COLLEGE OF ENGINEERING

DEPARTMENT OF ELECTRICAL ENGI-

PENNSTATE

Electronic Newsletter / Sept Oct 2013 / www.ee.psu.edu

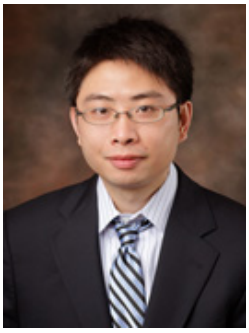
Did you know . . .

We are now listing the new research grants that our faculty receive on the front page of the website? You can view the website here.

New Faculty Members

We welcome two new faculty members this fall.

Ahmad Mirzaei, Charles H. Fetter Associate Professor of Electrical Engineering, received his bachelor's and master's degrees in electrical engineering from Sharif University of Technology in Iran and his doctorate in electrical engineering from the University of California, Los Angeles. Prior to joining Penn State, Mirzaei was a senior principal scientist at the advanced RF research and development department at Broadcom Corporation, a leading semiconductor company for wired and wireless communications. He worked on the development of the future generation of fully-integrated low-power and multi-band radios from concept to production. He also contributed to a few high-volume wireless products during his seven-year long tenure at Broadcom. He is an author or coauthor of numerous research publications and patent applications in the field of RF-CMOS. He is a senior member of IEEE. His research efforts will be focused in the area of electronic circuits and systems.



Minghui Zhu, Dorothy Quiggle Assistant Professor of Electrical Engineering received a bachelor's in mechanical engineering and automation from Zhejiang University in China, a master's in mechanical and automation engineering from the Chinese University of Hong Kong and a doctorate in mechanical and aerospace engineering from the University of California, San Diego. Prior to joining Penn State, Dr. Zhu spent two years as a postdoctoral associate in the Laboratory for Information and Decision Systems at the Massachusetts Institute of Technology. His research interests lie in the design, analysis and control of multi-agent networks with applications in multi-vehicle networks, transportation networks and the smart grid.

Mentoring Program

Entering it's fourth year, the department mentoring program connects future engineers with professionals who can help them succeed in their academic and professional lives. The program has grown from 85 alumni-student pairs the first year to 183 alumni-student pairs this year. Thank you so much to all of the alumni who participate to make this program so successful.

The benefits of an alumni-student mentoring program are immeasurable. Students have the unique opportunity to forge personal relationships with professional engineers who were once students themselves. Students may ask curriculum and career-oriented questions, observe the professional work environment, and learn more about how specific companies and industries operate. Students receive career guidance, professional resources, words of encouragement, and worthy advice on important issues affecting their chosen major. Students' time management, communication, decision-making, and critical-thinking skills are enhanced through a mentoring relationship. In addition, students who seize the opportunity to pair with an alumni mentor often build stronger connections to their College and their University.

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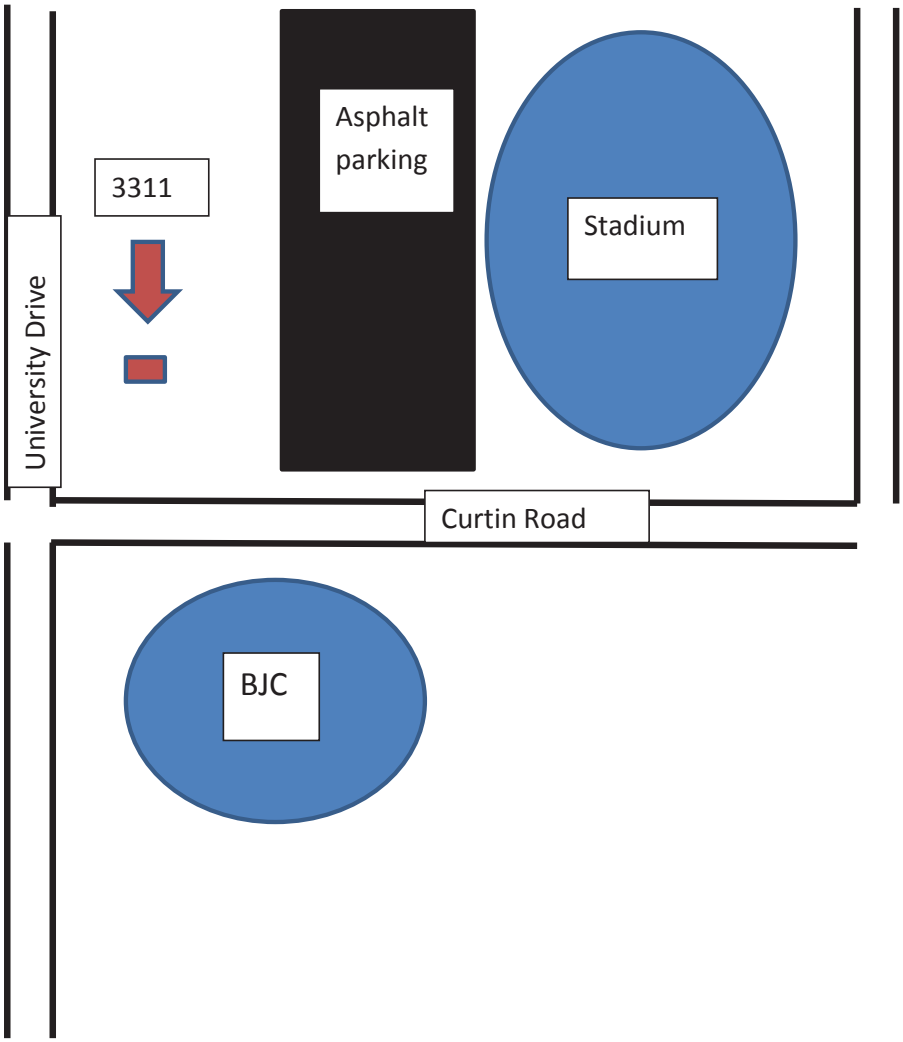
Electrical Engineering Tailgate



Penn State v. Michigan

Oct. 12

1:00 p.m. - 4:30 p.m.

RV space 3311

This is near the location of last year's tailgate. It is west of the stadium in the grass lot.

We'll have a white tent (that looks just like everyone else's white tent), a tan tent and a white SUV.

Food and soda/water will be provided.

Register here on our website. You don't have to register to attend, but it would help with the planning.

Everyone is welcome!

I will have electrical engineering golf shirts available for anyone to purchase.

$30 - Mens sizes: medium, large, and X-large AND 2XL. Quantities are limited. Make checks payable to Penn State IEEE student chapter.

Kavehrad Research Featured

Mohsen Kavehrad, W. L. Weiss Chair Professor of Electrical Engineering, was a featured speaker at the 11th Annual Military Antennas Summit in September. Titled "Multi-band, Multi-Service Sensing - Metamaterials; Myth & Reality," the presentation addresses the demands by the communications industry for greater bandwidth in the capability of conventional wireless technology.

Unmanned Aerial System applications require electronic scanning antenna capabilities in challenging environmental conditions over very large bandwidths. In addition to that, it is desirable to have as much reduction as possible in size, weight, power, and cost.

Metamaterials are formed by periodic repetition of some inclusions in a host medium, which may be described as effective media characterized by a set of equivalent constitutive parameters. Self-similarity in creating periodic structures is the basis of building volume or 2D holographic components. Similar concepts are used to model phase screens used in modeling the atmospheric turbulence.

Even with Metamaterials readily available, the atmosphere around the globe cannot be replaced.

This seminar, presents a Hybrid RF and Wireless Optical solution to provide adaptive sensing in an opportunistic fashion, using metamaterials.

Kavehrad, and his research group was recently profiled in an article on the Penn State website. To view the article, go here.

Alumna Honored

Electrical Engineering alumna Jean Lydon-Rodgers ('85 EE) will be honored Oct. 16 for her outstanding professional accomplishment and given the lifelong title of Alumni Fellow, the highest award given by the Penn State Alumni Association.

Lydon-Rodgers is vice president and general manager, military systems for GE Aviation in Cincinnati, Ohio. She is responsible for the business's military operations serving the U.S. Department of Defense and numerous international military customers for aircraft, helicopter, and marine engines. She manages $4 billion in annual sales and more than 500 employees worldwide.

Lydon-Rodgers joined GE on the Operations Management Leadership Program at GE's aerospace business and later moved to GE Aviation for additional assignments. Upon completion of the program, she moved to evaluation and test engineering where she supported the development and certification of commercial engines. Following her engineering roles, she worked for GE's engine services as a Six Sigma Black Belt. She then progressed to positions of increasing responsibility in the services and military systems divisions. Prior to her current position, Lydon-Rodgers served as vice president of the F136 engine project at GE Aviation and as the first female president of the GE Rolls-Royce Fighter Engine Team.

Lydon-Rodgers is an officer of the General Electric Company, an executive sponsor for GE's Corporate Leadership Staff and GE Women's Network, an Alzheimer Association ambassador to a US senator, and has served on the board of the Cincinnati Fine Arts Fund. In 2010, she received the Greater Cincinnati Career Woman of Achievement Award. In 2013, she received the GE Chairman's award for Expertise. She holds an MBA from Xavier University.

Lydon-Rodgers resides in Cincinnati. She and her husband John have a son, John, and a daughter, Lexi.

Congratulations

The following two members of our EE family were recognized at a presentation in September for their 25 years of employment at Penn State.

Dave DeCapria, Engineering Lab Manager

John Mathews, Professor

Also celebrating milestones are the following:

Theresa Mayer, Distinguished Professor, 20 years

Constantino Lagoa, Professor, 15 years

Ram Narayanan, Professor, 10 years

Rebecca H. Ripley was the student marshal for the College of Engineering at the summer commencement. She chose Jeffrey Schiano as her faculty escort.

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

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Mentoring

Alumni participants have an opportunity to reconnect in a meaningful way with their alma mater, even if they live halfway across the globe. Mentoring programs provide alumni the chance to share their valuable time, talent, and expertise with the College. Alumni also have exclusive access to a promising pipeline for cultivating and recruiting the best and brightest young engineers to their places of employment.

While we have all the interested students paired with an alumni mentor for this year, please consider volunteering for this program in the future. More information about the mentoring program can be found here on our website or by contacting Cathy Schultz, 814-863-0253, CLS118@psu.edu.

They're back . . .

Penn State Electrical Engineering golf shirts are back. I sold out the first time around. The navy blue shirts with white embroidery are $30 and are available in men's sizes: Medium, Large, X-Large, and 2XL. To order, email Cathy: CLS118@psu.edu or call 814-863-0253.

Congratulations Summer Graduates

M.S.

BOEHMER, TYLER J
CHAUDHARY, RAVI S
DHANKER, RIJUL
HACKETT, ALEXANDER L
HERROLD, BRIAN A
ROY, INDRANIL
SO, JINHYUN
SONTI, SIDDHARTH
TUCKER, JOSEPH P
VIRDHE, AKSHAY A

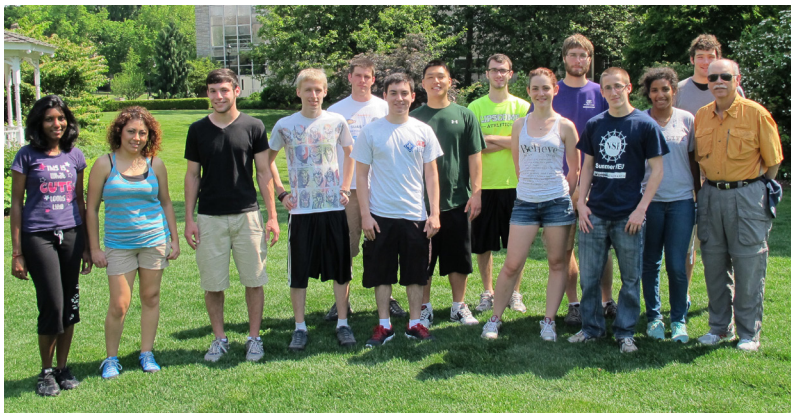
Ph.D.

EDWARDS, PERRY S
FENG, CHA
GHOSH, SUPRATIM
GREGORY, MICAH D
HONG, KUAN-LUN
JIANG, ZHIHAO
KUO, MENG-WEI
LI, YUANYUAN
MIRZAZAD BARIJOU SAN
SHASTRY, MAHESH C
SRINIVAS, UMAMAHESH
YANG, CHUAN

Datta Involved in Unique Initiative

Suman Datta, professor of electrical engineering, will participate in a Penn State led multi university research initiative that is working to develop a computer prototype that can see the surroundings in the same fashion as the human brain's visual cortex with improved energy efficiency. With a $10 million grant from the National Science Foundation's Directorate for Computer and Information Science and Engineering, Datta's research team is part of a seven-university group that will receive an NSF CISE Expeditions in Computing award, the largest single investment the foundation makes in computing science. The project envisions a holistic design of a machine vision system that will approach or exceed the capabilities and efficiencies of human vision, according to the foundation. This technology will enable computers to interprete visual content at three orders of magnitude enhanced efficiency than current technologies. Datta's team is funded by more than $500,000 of the total grant. His team is harnessing many body interaction in correlated materials to fabricate analog processing elements as building blocks for next generation vision processing systems. Collaborating institutions include University of Southern California, Stanford University, York College of Pennsylvania, University of California-San Diego, University of California-Los Angeles and the Massachusetts Institute of Technology. Read the whole story about Suman Datta's research initiative here.

Summer Rearch Experience for Undergraduates



The Summer Research Experience for Undergraduates (REU) program sponsored by the National Science Foundation provides summer research experience in electrical engineering at Penn State for undergraduate students who seek research exposure. The goal of the REU program is to provide interested undergraduate students, selected from across the nation, the opportunity to be involved in cutting edge research and thus develop students' interests in graduate studies and in future research in electrical engineering areas. Pictured are this years participants:

Niklas Anthony
Penn State

Ryan Collins
Bucknell University

Thenmozhi Elayaperumal
University of West Florida

Amy Hein
West Virginia Wesleyan College

Bill Kim
Johns Hopkins University

Zachary Morgan
University of Mississippi

Jeremy Pachter
Brandies University

Gregory Roberts
University of California, Berkeley

Cynthia Rojas
New Mexico State University

Mason Sutorius
Clarkson University

Sophia Williams
Harvey Mudd College

Benjamin Young
Virginia Commonwealth University

Contact Information:
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Web: www.ee.psu.edu

Please submit news items to: Cathy Schultz at cls118@psu.edu