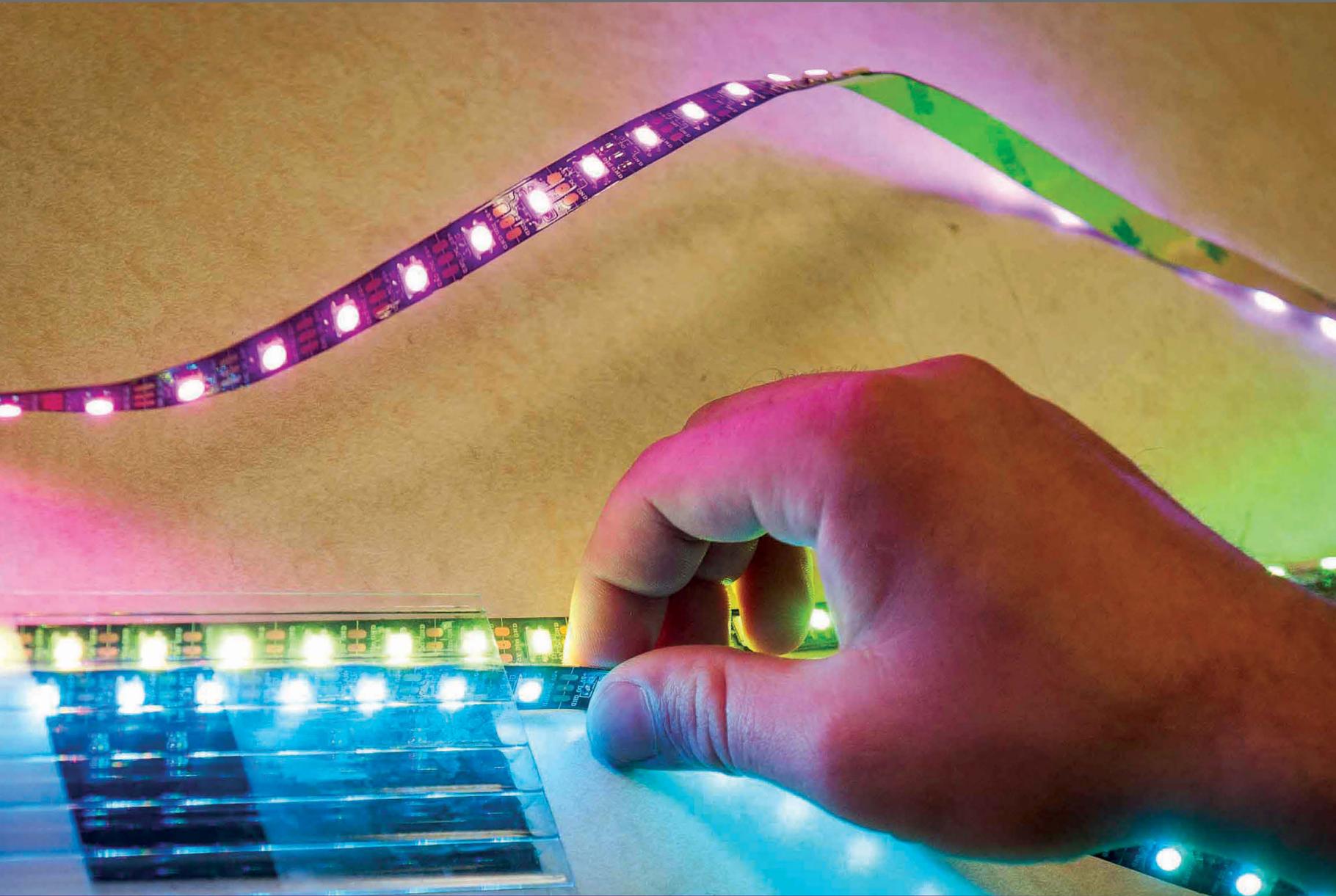


ECE UPLINK

KANSAS STATE UNIVERSITY

SUMMER 2016

COLLEGE OF ENGINEERING



KANSAS STATE
UNIVERSITY

College of Engineering
Electrical and Computer Engineering

FROM THE DEPARTMENT HEAD

Greetings from K-State electrical and computer engineering! We are happy to present our newsletter in this new format developed by the College of Engineering. As you look through the different articles and photos, you will see we've had a lot going on this past year. Of course the biggest activity was the move of our offices and most of our laboratories into our new space on the third and second floors of Engineering Hall before the start of the spring 2016 semester. We are enjoying the abundance of natural light and other amenities of these surroundings.

Other highlights from this past year include a successful search followed by two new faculty joining us in early August — Jungkwun Kim, who specializes in microelectronics and came to us from the University of Pennsylvania; and Hongyu Wu, who specializes in smart grid and came to us from the National Renewable Energy Laboratory. Another new addition to the ECE family will be Garrett Peterson, a 2014 graduate, who is returning to the department this August in the role of instructor and adviser. He will replace Andy Fund, who this spring became the assistant dean of student services for the College of Engineering. We are excited to have all three of them join us in our goal of being a top department in both research and education.

One of the activities going on each summer is the enrollment of incoming students during the month of June. We are happy to see another increase in new students choosing an ECE program. We will be increasing our efforts to retain these students during the crucial first

two years here at K-State. One of the important things for our students is the opportunity to become involved with an organization. In the department we have many opportunities, including competition teams such as the Wildcat Wind Power and robotics teams. Both had a successful year culminating in competitions this spring. Our largest organization, the Electronics Design Club, continues to provide outstanding hands-on learning opportunities outside the classroom, while our Eta Kappa Nu honorary was again named an outstanding chapter based on its activities and leadership.

Finally, some of our greatest pleasure is in seeing the accomplishments of many of our alumni. Whether it be recognition at our College of Engineering Seaton Society celebration, or those of you being recognized by your employer or professional society, we love hearing about the accomplishments of our alums. Please let us know your recent news by sending a quick note to alumninews@ece.ksu.edu. And please consider joining us at our annual banquet, this year the evening of Friday, Oct. 21.

Go Cats!



Don M. Gruenbacher
Department Head
Electrical and Computer Engineering



ECE UPLINK

IN THIS ISSUE



EDUCATION



LEADERSHIP

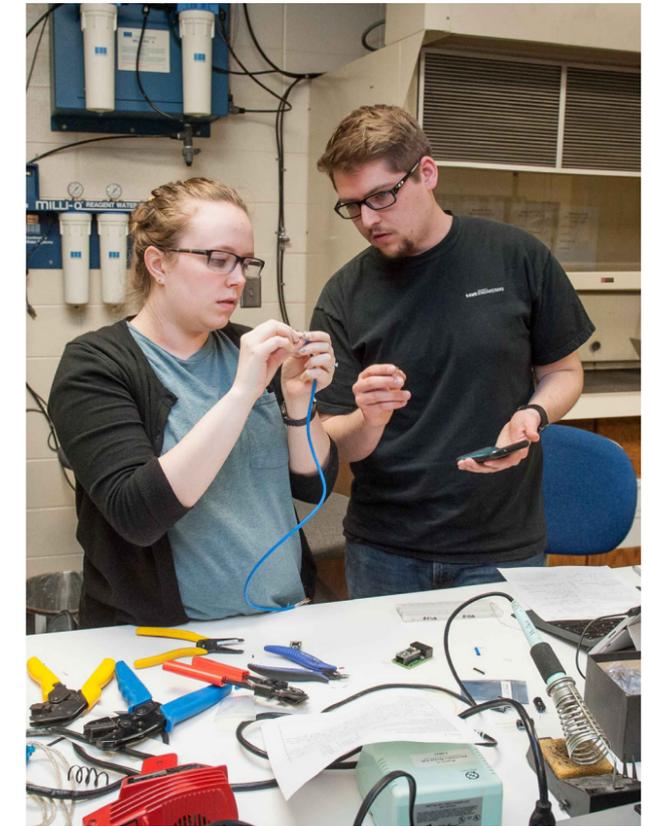


EXCELLENCE



DISCOVERY

- 2 A good night's sleep
- 4 Future of selling electricity
- 5 Eyestone Lecture
- 6 Fountain joins Engineering Hall of Fame
- 7 Professional Progress Awardees
- 8 Alumni Mentor Program
- 9 Investing in K-State Engineering
- 10 ECE Distinguished Faculty Award
- 11 New faculty
- 12 Students news
- 15 ECE graduates
- 16 Wind power
- 17 ECE honor roll



SENIORS RACHAEL KOLB AND DAVID SCHALL ASSEMBLE INTERACTIVE LED BOARD FOR ECE 590 SENIOR DESIGN.

ECE UPLINK

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“The ease of deployment and portability of the sensor suite greatly increases the likelihood of this technology reaching the homes of children with special needs.”

— Bala Natarajan

A GOOD NIGHT’S SLEEP: ENGINEERS DEVELOP TECHNOLOGY FOR SPECIAL NEEDS CHILDREN



A Kansas State University engineering team is developing a technology collection that can make a big difference in the lives of children with developmental disabilities.

The team’s projects so far have addressed around-the-clock technology: bed-based sensors to track child breathing and heart rates; wearable sensors to track child behaviors; and designs that can improve the quality of life for paraeducators who work with these children.

Now the team has received a three-year \$400,000 National Science Foundation grant to expand these ideas and better establish a link between nighttime wellness and daytime learning and behavior. The project, “UNS: GARDE: Research to quantify the health and development of children with disabilities around the clock,” involves several Kansas State University engineering researchers who are combining their expertise.

“While relationships between sleep quality and daytime performance are well-characterized for neurotypical children, these relationships are not well known for severely disabled, autistic children, many of whom are nonverbal and have multiple co-existing disabilities,”



A KANSAS STATE UNIVERSITY ENGINEERING TEAM HAS RECEIVED A THREE-YEAR \$400,000 NATIONAL SCIENCE FOUNDATION GRANT TO TRACK THE WELLNESS OF SPECIAL NEEDS CHILDREN AT NIGHT AND RELATE THIS SLEEP DATA TO DAYTIME LEARNING AND BEHAVIOR.

said Steve Warren, associate professor of electrical and computer engineering and project leader. “Polysomnographs used for traditional sleep studies require electrodes, wires and equipment that are not suitable for these children. We seek alternative nighttime tools that, once hidden in a child’s bed and bedroom, can provide effective surrogate data when compared to traditional polysomnographs.”

Other Kansas State University researchers involved include Punit Prakash, assistant professor of electrical and computer engineering; David Thompson, assistant professor of electrical and computer

engineering; Bala Natarajan, professor of electrical and computer engineering; Charles Carlson, doctoral student in electrical engineering, Hutchinson; Ahmad Suliman, doctoral student in electrical engineering, Afghanistan; Tianyu Lin, master’s student in electrical engineering, China; and Alaleh Alivar, doctoral student in electrical engineering, Iran.

The project also involves several undergraduate students in electrical engineering: Austin White, senior, Kansas City, Kansas; Shangxian Wang, sophomore, China; and Taishan Li, senior, China.

The university research team is collaborating with Heartspring Inc., a Wichita-based nonprofit organization that is a therapeutic residential and day school program. Heartspring uses evidence-based and emerging best practices to serve students who often have multiple diagnoses, including autism spectrum disorders, cerebral palsy, speech and language impairments, and other developmental disabilities.

To read more about “A good night’s sleep,” go to blogs.k-state.edu/ece/.



Engineering research project may allow future consumers to 'buy and sell' electricity

With falling prices and increased awareness in creating a sustainable future, higher numbers of consumers are choosing to install roof-top solar generation. To make effective use of this trend, utilities companies are contemplating real-time pricing of electricity, which is expected to usher in a new generation of active consumers engaged in buying and selling electricity.

To aid in this outcome, Anil Pahwa, professor of electrical and computer engineering at Kansas State University, is leading a research team effort that focuses on development of an architecture that will require little change to the existing investment in power distribution systems. It allows for the dynamic, adaptive control required to integrate active consumers with current and future combinations of high-variability distributed power sources such as solar generators and storage batteries.

The project — which includes participating K-State faculty members Scott DeLoach and Dan Andresen, computer science; Bala Natarajan and Sanjoy Das, electrical and computer engineering; and Philip Gayle, economics — “CPS: Synergy: Architecture for Future Distribution Systems Including Active Consumers with Rooftop Solar Generation” is funded by a three-year, \$700,000 National Science Foundation grant.

The team’s expected outcome will be a general, extensible, plug ‘n’ play-type, secure cyber architecture based on holonic multi-agent principles that provide a pathway to the emerging area of a transactive energy market in power distribution systems.

“The resulting gains in operating efficiency, economics, reliability and security of power distribution systems, along with integration of green power will result in better overall welfare for society and the environment,” Pahwa said.

CEO of Aspera Inc. speaks on birth and growth of high-speed transport platform for Eystone Lecture

Michelle Munson, chief executive officer for Aspera Inc., Berkeley, California, presented “How engineering (actually) changes the world — my experience as an inventor, entrepreneur and tech CEO” March 3, as part of the College of Engineering’s Eystone Lecture Series.

Munson, formerly of Junction City, is a 1996 graduate of Kansas State University in electrical engineering and physics, where she was a Goldwater scholar for achievement in science and mathematics. She was later a Fulbright scholar at Cambridge University where she received a postgraduate diploma in computer science.

She is the co-inventor of Aspera’s fasp™ transport technology, responsible for overseeing the company’s direction in collaboration with co-founder Serban Simu. Munson was a software engineer in research and start-up companies, including the IBM Almaden Research center, before founding Aspera in 2004.

Munson’s lecture highlighted how engineering brings fundamental solutions to scientific and societal “big problems,” focusing on the example of the birth and growth of Aspera’s high-speed transport platform. She addressed the origin of the company’s transport technology, the invention of the platform, financial enablement and evolution in an ecosystem of distributed cloud computing, and the explosion of data.

Munson was the 2006 K-State College of Engineering Alumni Fellow — the youngest recipient on record. She has been named Media and Broadcast Technologist of the Year for 2016, and has also received national achievement awards from Glamour magazine and USA Today. Munson is a frequent speaker on technologies and trends around big data transport, cloud infrastructure and mobility.

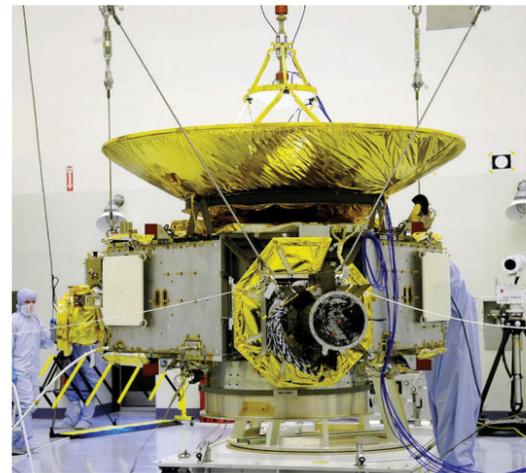
The Eystone Lecture Series, established in 2000, is funded by an endowment of the late Fred and Mona Eystone. Fred Eystone, a 1941 K-State graduate in electrical engineering, was a member of the College of Engineering Advisory Council and a Distinguished Service Award recipient.



You are cordially invited to the ECE Annual Banquet, Friday, Oct. 21, 2016, at the K-State Alumni Center. For more details or to RSVP, send e-mail to rsvp@ece.ksu.edu



ECE ALUMNUS JOINS KANSAS STATE UNIVERSITY COLLEGE OF ENGINEERING HALL OF FAME



NEW HORIZONS CRAFT

The Kansas State University College of Engineering Hall of Fame inducted two new members on April 2, one being ECE alumnus Glen Fountain.

Induction to the hall is the highest honor bestowed on its alumni by the college. Honorees are recognized for their professional success and accomplishment, involvement with and support of the College of Engineering, dedication to Kansas State University, and professional and public service.

Glen Fountain, Laurel, Maryland, is a 1965 and 1966 graduate of Kansas State University with his bachelor's and master's degrees, respectively, in electrical engineering. He is project manager for the New Horizons mission to Pluto, leading the engineering team during the initial concept work and recruiting many of the key engineering staff that later developed the mission. He led the completion of the spacecraft development and worked with NASA to see that all other activities necessary to meet the January 2006 launch date were completed. Since launch, he has been overseeing flight operations and is guiding the tasks that will carry the project through the eight years of flight from Jupiter to Pluto. Fountain was a member of the program committee for the Maryland Space Grant Consortium, which is part of the NASA Space Grant Fellowship Program. From 1996 to 2008, he was an instructor in the Johns Hopkins University Engineering School's master's degree program in technical management. Fountain is a member of the advisory board for the electrical and computer engineering department.

Two alumni honored with Professional Progress Award

The Kansas State University College of Engineering honored 11 alumni, including two from ECE, for professional career accomplishment during the first 20 years following their graduation at ceremonies April 2. Recipients of the college's Professional Progress Award are nominated by their respective department heads and confirmed by Darren Dawson, dean of engineering.



Joel Andrews, Olathe, Kansas, is a 1997 and 1999 graduate of Kansas State University with his bachelor's and master's degrees, respectively, in electrical engineering. He also holds a doctorate in electrical engineering from the Georgia Institute of Technology, 2009. He is a team leader

for Garmin International aviation radar products, acting as both project and technical lead. He has designed much of the mm-wave circuitry on multiple designs from blank sheet through production. Andrews is the author of more than a dozen technical papers in the field of electrical engineering and recently received his first patent. He is the main Garmin recruiter for electrical engineers at K-State, and takes pride in hiring and mentoring new graduates and interns alike. He has served on the department of electrical and computer engineering advisory board at K-State for the past four years.

Michelle Munson, Berkeley, California, is a 1996 graduate of Kansas State University in electrical engineering and physics, where she was a Goldwater Scholar for achievement in science and mathematics, and later a Fulbright Scholar at Cambridge University where she received a postgraduate diploma in computer science. The chief executive officer of Aspera, Inc., she co-invented Aspera's fasp™ transport technology and is responsible for overseeing the company's direction in collaboration with co-founder Serban Simu. Munson was a software engineer in research and start-up companies including the IBM Almaden Research center before founding Aspera in 2004. She was the 2006 K-State College of Engineering Alumni Fellow — the youngest recipient on record. She has been named Media and Broadcast Technologist of the Year for 2016, and has also received national achievement awards from Glamour Magazine and USA Today. Munson is a frequent speaker on technologies and trends around big data transport, cloud infrastructure and mobility.



Picker returns for reunion

William Picker, who completed his B.S. in 1964 and M.S. in 1966, both electrical engineering, and his wife, Heide, Boulder, Colorado, attended the graduate school reunion April 8 - 9, in Manhattan.

Picker worked his entire career for IBM in Boulder. His wife emigrated to the U.S. from Germany, where he had served in the U.S. Army.

WHAT HAVE YOU BEEN UP TO?

We would like to feature alumni news in future issues of ECE Uplink. Please send an email to alumninews@ece.ksu.edu with your latest news and accomplishments.



Rys wins Distinguished Faculty Award

Andrew Rys, ECE professor, is the recipient of the Eta Kappa Nu, ECE honor society, 2016 ECE Distinguished Faculty Award. All ECE students were given the opportunity to vote on professors in the department with Rys receiving the most votes. He was presented with the award at the HKN and IEEE Spring Feast.

Student comments students about Professor Rys included the following:

“He pushed me to learn the topic. He made a challenging course fun.”

“Dr. Rys gains respect from all of his students, and he holds himself in a professional manner both inside and out of the classroom.”

“A great professor because he makes you think on your own, but he’s also there to help when you need it. I learned and retained a great deal from him.”

Congratulations can be sent to Andrew Rys at andrrys@ksu.edu



RYS

Two new faculty to join the department in fall 2016

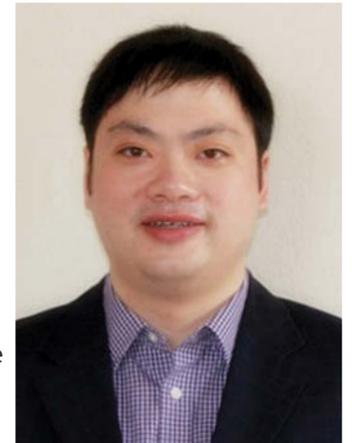


KIM

Combining research acumen from the worlds of electrical and mechanical engineering, **Jungkwun Kim** is an active researcher in the field of micro-electromechanical systems, or MEMS, and nanofabrication technology. His research allows the creation of structures, sensors and actuators that exploit the unique potential of the small scale. He has various research experiences based on externally funded research programs including NSF, NIH, DARPA, ARPA-E and KIAT.

Kim received his Ph.D. in electrical engineering from the State University of New York at Buffalo in 2011, followed by a post-doctoral fellow at the Georgia Institute of Technology 2011 - 2013. Currently, he is a research faculty member at the University of Pennsylvania. He has published approximately 50 journal articles and conference proceedings

Hongyu Wu received his Ph.D. in systems engineering from Xi’an Jiaotong University, China. He is currently a research engineer in the Power Systems Engineering Center at the National Renewable Energy Laboratory, or NREL. Prior to joining NREL, he was a post-doctoral researcher at the Robert W. Galvin Center for Electricity Initiative at Illinois Institute of Technology in Chicago. His research interests include modeling and optimization of large-scale power systems, integration of renewable energy and demand-side management in the smart grid, power systems operation and control, electricity market analysis and risk management, and energy management systems. Wu is a senior member of IEEE and received a Best Conference Paper Award at the IEEE Power & Energy Society General Meeting. He holds three software copyrights and has had more than 30 publications in these areas.



WU



GRUENBACHER

Two engineering professors make top 25 list

Don Gruenbacher and Medhat M. Morcos, ECE faculty members, have been recognized as two of the 25 top professors of electrical engineering at OnlineEngineeringPrograms.com.

The blog recognizes outstanding educators in specific areas of study, noting their contributions to academia in general, as well as online education in particular.

Criteria for selection include the following:

- Actively teaching at their institution — all of the top 25 currently teach at their affiliated institutions.
- Publications — all of these mechanical engineering professionals have authored or co-authored publications, either in journals, books or other mediums.
- Outside affiliations — these professors have been actively involved over the course of their tenure with other organizations, either private or government-affiliated.
- Level of education — all of these professionals have earned a doctoral degree in the field of mechanical engineering, highlighting both their dedication and passion, as well as their skill and expertise.

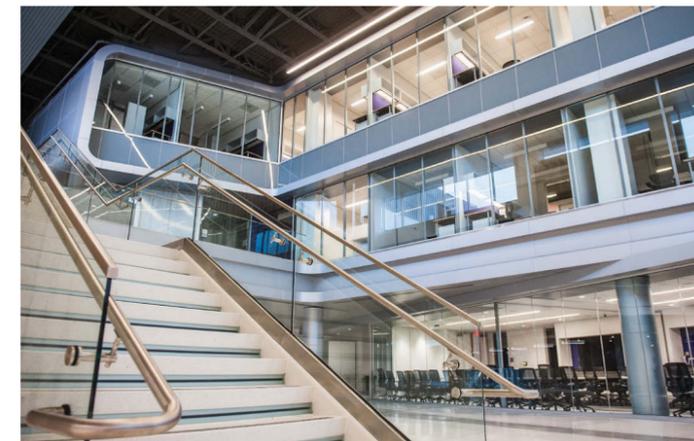
Gruenbacher is an associate professor and the head of the electrical and computer engineering department, where he also holds the George and Alice Fielder chair. He is a co-author of the recent publication “Size-based flow management prototype for dynamic dmz,” and his research focus is networks protocols and network security.

Morcos is a professor and university distinguished scholar in the electrical and computer engineering department. He is a faculty adviser for the Delta Upsilon fraternity, an associate editor of Electric Power Components and Systems, and is a founding member of the graduate exchange program between the National Polytechnic Institute of Lorraine, K-State and France.



MORCOS

OPENING OF ENGINEERING HALL



The College of Engineering at Kansas State University officially marked the opening of Engineering Hall with a ribbon-cutting ceremony on April 1.

The event took place at the southeast outdoor plaza area of the Engineering Complex, with a reception and self-guided tours following.

“As the largest engineering program in the state, we could not be more proud to officially open Engineering Hall, where we will educate the next generation of engineers,” said Darren Dawson, dean of the College of Engineering.

Engineering Hall has created approximately 108,000 square feet of instructional, research and office space in support of interdisciplinary learning and collaboration in the college. It houses the departments of computer science, and electrical and computer engineering.



Students recognized at Engineering Leadership Banquet

ECE undergraduate awards

Each year ECE students, faculty and staff nominate outstanding undergraduate students based on GPA, leadership and service to the department. The students are recognized at the department's annual banquet and receive a monetary award.

The following are recipients for the 2015 - 2016 academic year:

Outstanding Freshmen (\$100 each)

CpE: William Lies
EE: Seth Simonton

Outstanding Sophomores (\$200 each)

CpE: Mark Spicer
EE: Shangxian Wang

Outstanding Juniors (\$300 each)

CpE: Alex Hamilton
EE: Derek Lingo

Outstanding Seniors (\$400 each)

Outstanding Academic Achievement:

Fall 2015: Dengfu Ao

Spring 2016: Ethan Pauls and Jiazhang Song

Outstanding Leadership: Doug Anjard

Outstanding Service: Tanzila Ahmed

Outstanding Research: David Schall

ENGINEERING OPEN HOUSE

The following ECE students were recognized at the annual College of Engineering Open House:

Freshman/sophomore display: third place, William Lies, chromatic mixer

Limited display: third place, William Lies, music visualizer

Open class: first place, Sam Rozell, fusor

Children's display: third place, Doug Anjard, Dustin Chew and Logan VanHorn, interactive sandbox

Overall outstanding department: third place, ECE chairs Derek Lingo, Danielle Suppes and Louis Rebeck

St. Patrick: David Schall

St. Patricia finalist: Tanzila Ahmed

Knights of St. Patrick awardees: Tanzila Ahmed, Michael Banowetz, Valerie Binns, Rachael Kolb and David Schall

Steel Ring members: Whitney Cox and Lawryn Edmonds



UNDERGRAD STUDENTS PRESENT AWARD-WINNING DISPLAYS AT OPEN HOUSE.

Graduate students win scholarships

Scholarships were on the line as 140 graduate students presented their research and scholarly work in the annual graduate student research forum, K-State Graduate Research, Arts and Discovery, or GRAD Forum, formally known as K-State Research Forum, March 30 in the Engineering Complex.

Winners received scholarships of \$500 for first place, \$250 for second place and \$125 for third place.

2016 K-State GRAD Forum winners from ECE were as follows:

Engineering/Math/Physical Sciences Oral 1

- First place — Jacob Lamb, doctoral student in electrical engineering
- Second place — Jan Sebek, doctoral student in electrical engineering

Engineering/Math/Physical Sciences Poster 2

- Second place — Akanksha Singh, doctoral student in electrical engineering

Robert I-Jen and Sophia Shui-Kan Jung Graduate Scholarship in Engineering for Returning Students

- Haotian Wu, Ph.D. student
- Kan Chen, Ph.D. student

Undergraduate student wins Research Experience Award

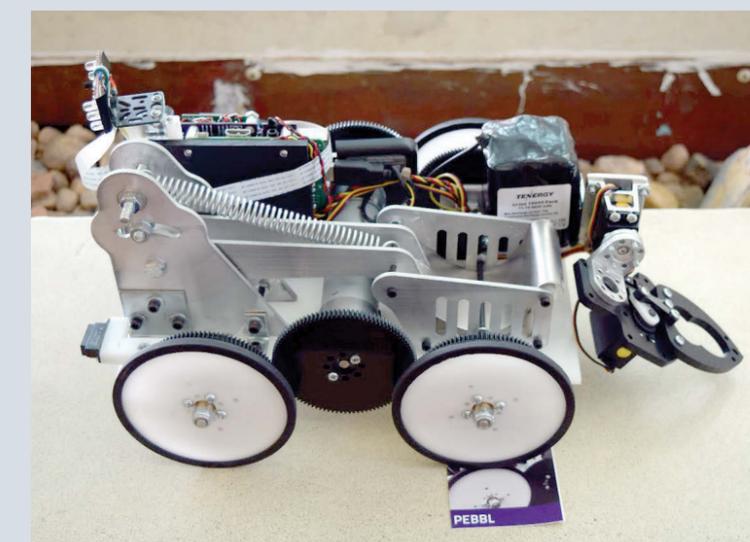
Whitney Cox, ECE senior, has been awarded an Undergraduate Research Experience Award from the Engineering Research and Graduate Programs Office for the 2016 - 2017 academic school year. Cox's research adviser is Punit Prakash and the title of her research project will be "Evaluation of directional microwave ablation antennas in an in vivo animal model."

Update from robotics competition team

The Kansas State University Robotics Competition Team, or KSURCT, reports two strong years of accomplishment.

In 2015, the club entered a new competition — the Mercury Robotics Competition at Oklahoma State University. Previously, KSURCT had been a Micromouse competition team, but changed to Mercury as more members could become involved on a larger-scale robot. While unable to attend last year's competition due to last minute technical difficulties, members learned much about building a larger robot and planned to succeed the following year.

In 2016, the club members decided to again compete in the Mercury Robotics Competition and do better than last year. The team brought in fresh faces, along with electrical engineering, mechanical engineering and computer engineering leads to work on the hardware, physical robot and software. Together, members were able to construct a robot from the ground up. The robot, PEBBL — Pi-Embedded Bean Bag Launcher — was entered in the competition in Stillwater and was able to perform very well; however, along with 50 percent of the teams, the K-State group was unable to complete the course and identified challenges to overcome in the next years. Over the summer, team members will be generalizing the software to make it independent of robot design.



THE 2016 KSURCT ENTRY, PEBBL



Growth underway for Electronics Design Club

The Electronics Design Club, or E-Club, prides itself on the ability to take information learned in the classroom and apply it to real world situations. Members are encouraged to dive into projects they are passionate about. E-Club has strong faculty, alumni and senior member involvement, allowing students at any level of knowledge are able to get involved.

Group projects and kits are encouraged and provided to teach new skills to beginners. E-Club also funds projects, provides lab space and maintains equipment to help students reach their full potential. The club's alumni have gone on to graduate school and to work for companies such as Sandia National Labs, Garmin, Hallmark and Honeywell.

The club hosts lectures on technical and professional topics, as well as helps members prepare resumes before attending career fairs. Many of its projects combine topics covered in ECE classes with exciting new technology. Previous projects include reactive LEDs on a longboard, plasma speakers, LED painting, sword-fighting robotic arms and personal 3D printers.

This year E-club was fortunate to grow its ranks again, gaining many new freshman and sophomore students. The group participated in Engineering Open House, displaying projects such as a chromatic drink mixer, graphic equalizer, a Jacob's ladder and an audio amplifier. Senior members provided displays such as an interactive 3-D topographical sandbox and a plasma generator.

Next year E-Club hopes to grow even more as it strives to encourage students to learn outside of the classroom and grow their passion for engineering.



SAM ROZELL, JUNIOR, PREPARES SUBMERGED INERTIAL ELECTRONIC CONFINEMENT FUSION REACTOR TO PRESENT TO E-CLUB STUDENTS.

ETA KAPPA NU activities

As the honorary society of electrical and computer engineering, Eta Kappa Nu proudly recognizes the scholastic achievements of students and faculty in the department. The Beta Kappa chapter of Eta Kappa Nu at Kansas State University is open for membership to juniors in the top quarter of their class, seniors in the top third of their class, graduate students and faculty.

Members are involved in giving back to the department and community through tutoring and other service activities. Tutoring is offered for electrical and computer engineering courses throughout the semester for undergraduate students, and the Paslay singing tower in the Sunset Cemetery is also maintained by Eta Kappa Nu members as a public service to the Manhattan community.

This year Eta Kappa Nu was excited to induct 10 new undergraduate students and one faculty member. Members were able to help tutor students, especially when the introductory course for computer engineering went through large changes in the fall semester. They also upgraded the Paslay tower sound equipment with a new computer.

The 2016 Eta Kappa Nu Distinguished Faculty Award, as determined by students in the department, was presented to Professor Andrew Rys. The award was given at the spring feast, held by Eta Kappa Nu and IEEE.

Next year, Eta Kappa Nu hopes to grow further, and expand on the interaction of students and faculty. It also hope to increase its membership and involvement at the graduate-student level to help connect the department's undergraduate and graduate students.



STUDENTS ENJOY FALL 2015 HKN CHILI FEED DURING FINALS WEEK.

ECE GRADUATES

M.S. and Ph.D. graduates

December 2015

Sadnan Akhter
Chao He
Shannon Ray Honeycutt
Kumarsinh Mahendrasinh Jhala
Didier M. Kabasele
Shicong Liu
Shiwei Luan
Brogan Tyler McWilliams
Souvick Mukherjee
Aaron Christopher Shaffer
Ahmed Faizan Sheikh
Monica Teresa Taba
Chenyu Zhang



S.M. Shafiul Alam – Natarajan (Ph.D.)
Multi-Agent Estimation and Control of Cyber-Physical Systems

Fariba Fateh – Gruenbacher and White (Ph.D.)
Nonlinear Control Schemes for Extremum Power Seeking and Torsional Vibration Mitigation in Variable-Speed Wind Turbine Systems

Emilio Carlos Piescorovsky – Pahwa and Schulz (Ph.D.)
Relay in the Loop Techniques for Adaptive Overcurrent Protection in Distribution Systems

Handuwa Dewage Weerasinghe – Miller (Ph.D.)
Planning Optimal Load Distribution and Maximum Renewable Energy from Wind Power on a Radial Distribution System

B.S. graduates

December 2015

Justin Shawn Allen, Valley Center
Abdulkhaliq S. Alshaikhali, Alhafouf City, Saudi Arabia
Dengfu Ao, Hobbot, China

John Robert Colbern, Overland Park
Stephen Joseph Debes, Hays
Ethan Mark Grother, Americus
Morgan Hoffman, Leawood
Kenton Walker Kocher, Glasco
Michael John Linder, Lenexa
Noah James Livingston, Meriden
Steven Christopher Mason, Overland Park
Christopher Dee McIntosh, Kansas City
Tanner Allen New, Goddard
Brian Christopher O'Leary, St. Marys
Nelson Joseph Padgett, Wichita
Scott Andrew Paramore, McPherson
Virashree Hrushikesh Patel, Manhattan
Brian Gregory Petr, Wichita
German Sanchez, Ulysses
Xavier Sloan, Lenexa
Mark Alan Stallbaumer, Axtell
Boyang Sun, Changehun, China
Cebastian Tyler Thibodo, Kansas City
Joseph Ward Tillman, Columbus
Jordan Marie Weber, Silver Lake

M.S. and Ph.D. graduates

May 2016

Ali Mofleh Alshogheathri
Bradley Michael Culver
Rahul Reddy Devarapally
Tyler Dill
Chao He
Ying Huang
Kambiz Ameen Karimi
Dale Scutti



Kan Chen – Natarajan (Ph.D.)
Physical Layer Security Schemes in Cooperative MIMO Networks — Key Generation and Reliability Evaluation

Chang Liu – Natarajan (Ph.D.)
Energy Aware Management of 5G Networks

Ahmadreza Malekpour – Pahwa (Ph.D.)
Smart Grid Operational Strategies for Power Distribution Systems with Large Penetration of Distributed Energy Resources

B.S. graduates

May 2016

Tanzila Ahmed, Barisal, Bangladesh
Yousef SH Y SH Alshamlan, Kuwait City, Kuwait
Michael A. Banowetz, Edna
Anthony Lawrence Buccero, Overland Park
Brian Jay Buchta, Overland Park
Josiah Carey, Whitewater
Ryan Lewis Chambers, Pretty Prairie
Melissa Renee Coats, Allen
Adam Christopher Ehler, Hutchinson
Peter Samuel Fairchild, Chanute
Ryan Feuerborn, Olathe
Sarah Gittemeier, Overland Park
Richard Thomas Habeeb, Wichita
Austin Nicholas Haverkamp, Seneca
Darren Wilson Hayse, Mullinville
Skyler Wyman Cole James, St. Joseph, Missouri
John Matthew Jones, Salina
Joseph Grady Jones, Edmond, Oklahoma
Rachael Noell Kolb, Overland Park
Thomas Joseph Kramer, Topeka
Conner Evan Krause, Overland Park
Armando Marquez, Dodge City
Daniel Austin Marts, Chanute
Derrick Keith Matthews, Council Grove
Rahul Paul, Manhattan
Ethan Mark Pauls, Manhattan
David Levi Plenert, McPherson
Louis Gabriel Rebeck, Basehor
Connor Blake Rogge, Olathe
Stephanie Rae Roynon, Manhattan
David Arlin Schall, Overland Park
Jacob Grey Sobering, Albuquerque, New Mexico
Jiazhang Song, Pingdingshan, China
Andrew Thomas Stevens, Overland Park
Carlos Nathaniel Tupaz II, Wichita
Heath Allen Vincent, Norton
Austin Wesley White, Kansas City
Taylor Whittaker, Lindsborg
David Wayne Wilson, Ottawa
Jiaxiang Xu Sr., Shanghai, China
Kadin Michael Zimmerman, Concordia



Wind power team prepares for competition

The Wildcat Wind Power team is designing a five-blade, horizontal axis wind turbine to compete with at the Collegiate Wind Competition 2016. They are optimizing the turbine to fit two main criteria: low cut-in wind speed and a high coefficient of power at high wind speeds. With these in mind, they hope to introduce innovative design elements to yield a turbine that will perform well in all of the aspects of the testing contest.

The team will be 3-D printing many parts of its turbine using an in-house 3-D printer. They will also have the opportunity to test the turbine in a wind tunnel — currently under construction — that was designed by the team for the purpose of this competition. Having both these resources close by will allow Wildcat Wind Power to produce a highly efficient turbine.

The team's greatest strength is its diversity of backgrounds and skill sets. It is comprised of eight mechanical engineering students, 12 electrical engineering students and three students in the College of Business. Of these, nine are returning members. Wildcat Wind Power consists mostly of junior- and senior-level students, but also has multiple underclassmen, as well as guidance from a returning graduate student. With the collaboration among these diverse group members, they hope to create a competitive turbine that performs exceptionally well at the Collegiate Wind Competition 2016.

One of Wildcat Wind Power's largest challenges is a total redesign of many of the turbine components used by the 2015 team. Also, as a volunteer group, the team needs to balance the schedules of several groups so they can come together to complete the final design.

One of the most important things teams can take away from the Collegiate Wind Competition is the interdisciplinary experience gained from completing a project from start to finish with other engineers. Teams also gain invaluable hands-on design experience and insight to the organization of projects in professional careers. Through networking with professionals in the industry, team members form connections that will be beneficial to their professional careers.

Members also hope to apply classroom knowledge to actual design work. They have an opportunity to work with individuals outside their disciplines and bring perspectives together on a project. These are invaluable opportunities to have before entering the professional workplace. An outcome from this experience is that team members will improve practical skills such as circuit design and layout, soldering and exposure to design software.



Team roster: Tanzila Ahmed, Lawryn Edmonds, Jacob Meyer, Michael Banowetz, David Plenert, Timothy Sample, Stephen Debes, Connor Krause, Andrew Johnson, Sshangxian Wang, Mark Ronning, Armando Marquez, Alex Thibault, Broden Bowell, Lee Evans, Justin Currence, Aaron Akin, Justin Mann, Ben Schmanke, Grant Ferland, Alex Ackley, Jared Baker, Tyler Schmitz, Fang Wan and Matt Weisbrod



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Mark and Brenda Brown
Randy and Jacquie Coonrod
Ruth Coonrod*
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Jeff Dougan
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Susan Koester
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John McKinney
Gerald Miller
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Krishna and Usha Shekar
Tim Sobering
John Tripp
Dale and Bobbie Utterback
Brick Verser

* = deceased

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Members of the electrical and computer engineering advisory council met in April 2016.

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