

### Message from Department Head Dr. Don Gruenbacher



It is with great pleasure that we get this newsletter out to our outstanding alumni and friends of the department. A great deal has happened since our last newsletter, and the most recent news is that our undergraduate enrollment has returned this semester to more than 400 students, a level that we haven't seen since fall 2006. Electrical and computer engineering enrollment across the nation had seen a similar trend over the past five years, and we hope to continue this positive direction into the foreseeable future. A very related development is that the Kansas Legislature and governor approved funding for the University Engineering Initiative Act, which aims to increase the number of engineering graduates in the state of Kansas by 50 percent over the next 10 years. We certainly plan on being an integral part of that effort.

Two of the strategies we have initiated in the past year to address our lower enrollment numbers include: 1) the hiring of a full time academic advisor and recruitment coordinator; and 2) the creation of social networking sites for the department. With help from our advisory council, we are developing new tools to attract more students into our program. One idea being pursued is to develop hands-on examples of the projects our students do, and then place these in the hands of high school students across Kansas. Another concept that will be implemented next summer across the College of Engineering is to bring high school teachers to campus for several days of real, practical experience with our programs so they can bring their experiences back to their students.

Beyond the classroom, we are also excited as our research program continues to grow. This past fiscal year our expenditures increased by 20 percent to \$1.73 million. Examples of projects that have recently awarded include:

- NASA: Development and testing of (a) wireless wearable physiological sensors for in-suit astronautics applications and (b) low-power, short- and long-range telemetry mechanisms that support these health-monitoring technologies.
- Department of Defense: Advanced Computational and Sensor Network Methods for Shipboard Power Systems.
- National Science Foundation: Multi-Agent Control of Intelligent Power Distribution Systems.

We are very excited about these and many other projects our faculty and students are working on. In addition, the department was selected to host the North American Power Symposium in fall 2013! This will provide great visibility for our students and faculty.

Finally, our department success rests solely on the quality of our students, faculty and staff. You will find several new faces in the department who we are extremely pleased to have joined us. Our newest faculty member, Dr. Behrooz Mirafzal, specializes in power electronics for renewable energy systems. We are currently conducting faculty searches to continue building our expertise in the biomedical area.

We hope you enjoy this newsletter. I am always available for questions or suggestions, and I look forward to seeing many of you in the coming year.

Dr. Don Gruenbacher, Department Head

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## Electrical Power Affiliates Program gives ECE students opportunities

By Rachel Skybetter



*Kansas State University engineering students eye the all-electric Chevy Volt at the 2011 Electrical Power Affiliates Program Day.*

As engineers retire and technologies change, engineers are in high demand in all fields, and power is one of them.

The Electrical Power Affiliates Program, or EPAP, allows regional power companies and Kansas State University engineering students to work together to meet the challenges facing the industry today. The program is led by Kansas State University's first lady, Dr. Noel Schulz.

More than 40 percent of ECE graduates specialize in power, and many of them plan to stay in the midwest, Schulz said in January 2010 when she was named director of the program.

Four major regional power companies make up EPAP: Westar Energy, Burns and McDonnell, Nebraska Public Power District and Omaha Public Power District.

The companies team up with both undergraduate and graduate engineering students to conduct research on practical real-world problems, as well as develop power fellowships and internships.

"Industrial support of Kansas State will increase in importance as we move toward Kansas State University 2025," Schulz said in March. "The Electrical Power Affiliates Program is an example where four companies can make a difference for our students and faculty. They can contribute to the advancement of the College of Engineering by enabling undergraduate and graduate research projects, student travel to conferences, plant trips to industrial sites and more."

EPAP was established more than three years ago by Dr. Don Gruenbacher. There are many ongoing research

projects funded by EPAP. The College of Engineering recently hosted an Electrical Power Affiliates Program day on Sept. 7 in the engineering complex atrium. Students met with representatives from the affiliates, as well as discussed career opportunities and collaborations with university faculty and staff. The first EPAP day was held in March and was a success, complete with mock interviews, presentations, class discussions and a reception.

"EPAP day provided an opportunity for industrial representatives to come to campus and interact with students through class presentations and display tables," Schulz said. "This helps students at all levels learn about careers in engineering and in particular power industry careers." ■



# Professors use National Science Foundation grant to help veterans

Three Kansas State University electrical and computer engineering professors will use a National Science Foundation grant for a project to help military veterans enter the work force at an accelerated pace.

Doctors David Soldan, Don Gruenbacher and Noel Schulz will use the \$146,000 grant for "From Defense to Degree: Accelerating Engineering Degree Opportunities for Military Veterans." The project offers veterans accelerated undergraduate and graduate programs in electrical engineering, helping them obtain jobs more quickly, especially in energy systems.

The professors developed the idea in conjunction with the Post-9/11 GI Bill, which provides recent military veterans with up to 36 months of educational benefits, including financial support and housing allowances.

Kansas State University's close relationship with Fort Riley and other military institutions, as well as its long-standing reputation as a military-inclusive university, make it an ideal place to develop such a program, Soldan said.

"These military veterans are unbelievably motivated and capable and possess relevant operation experience, making them a great fit for advanced education and occupational opportunity in this technical field," said Soldan, the project's principal investigator. "I think the ability to transition them from military service into the global work force in an efficient way is not only possible -- it is something that we have a responsibility to do."

Soldan personally understands the benefits of the GI Bill -- he served in the U.S. Air Force from 1971-1975, and the bill helped him earn his master's and doctoral degrees in electrical engineering at Kansas State University.

The military project focuses on two areas: to help military veterans earn undergraduate degrees and to help those veterans with bachelor's degrees in related fields earn master's degrees. Veterans will be able to earn the degrees on an accelerated basis, depending on their technical work in the military. The project focuses on electrical engineering, and within that, energy systems, because many veterans have specialized experience in those areas. Soldan said military veterans entering the engineering work force will help address shortages that are forecasted because of retiring engineers.

"One of the things we're trying to do is better understand the existing knowledge level of these veterans because they have been working in technology in relevant operational contexts," Soldan said. "Developing and implementing a tailored curriculum that recognizes their knowledge and experience can serve as a powerful enabler in growing this professional work force, as well as provide excellent career opportunities for former military members."

***"This project is another compelling opportunity for Kansas State University to employ its military-inclusive approach to ensuring success for our current and future military and veteran students."***

The program will also provide military veterans with paid internships through the Kansas State University Electrical Power Affiliates Program, which allows electrical power industries to support engineering students in electric power and energy systems. General Dynamics and several affiliates of the program, including Nebraska Public Power District, Burns and McDonnell, Westar Energy and Omaha Public Power District, have already written letters of support for beginning the military project at Kansas State University.

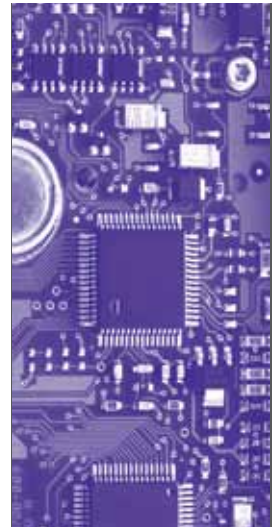
The professors plan to have a formal program in place by the beginning of the 2012 academic year.

Although the professors are using the electrical engineering energy systems area as a starting point, they would eventually like to expand the program to other academic areas, including business, economics and foreign languages.

"This project is another compelling opportunity for Kansas State University to employ its military-inclusive approach to ensuring success for our current and future military and veteran students," said retired Army Lt. Col. Art DeGroat, director of military affairs at Kansas State University. "The effort that our engineering faculty are making should well achieve its goals -- and more important, provide needed insights on the national level on how best to help military veterans transition to other lucrative forms of professional service." ■



*Dr. David Soldan counsels an electrical engineering student on his academic plan.*



## Social media enhances communication with students, alumni

By Rachel Skybetter

Just before the end of the 2011 spring semester, the electrical and computer engineering department organized a contest for undergraduate students. Contestants created videos of themselves presenting a project from an electrical or computer engineering course that were uploaded to the department's YouTube page. There were three entries, and the winner, junior Corey Glaser, won an iPad2.

The YouTube videos served an important purpose: to show non-engineers the various applications of electrical and computer engineering without being intimidating. The videos received several thousand views and subsequent "likes."

This fall when the same contest is opened up to students, organizers are expecting a much larger outcome.

"This year we'll get notices out sooner," said Andy Fund, academic advisor. "But it was the first big social media thing we did, and we had three entries on relatively short notice, so it's a start."

The YouTube competition is just one of the many ideas buzzing around ECE to engage current, prospective and former students through social media, including Facebook, YouTube and Twitter.

"We need to build more of a social presence so prospective students can understand on a not-so-technical level about what electrical engineering is and what they can do with it as a career," Fund said. "We hope this will help advertise, more than anything, what we do here and possibly draw in people who hadn't thought about engineering before."




In addition, connecting with current students through social networks will be a new way to inform them of things they may be missing in their email inbox.

"Ideally we could use Facebook to inform our undergraduates about advising and events that are going on in the department, or on campus in general, that would be interesting to them," said Laurel Koch, administrative specialist. "In

the long term, we'd like to have alumni be able to connect with them and talk about internships or jobs."

Still in the early stages, they are hoping to expand social networking outlets throughout this academic year as the engineering initiative plan becomes finalized this fall. In terms of reaching out to prospective students, there may not be an immediate change in enrollment numbers, but engaging prospective students online will be an improvement.

"If we start getting some interaction and dialogue going with secondary schools, I think that will be considered a success," said Dr. Don Gruenbacher. ■

 YouTube: [www.youtube.com/ksuece](http://www.youtube.com/ksuece)  
 Facebook: [www.facebook.com/ksuece](http://www.facebook.com/ksuece)  
 Twitter: @KSUECE

## Infusing sustainability into curriculum

### *National Science Foundation grant propels ECE program into the future*

By Rachel Skybetter



Graduate student Chris Eldridge works on rooftop solar panels at the College of Engineering complex.

Sustainability is a hot topic around the nation and the College of Engineering's department of electrical and computer engineering is no different. Although the time period of the National Science Foundation grant for "Infusing Sustainability Concepts into Electrical and Computer Engineering" program has ended, the department is making good on its promise to teach students to think globally and sustainably.

"Sustainability means utilizing your resources so that you don't

compromise the future," said Dr. Anil Pahwa. "So what we do is introduce students at the freshman level to the concept of sustainability in designing engineering systems."

The grant, which was about \$150,000, funded the department's integration of alternative energy into the curriculum. During the last year, a wind turbine and two solar panels were purchased and installed on the engineering complex using this money. The data collected from those alternative energy sources is posted on a website

# Recruitment, retention at heart of statewide engineering initiative

By Rachel Skybetter

The Kansas State University College of Engineering turns out the most engineering graduates in the state, and with a new statewide plan, that number is going to increase.

In May, Gov. Sam Brownback signed the University Engineering Initiative Act to increase the engineering workforce by expanding the number of students in the engineering schools at Kansas State University, the University of Kansas and Wichita State University.

The overall goal for the state is to increase the number of engineering graduates to 1,365 graduates per year by 2021, an annual increase of 490 graduates from the current 875 per year. For Kansas State University this means increasing the engineering program by about 750 students, according to Dr. Don Gruenbacher.

"To increase the number of graduates, there are two aspects: recruitment and retention. Some departments will try to increase more than others," Gruenbacher said. "Electrical and computer engineering has about 400 undergraduate students, and we feel like there's room for growth."

Engineering has a lower retention rate and

over the past few years, enrollment numbers have plateaued.

The push for more engineers is due to a surge in industry need as many retire or prepare to retire.

***"And even in this recession, all of our graduates are getting jobs."***

"We have an industrial advisory council with representatives from regional and national companies, and they're all looking for more engineers," Gruenbacher said.

The funding from the initiative will go to three main areas, as outlined by John English, dean of the College of Engineering:

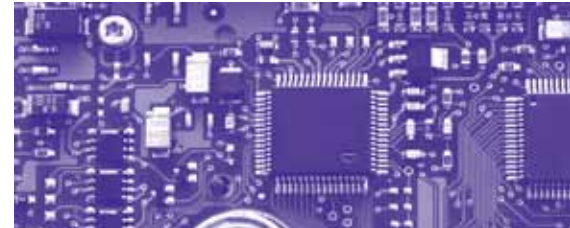
- To help with student recruitment and retention, including more scholarships, increasing recruitment staff and growing existing services that support current students.
- Adding academic faculty and staff. This includes 30 to 40 new professors, most of whom would be in engineering, but

some in math, physics and chemistry (prerequisites for engineering students).

- Building an addition to the engineering complex.

Details of the timeline are being worked out, with Dean English aiming to have a plan defined by mid-fall semester. It will take a few months to begin to implement it, Gruenbacher said, but plans are already in place to inform elementary and high school students about what engineers do and what kinds of jobs are available to them after college.

"We're trying to better communicate what our careers are to high school students and guidance counselors," Gruenbacher said. "And even in this recession, all of our graduates are getting jobs." ■



and used by the students to track efficiency, so they can see the value of sustainable energy.

The public can view the data at: [sustain.ece.k-state.edu](http://sustain.ece.k-state.edu)

At the beginning of the fall 2010 semester, incoming freshmen engineering students were given a survey to test their knowledge of sustainable energy. From there, the program was able to focus on educating the students further. After taking the same survey at the end

of the semester, there was a vast improvement of students who got the right answers, said Pahwa.

"The idea is to get them aware of sustainable energy," Pahwa said. "We have found that the new generations of students are very much interested in making an impact on their society. There's a need to do something because we cannot continue to depend on nonrenewable energy."

Dr. Don Gruenbacher also has seen an overall shift in the attitude of incoming

engineering students toward social and political concerns.

"Students really want to make an impact on society, they want to do something that's going to make a difference," Gruenbacher said. "A lot of the things we do here can have a positive impact, including renewable energy, which is why we're incorporating sustainable energy practices into our curriculum." ■



## Doctoral student's proposal wins \$10,000, could improve health care

What if you could allow your doctor just-in-time monitoring of your life-threatening medical condition by simply carrying around a device the size of a pack of gum?

That idea and the prototype for such a device landed a Kansas State University student among the top 10 finalists in the Center for Integration of Medicine and Innovative Technology's 2011 Student Prize for Primary Health Care competition.

Kansas State University's Kejia Li, doctoral student from Hangzhou, China, formed a team and entered the competition, which challenges engineering students to come up with innovative technology to support and improve the delivery of health care. As a finalist Li and his team received \$10,000 to develop a final proposal for his project, "Everyday Carry Wireless Health Monitor with Customizable Surface Components."

This year's competition received initial applications from more than 33 engineering programs nationwide. As a finalist, Li competed against teams from such noted schools as the Massachusetts Institute of Technology and Northeastern University.

Li's proposal was for a small, handheld or wearable multi-sensor medical monitoring device, which he nicknamed GumPack for its size. The device had the processing capabilities of a computer and the wireless communication and networking functions to send health data via the Internet. The device also hosted multiple biomedical sensors that can be reconfigured based on patient need.

"This device could increase the quality of care for individuals who desire mobility yet require frequent or continuous health monitoring," Li said. "Sensor-laden devices that offer the connectivity of a cell phone and are small enough to attach to a keychain or be carried in a purse like lipstick or an inhaler are especially attractive, as such items are common, inconspicuous and would minimize the distraction of daily medical monitoring."

The battery-operated device had a camera, microphone and a rectangular cuboid shape with up to four snap-in surface components, such as a reflectance pulse oximeter sensor, a two-thumb electrocardiograph, a sensor conditioning board and an expansion board or a local wireless network coordinator. The GumPack's Wi-Fi capabilities would allow it to

connect to a medical information system at a hospital or doctor's office.

GumPack's computer-grade processing capability made it special compared to today's wearable medical devices since it is able to process its signals locally, Li said. This reduces the time needed to transmit data wirelessly, saving the device's battery power. GumPack's computing power also showed its potential as an intelligent device that may one day assist with patient care decisions, Li said.

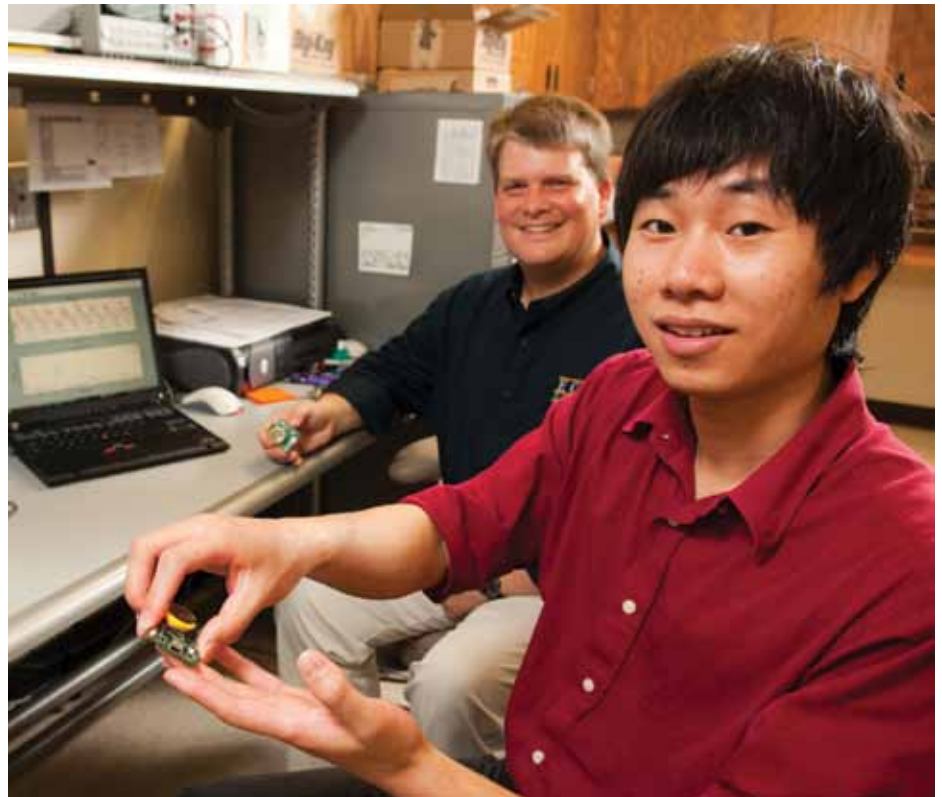
Li developed his proposal with the help of his faculty advisor Dr. Steve Warren, director of Kansas State University's Medical Component Design Laboratory. The GumPack concept was sparked by earlier research at the lab on the design of wireless reflectance pulse oximeters, which use light-based sensors to detect heart rate and blood oxygen saturation.

Li and Warren finalized the proposal in collaboration with the Kansas State University Electronics Design Laboratory for board layout and fabrication.

The Kansas State University Research Foundation filed a patent application on this work in January. Li, who earned a master's in electrical engineering from Kansas State University in May 2010, plans to finish his doctoral work in 2012. He would like to work in the U.S. for a year or two before returning to China.

"Kejia's selection as a finalist is an example of how the department of electrical and computer engineering and the College of Engineering provide scholarly experiences that make our graduate students competitive in today's world and are part of our goal to help make the university a top 50 public research institution by 2025," Warren said.

The Center for Integration of Medicine and Innovative Technology's Student Prize for Primary Health Care is supported by a gift from the Gelfand Family Charitable Trust. The center is a nonprofit consortium of Boston's leading teaching hospitals and universities. It fosters interdisciplinary collaboration in translational research, medicine, science and engineering, and with industry, foundations and government, to rapidly improve patient care. ■



*Kansas State University electrical engineering student Kejia Li, right, works in a research lab.*

## Commerce Bank honors DeVault with Outstanding Teaching Award



Professor James DeVault was one of four Kansas State University faculty members to receive the Commerce Bank Outstanding Undergraduate Teaching Award.

Each of the awards, which are sponsored by the William T. Kemper Foundation and the Commerce Bancshares Foundation, includes a \$2,500 honorarium. The

awards are coordinated through the Kansas State University Foundation.

"For a decade and a half, Commerce Bank and the William T. Kemper Foundation have partnered with Kansas State University to promote and support excellence in undergraduate teaching," said Tom Giller, community bank president of Commerce Bank, Manhattan. "We're pleased to work with the university to honor those who have a positive impact on students."

Kansas State University President Kirk Schulz said that the university's quality teachers are key to Kansas State University's success.

"When the community stands behind Kansas State University's teachers like this, good things happen," he said.

"These individuals exemplify the innovative ways our teachers engage students in learning. I am proud to recognize them with this award."

DeVault joined Kansas State University in 1985. He's been honored for his teaching numerous times, including in 2007 with the Myers-Alford Memorial Teaching Award and in 2006 with the James L. Hollis Memorial Award for Excellence in

Undergraduate Teaching, both given by the College of Engineering. In 1996 he also was honored with the John Fluke Award for Excellence in Laboratory Instruction by the American Society of Engineering Education.

The department of electrical and computer engineering has recognized DeVault five times with the Eta Kappa Nu Distinguished Faculty Award. He teaches analog electronics, digital electronics and instrumentation, and has taught control systems and mobile autonomous robotics. He also is an active researcher. DeVault has a bachelor's degree in electrical engineering and master's degree in business administration, both from Michigan Technological University, in addition to a master's degree in electrical engineering from the University of Michigan.

ECE faculty members who previously earned the Commerce Bank Outstanding Undergraduate Teaching Award include: Dr. William Kuhn, 2008; Dr. Medhat Morcos, 2000; and Dr. Richard Gallagher, 1992. ■

## ECE welcomes department additions

The department of electrical and computer engineering is proud to welcome its newest faculty and staff members.



Chassy Nichols,  
Project Coordinator



Andy Fund,  
Academic Advisor



Carrie Booth,  
Student Worker



Yvonne Bachura,  
Accountant I



Laurel Koch,  
Administrative Specialist



Behrooz Mirafzal, Ph.D.,  
Assistant Professor

## Graduate student earns honor for research that could help Kansas

Sakshi Pahwa, doctoral student in electrical engineering, was named a KansasBio winner for her research presentation at the eighth annual Capitol Graduate Research Summit.

Pahwa, of Mumbai, India, received a \$500 scholarship from KansasBio, and was invited to present her poster at the grand opening of the Kansas State University Olathe campus in April and at the KansasBio board meeting in May.

"The Capitol Graduate Research Summit was a success," said Carol Shanklin, dean of the Graduate School. "The traffic in the event was the best it has been in at least four years."

The Feb. 17 summit featured Kansas-related research conducted by graduate students at Kansas State University, the University of Kansas, the University of Kansas Medical Center and Wichita State University. Event sponsors included KansasBio and the graduate schools and graduate student organizations from each university.

Two students from each university were chosen as winners.

Pahwa interacted with Lt. Gov. Jeff Colyer; members of the Kansas Board of Regents; legislators, including state Reps. Susan Mosier and Sydney Carlin of Manhattan; university administrators from Kansas State University, the University of Kansas and Wichita State University; and industry representatives.

Pahwa's research, "Distributed Sources and Islanding to Mitigate Cascading Failures in Power Grid Networks," also featured co-advisors Dr. Noel Schulz and Dr. Caterina Scoglio.

The research focuses on using renewable energy sources to enable islanding in the transmission grid and help avoid cascading failures in power

grids, such as what happened in the northeast blackout of 2003.

"The research summit was a great opportunity to meet other students at other universities who are working on similar projects and to exchange ideas," Pahwa said. "It was also great to meet with important leaders and let them know the importance of research



*Kansas State University electrical engineering doctoral student Sakshi Pahwa, center, receives her research award.*

and how to implement ideas for the betterment of the state in the future."

Ten Kansas State University students presented at the statewide summit, all selected from a group of 28 students who presented at a Feb. 2 on-campus poster session, called Research and the State. The event was sponsored by the Graduate Student Council and the Graduate School, with support from the Kansas State University Academic Excellence Fund. ■



## Wind and solar power land professor among state's top scientists



An electrical and computer engineering professor was selected to be among the top 150 scientists in Kansas' history.

Dr. Ruth Douglas Miller was added to the Ad Astra Kansas Initiative's list of the state's top 150 scientists for the organization's project, "Science in Kansas: 150 Years and Counting." The project is part of the yearlong celebration of the Kansas

sesquicentennial and is meant to highlight important researchers and innovators throughout the state's 150-year history. Douglas Miller joins other historically noted Kansas researchers like George Washington Carver, Charles H. Sternberg, Clyde Cessna and Clyde Tombaugh.

Scientists included in the Ad Astra project are featured on digital trading cards with their picture and research stats, similar to a sports card. The cards are meant for K-12 students to help teach and emphasize the importance of science and innovation and the role they play in the history and future of Kansas. Douglas Miller's research focuses on harnessing wind and solar power. Specifically her work studies the best places to build wind turbines and how wind and solar energies can be most efficiently incorporated into the power grid.

"With the second-best wind resource in the U.S., Kansas stands in an excellent position to build a strong renewable energy economy, preserve rural lifestyles and also help preserve the health of our planet for future generations," she said.

"It is most rewarding to be working in the renewable energy field -- what the world needs the most."

Douglas Miller also directs Kansas State University's Wind Application Center and leads the state's Wind for Schools program. The program helps K-12 schools across Kansas install small wind turbines in an effort to educate students about wind energy and interest them in careers within the alternative energy field. By the end of 2010, Wind for Schools has placed 14 turbines and installed 13. The program is also working with Colby Community College and Midwest Energy in setting up a new small wind turbine test facility in Colby, which will help identify wind turbine models that perform well in Kansas' strong winds.

Douglas Miller earned doctoral and master's degrees at the University of Rochester and her bachelor's degree at Lafayette College.

More information about the Ad Astra Kansas Initiative, as well as the trading cards, can be found at <http://www.adastra-ks.org/>. ■

## Pahwa wins college Public Service Award



Kansas State University's College of Engineering recognized Dr. Anil Pahwa for outstanding public service. Pahwa earned the 2011 Larry and Laurel Erickson College of Engineering Public Service Award

for his involvement on campus and in the community.

Pahwa has spent more than two decades teaching and leading at Kansas State University, and he published research studies on distribution automation, distribution system planning and analysis, and computer methods for power systems.

He served as graduate coordinator for the department of electrical and computer engineering from 2000 to 2004 and served as interim department head from 2004 to 2007. Pahwa earned the Paslay Award for Teaching and Research in 1993 and 1995, the Power Engineering Education Committee Prize Paper Award in 2000 and the Kansas State University Eta Kappa Nu Distinguished Faculty Award in 2004.

He served as faculty advisor from 2007 to 2010 for Kansas State University's Beta Kappa chapter of honor society Eta Kappa Nu, during which it received national recognition as an outstanding chapter for activities during the 2009-2010 academic year. In addition to success at Kansas State University, Pahwa has served the Institute of Electrical and Electronics Engineers, Engineers Without Borders and Kabul University in Afghanistan.

Dr. Don Gruenbacher commended Pahwa for his dedication and selflessness.

"Anil believes very deeply about giving service to organizations that either he belongs to or those that truly have a deep need for help," Gruenbacher said. "Dr. Pahwa has also been very successful in teaching, research and service while at Kansas State University, so his strong desire to create time for these activities further illustrates his commitment to service." ■



# Hall of Fame

*Induction to the Hall of Fame is the highest honor bestowed on alumni by the college. The honorees are recognized for their professional success and accomplishment, active involvement with the support of the College of Engineering, dedication to Kansas State University and professional and public service.*



**Lou Von Thayer** is a 1983 graduate of Kansas State University in electrical engineering. He is president of General Dynamics Advanced Information Systems, a business unit of General

Dynamics in Vienna, Va., where he leads a diverse organization of more than 8,000 professionals. The unit provides end-to-end mission systems integration, development and operations support to customers in the defense, intelligence and homeland communities.

The company is a market leader in business aviation; land and expeditionary combat vehicles and systems, armaments and munitions; shipbuilding and marine systems; and mission-critical information systems and technologies. Von Thayer currently serves as chair of General Dynamics Business Development Council and has served on the Corporate Excellence Committee. He holds a master's degree in electrical engineering from Rutgers University. He serves on the board of the Intelligence and National Security Alliance and chairs its Cyber Security Council. He is also a member of the Engineering Advisory Council at Kansas State University as well as numerous professional organizations, including the Armed Forces Communications and Electronics Association, Institute of Electrical and Electronics Engineers, National Defense Industrial Association, Surface Navy Association and the Optical Society of America.



**Donald H. Lenhart**, Manhattan, Kan., is a 1956 graduate of K-State in electrical engineering. He has a master's degree in electrical engineering from Syracuse University and a doctorate from the University

of New Mexico. He began his academic career at Kansas State University in 1966, retiring in 2009 after more than 40 years as a member of the electrical engineering faculty. Lenhart started out at Kansas State University by teaching graduate courses in networks and communications. He took over the first course in microprocessors halfway through the semester after the death of a colleague. During the next 34 years, he developed more courses using microprocessors and kept the university moving forward in the microprocessor field. His research in the application of microprocessors allowed for sabbaticals with four companies, where he concentrated on the testing of microprocessors and their systems. Lenhart assisted with Telefund for 20 years and was awarded the Telefund Hall of Fame award in 2007. He has made several gifts to Kansas State University programs, including a gift to establish the Dr. Donald H. Lenhart Electrical and Computer Engineering Scholarship.

## Professional Progress Awards

*Professional Progress Awards honor career accomplishment during the first 20 years following graduation. ECE is very proud to have three alumni recognized with this honor.*



**David Compton**, Lenexa, Kan., graduated from Kansas State University in 1990 with a degree in electrical engineering. He's the vice president of engineering at Cerner

Corporation, responsible for development of acute care solutions within the Cerner

Millennium platform, which is a registered trademark. Compton joined Cerner in 1991 and spent the first 11 years in the system integration organization, specializing in device interfacing. In 2001 he moved to clinical solutions with FirstNet-Emergency Medicine, a registered trademark, where he served as knowledge architect for specialties. He became the engineering executive for acute care in late 2006, and was promoted to vice president in 2007. He has served in numerous leadership and executive positions within Cerner's intellectual property organization. Compton is a member of Kansas State University's College of Business Administration Management Advisory Board. He is the Cerner executive sponsor for the University of Nebraska, and is also a member of the KC Hub Advisory Board, a group that promotes innovation in the Kansas City area.



**Deborah Crawford**, Spring, Texas, received her bachelor of science in electrical engineering from Kansas State University in 1992. She serves as vice president of application

development and product engineering at PAETEC. She also has served as vice president of engineering at PATEC, overseeing innovation and deployment of strategic technologies and systems, including the next-generation voice-over-IP network and developing innovative products across the company's 46-state footprint. During her previous tenure with McLeodUSA, she served as the director of network engineering, where her responsibilities were expanded in the areas of telemetry network management and corporate networking. She also served as the lead architect to design and deploy a nationwide facilities-based network. Her early experience after college with WiTel, a Tulsa, Okla.-based telecommunication company, shaped her career as she had an opportunity to work within multiple areas of engineering and provide solutions directly for the customers, as well as work with advanced products and technology.

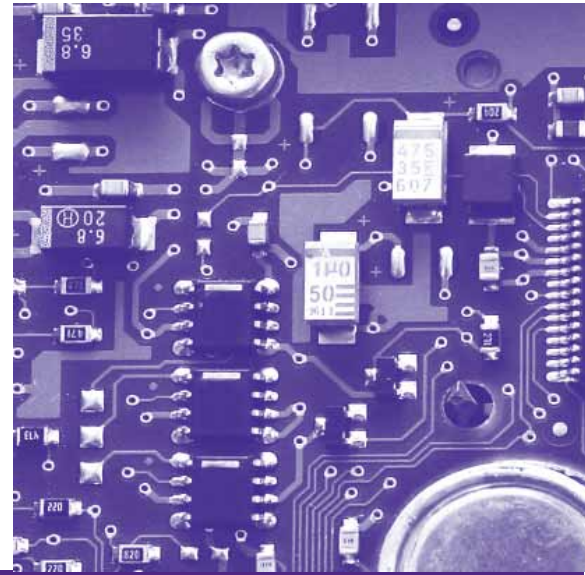
# Professional Progress Awards



**Carl Huslig**, Topeka, Kan., received his bachelor of science in electrical engineering from Kansas State University in 1991. As president of ITC

Great Plains he leads all ITC Holdings Corp. activities in Kansas, Oklahoma and throughout the southwest Power Pool region, with responsibility for developing electricity transmission infrastructure projects and improvements to meet

the region's future energy needs. Huslig worked closely with the Kansas Electric Transmission Authority and the Kansas Corporation Commission to conceive and develop the Spearville-to-Knoll-to-Axtell high-voltage transmission project to support wind energy development in western Kansas, and is also responsible for the Hugo-to-Valliant transmission line project in southeastern Oklahoma. He is spearheading the regulatory approval and development of the Kansas V-Plan, a super-high-voltage transmission line designed to deliver energy from renewable resources in western Kansas and northern Oklahoma to points east. ■



## Electrical and Computer Engineering Academy

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## Honor society, student earn national awards for activities and service

An electrical and computer engineering honor society at Kansas State University is ranked, along with one of its members, among the best in the nation.

Kansas State University's Beta Kappa chapter of Eta Kappa Nu received the Outstanding Chapter Award for its activities and service during the 2009-2010 school year. It's the first time Kansas State University has received the honor, which is presented only to chapters judged to be exemplary. Twenty-three of Eta Kappa Nu's 200 active chapters received the honor this year.

In May, the chapter received more national attention when nominee Dana Gude, then a senior in electrical engineering, participated in the Eta Kappa Nu Alton B. Zerby and Carl T. Koerner Outstanding Electrical or Computer Engineering Student Awards. Gude tied with another candidate for Honorable Mention – essentially second place – from a nationwide pool of candidates.

The award took into consideration Gude's academics and her service involvement in the department, campus and community.

"It was sort of an unexpected award for my service to the school. I didn't really feel like

I was that extraordinary when I received the nomination, but I guess I was more extraordinary than I thought," said Gude, who is now a first-year electrical engineering graduate student.

"It was kind of an eye-opener for me about how much I do for the campus and community. My family was always really big on community service. It seemed like we were always doing some volunteer project on the weekends. It was just kind of instilled in me, so I followed through with that when I got to college."

Dr. Anil Pahwa, the Eta Kappa Nu faculty advisor from 2007-2010, credited the chapter's leadership for its many accomplishments in recent years.

"Excellent leadership from officers and enthusiastic participation by members in all the activities make the chapter excellent," Pahwa said. "Philip Schumm deserves special credit for his leadership as chapter president in 2009-2010. Thanks also go to Tanner Reynolds, the 2010-2011 president, for his diligence in writing the report for the award, and Dr. David Soldan, the current faculty advisor, for proofreading the report and checking the accuracy of the submitted data.

"Past chapter officers also deserve credit for their efforts in raising the level of chapter activities over the years. This award is a result of cumulative effort spanning many years," Pahwa said.

Schumm, a doctoral student, Manhattan, and Reynolds, a senior, Hays, are both studying electrical engineering.

Membership in Eta Kappa Nu is open to juniors in electrical and computer engineering who are in the top quarter of their class or to seniors in the top third of their class. Students also must have successfully passed the course Circuit Theory 1.

The chapter offers a variety of activities and service projects to help fellow students and the community, Reynolds said.

Eta Kappa Nu also maintains the Paslay Singing Tower in Sunset Cemetery. The honorary also presents, as selected by fellow students, the Distinguished Faculty Award to an outstanding ECE professor. ■