

ECE Newsletter – Summer 2015

Kansas State University again selected for Collegiate Wind Competition

by: Beth Bohn- featured in the Kansas State News

The U.S. Department of Energy has selected Kansas State University to compete at its 2016 Collegiate Wind Competition, a biennial event. The university also participated in the inaugural competition in 2014.



Continue reading “Wind Turbine Competition” →

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Alumni News

Alumni Don Ludlum passed on Feb 20, 2015. Ludlum was the president and founder of Ludlum Measurements Inc, a radiation detection company in Sweetwater, Texas, it is one of the leading suppliers of such equipment in the US. For more information, please see the following links below:

<http://ludlums.com/company/don-ludlum-founder>

http://ludlums.com/images/stories/news_letters/Don%20Ludlum%20Story.pdf

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Senior Design Experience



If you had to dream up a design experience for students – what would it look like? What should senior engineering students know? What should they be able to do?

Over the past three years the ECE faculty has wrestled with those questions. They want a design experience that will equip students to enter their professional or academic careers. It should help students take the next step by modeling a design experience.

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Keeping the lights on

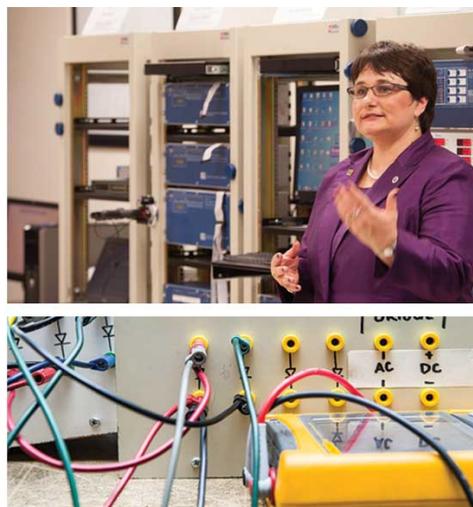
By Jennifer Tidball

As the world's population increases and the demand on our power grids grows, how will we keep the lights on?

That's where Kansas State University fits in. Through the [Electrical Power Affiliates Program](#), the [College of Engineering](#) is leading the charge in solving future problems for the power and energy industry.

The program, housed in the electrical and computer engineering department, partners with eight industry organizations. Since its establishment in 2008, the Electrical Power Affiliates Program has supported relevant research projects and provided engineering students with real-world experience, said [Noel Schulz](#), program director and the College of Engineering's associate dean for research and graduate programs.

"Interaction with industry is a key component of our goal to become a Top 50 public research university by 2025," said Schulz, who also is the university's first lady. "Many of the research projects funded by the Electrical Power Affiliates Program are in line with industry issues. By interacting with corporate partners, we can get a better understanding of what industry challenges might appear in the next five to 10 years. We can make sure our faculty and staff know what challenges might happen tomorrow and in the future so they can help solve those problems."



Faculty and student research

A key component of the Electrical Power Affiliates Program is providing support for faculty and student research projects on numerous relevant topics: wind power, smart grids and electric vehicles.

For the past three years, the program has given more than \$110,000 each year to support small projects for undergraduates and graduate students. During that time, 18 faculty and staff from seven departments and Engineering Extension have received more than \$300,000 in support for their activities.

“Funding from the Electrical Power Affiliates Program can support researchers in getting preliminary data and that makes them more competitive for larger external funding,” Schulz said. “Researchers are able to use it as a steppingstone for larger projects on the federal landscape.”

Behrooz Mirafzal, assistant professor of electrical and computer engineering, used Electrical Power Affiliates Program funding and other funding sources to develop a new research power electronics laboratory. Because of this preliminary research, Mirafzal was able to apply and receive a \$400,000 National Science Foundation CAREER award to help develop grid interactive converters for the next generation of power grids.

“Programs like EPAP support the faculty members who are active in power and energy areas to run small projects and obtain preliminary results, which are typically required for preparing large grants,” Mirafzal said.

Here’s a look at some of the research projects funded for the 2014-2015 academic year:

- Wind turbines and grid interaction
- Secure and reliable openflow networks for smart grids
- Understanding condensation mechanisms and coating wear
- Constructed wetland treatment systems and the treatment of flue gas desulfurization effluents
- Electric vehicle charging



Real-world experiences

The Electrical Power Affiliates Program is key to the university's — and the state of Kansas' — goal of providing more engineers, Schulz said.

The program gives engineering students the opportunity to research, learn, network and engage in professional development. In 2014, 22 students attended a Chicago conference, presented posters and papers, and interacted with industry members.

Additionally, the Electrical Power Affiliates Program sponsors EPAP Day every fall semester. The annual event includes a mini career fair, mock interviews for students, lunch, research poster sessions and opportunities for students to network with power and electric companies.

"Through the Electrical Power Affiliates Program and the partnership between industry and academics, we are able to give our students real-world experiences beyond what we are able to teach in the classroom," Schulz said.

Electrical Power Affiliates Program members

Here are the eight members of the Electrical Power Affiliates Program:

- Burns & McDonnell
- Fishnet Security
- Kansas City Power & Light
- Kansas Electric Cooperatives
- Omaha Public Power District
- Schweitzer Engineering Laboratories
- Sega
- Westar Energy

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Smart Grid Lab

The Burns and McDonnell Smart Grid Lab was featured in K-State Perspectives.

The lab, in Rathbone Hall, includes power grid and network communication equipment to support undergraduate and graduate research projects. It is one of the first facilities to test how emerging software-defined networking technology can more efficiently manage, distribute, use and secure electrical power.



For more information or to read the article visit: <http://www.k-state.edu/perspectives/winter-2015/smartlab.html>

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Alumni News

Two alumni join Kansas State University College of Engineering Hall of Fame

by: Mary Rankin

The Kansas State University [College of Engineering Hall of Fame](#) will induct two new members on March 28.

Induction to the hall is the highest honor bestowed on its alumni by the college. The honorees will be recognized for their professional success and accomplishment, involvement with and support of the College of Engineering, dedication to the university, and professional and public service.

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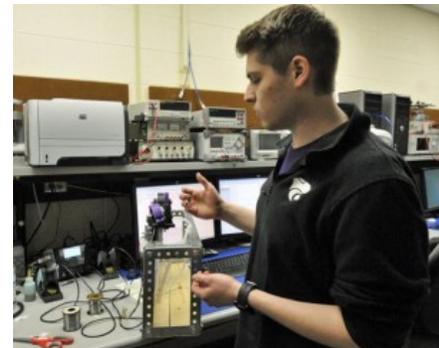


Student news

3-D printing turns into a teaching tool for area students

Students were featured in the Manhattan Mercury on March 1, 2015 for their use of 3-d printing. Students featured were David Schall and Jacob Sobering. To read the article in full visit: <http://themercury.com/articles/3-d-printing-turns-into-a-teaching-tool-for-area-students>

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Alumni News

Kansas State University engineering alumni honored for career success

by Mary Rankin- Featured in Kansas State news

The Kansas State University College of Engineering will honor 11 alumni for professional career accomplishment during the first 20 years following their graduation. The honorees will be recognized at ceremonies on the Manhattan campus March 28.

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Faculty Spotlight

Dr. Behrooz Mirafzal, an Associate Professor of ECE department at KSU, received his PhD degree from Marquette University in 2005. From 2005 and 2008, he was with Rockwell Automation/Allen-Bradley, Mequon, WI, as a Senior Development/Project Engineer, where he was involved in research and development related to motor-drive systems. From 2008 to 2011, he was a faculty member at Florida International University, Miami, FL. Since 2011, he has been a faculty member at Kansas State University, Manhattan, KS. Dr. Mirafzal is the recipient of the 2008 second best IEEE-IAS Transactions Paper Award for a paper published in 2007, the best 2012 IEEE-PES Transactions Paper Award for a paper published in 2011, a 2012 NSF EPSCoR First award, and a 2014 NSF CAREER Award. He also received an innovation award from Rockwell Automation in 2006. Dr. Mirafzal has served as the technical co-chair of the IEEE IEMDC International Conference in 2009, NAPS Conference in 2013, an associate editor of IEEE Transactions on Industry Applications since 2011, and an IEEE Senior member since 2007. [Continue reading "Faculty Spotlight"→](#)

