposium in Guilin, China in March, and an Invited talk on "Active Plasmonics and metamaterials" at the "Metamaterials Conference" in Paris, France in April. Both work are supported by the Air Force Office of Scientific Research.

Mohsen Kavehrad, W. L. Weiss Chair Professor of Electrical Engineering, presented a talk titled "Creating High-Bandwidth Islands – A Solution to the Current Mobile Radio Spectrum Crunch" at the Royal Military College in Ontario, Canada in March.

Mohsen Kavehrad, W. L. Weiss Chair Professor of Electrical Engineering, presented a talk titled "Optical Wireless Applications" for Northrop Grumman Electronic Systems in Baltimore, MD in May.

The Center on Optical Wireless Applications held its first industrial advisory board meeting in May on the University Park campus. This was the first meeting to discuss the potentials of the interdisciplinary research center, providing leadership to develop new generation of environment-friendly, extremely wideband optical wireless technology applications, employing solid-state devices for communications, networking, imaging, positioning and remote sensing.

The primary goals of this center are to initiate formal partnerships with various industry partners and research laboratories that have an interest in optical wireless applications designs, and to discuss fundamental issues and topics for research.

The center, directed by **Mohsen Kavehrad**, W.L. Weiss Chair Professor of Electrical Engineering, is a joint project with Georgia Institute of Technology and is funded by the National Science Foundation.

Retirements



Fawn Houtz, clean room staff lab coordinator, retired at the end of April. Houts had been employed at the university since 1990.

Lloyd Peterson, supervisor of engineering labs, will retire this summer. Peterson had been employed at the University since 1983.



Milestones



Congratulations to **Sal Riggio** on marking 10 years with Penn State in May.

Promotions

Congratulations to **Julio Urbina** on being promoted to Associate Professor with tenure effective July 1, 2012. Urbina received his Ph.D. from the University of Illinois and joined Penn State in 2006.



Congratulations to **Theresa Mayer** on her promotion to distinguished professor. Mayer received her Ph.D. from Purdue University and joined Penn State in 1994.

PARSONS

Thank you to Parsons for sponsoring the spring graduation reception.



IEEE student chapter held their annual K-12 robotics competition for Central PA



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