K-State Engineering
Our Graduate Students

Graduate Student Appreciation Week

The College of Engineering Office of Research and Graduate Programs hosted many events during Graduate Student Appreciation week, April 6 through April 10.

Monday started off with an open-house event in the ERGP office that provided engineering graduate students with donuts, fruit, orange juice and coffee. The same was provided in Nichols Hall for CIS graduate students. Overall, attendance was more than 50 people.

On Tuesday, Associate Dean Schulz answered questions from grads and undergrads in the atrium over the lunch hour. There was also an opportunity for students to fill out an “Engineering grad school at K-State is great because” sticker to place on the atrium wall.

Wednesday included the university’s graduate student recognition and awards reception in the main classroom, College of Engineering faculty and staff honored for patents received between the years of 2009 - 2014. The College of Engineering was recognized for receiving nine patents, involving 15 of our outstanding faculty and staff.

Thursday ended with an ice cream social in the engineering atrium, serving everyone’s favorite, Call Hall ice cream. Thank you to our guest scoopers, IMSE department head Brad Kramer, CHE department head Jim Edgar and BAE professor Danny Rogers.

Meet our staff

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Associate Dean for Research and Graduate Programs
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Did you know?

In May 2013, ERGP initiated the first network meeting for staff working with sponsored projects and programs within the college’s departments, centers and institutes. The network’s goal is to assist staff in managing administrative tasks as they relate to research grants and other sponsored programs with the help of presentations from campus experts.
The Engineering Research Staff Network also offers the opportunity for staff to share individual best practices with staff from other departments. Network meetings also better equip staff to assist departmental faculty with the often unusual requirements of sponsored projects administration.
Topics have included post-award topics such as allowable costs and cost share, a human resources panel and overview of PreAward Services. Guest panelists and speakers have included staff from the Sponsored Programs Accounting Office, PreAward Services and Human Resources. The network group meets bimonthly throughout the year.

May 1, 2015

Upcoming events

5/7 — Fulbright information session
Purple Pride Room, Alumni Center
3:30 - 5:00 p.m.

5/11 — Final exam week

5/13 — K-State Research Facilities and Resources Showcase
Union Grand Ballroom
3:00 - 5:00 p.m.

5/15 — ENSG Graduate School graduation reception
IGP Conference Center atrium
10:30 a.m. - 12:00 p.m.

5/15 — Graduate School commencement
Brumage Coliseum
1:00 p.m.

5/19 — ENGG Graduate Student Advisory Council (GSAC) meeting
1044 Fiedler Hall
4:00 - 5:00 p.m.

5/21 — ENGG NSF CAREER workshop
2064 Rathbone Hall
9:30 - 11:30 a.m.

5/25 — University holiday

For more information about these events, please visit engg.k-state.edu/ergp/events

ERGP Newsletter

May 1, 2015

College of Engineering faculty and staff honored for patents received

The K-State Office of Vice-President for Research hosted a reception April 2 for faculty who have been awarded a patent between the years of 2009 - 2014. The College of Engineering was recognized for receiving nine patents, involving 15 of our outstanding faculty and staff.

The following faculty and staff were honored from the College of Engineering:

• Bala Natarajan
  Multiple-access code generation, September 2009

• James Edgar
  Metal oxide nanoparticles for smoke cleaning and fire suppression, February 2010

• Peter Pfromm
  Preparation containing nanoscale particles with electrostatically adhered enzyme, April 2010

• Mary Rezac
  Increasing rate of enzyme catalyzed equilibrium reactions, November 2013

• Steven Bellinger, Douglas McGregor, Eric Patterson and J. Kenneth Shultis
  Non-steaming high-efficiency perforated semiconductor neutron detector, methods of making same and measuring and wand and detector modules utilizing same, December 2010

• William Dunn
  Remote substance detection, December 2012

• James Edgar
  Off-axis silicon carbide substrates, September 2014

• Kyle Riding
  Encapsulated zinc compounds and methods for preparing and using same, November 2014

• B. Terry Beck, Bob Peterman, Chih-Hang Wu and Weixin Zhao
  Portable modular sensor for surface strain measurement, December 2014

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Engineering Research and Graduate Programs

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New staff in the ERGP office

The Engineering Research and Graduate Programs Office is excited to introduce Sarah Diamond as our new administrative specialist. Sarah has a bachelor’s degree in agricultural education with an emphasis in leadership and service, and a master’s degree with an emphasis in agricultural education, both from Oklahoma State University. She is currently working on her doctorate in educational leadership at Kansas State University.

Sarah has extensive non-profit leadership, event coordinating and administrative experience. She has spent the past five years working in various capacities as a volunteer and staff member of a local church, holding key leadership roles.

Sarah and her husband, Jeremy, have a five-year-old son, Dawson. She enjoys spending time with family, running, photography, traveling and riding horses. In spring 2014, she competed in her first marathon and quickly became addicted, which led to two additional marathons the same year. Her husband works for a local landscaping company. He has a strong livestock background, especially working in the cattle industry. In late March, Willie joined the family — a four week old “runt” calf weighing just 12 pounds at birth, who has become Dawson’s best friend.

Sarah is replacing Bethany Swinney, who recently moved into the program assistant position in the ERGP office. In her new position, Bethany will be working more closely with the graduate program, social media and research proposal preparation for the college.

Effi  e Swanson joined the Office of Research and Sponsored Programs – PreAward Services office in July of 2014 and serves as the primary point of contact for College of Engineering faculty members. She can be contacted for assistance in preparing proposal documents, budget assistance, interpreting proposal solicitation requirements, questions regarding the proposal and award process, or assistance in processing awards and modifications.

Effi  e can be contacted by email at effi e@ksu.edu, or by phone at 532-6804. The PreAward Services office is located in 2 Fairchild. Carole Lown (clown@ksu.edu, 532-5844) in ERGP is also available to assist untended faculty with proposal preparation as well as engineering faculty submitting grants over $1M.

Collaborative research highlight

While simple networks have been thoroughly studied, few results exist for interconnected networks, which abound in nature and in man-made infrastructures. Interconnected networks are an abstract representation where two or more simple networks, possibly with different and separate dynamics, are coupled to each other. Caterina Scoglio, ECE professor, as part of her research with interconnected networks, utilizes services provided by other K-State centers and units, as well as external groups.

One of the main research areas of the Network Science and Engineering (NetSE) group, in the ECE department, is the study of fundamental theoretical properties of interconnected networks and their multiple applications. The NetSE group has well-established collaborations with interdisciplinary units and resources at K-State such as the Institute of Computational Comparative Medicine (ICCM), Nanotechnology Innovation Center (NICKS) and Excellence for Emerging and Zoonotic Animal Diseases (CEEZAD), and with international partners at TU Delft-the Netherlands and University of Girona-Spain. Other core faculty in the NetSE group include Don Gruenbacher, ECE department head and professor, and Faryad Darabi Sahneh, ECE research assistant professor.

Less than a year ago in July 2014, Scoglio and Sahneh received an award of $499,542 from the National Science Foundation for a Communication and Information Foundations (CIF) project, “CIF: Small: Spreading Processes over Multilayer and Interconnected Networks.” The goal of this project advances the boundaries of network theory by analyzing spreading processes over multilayer and interconnected networks, about which most existing questions remain unanswered.

Within a few months Scoglio and Sahneh received an NSF Rapid Response Research (RAPID) award of $137,209, “RAPID: Effectiveness of contact tracing for detection of Ebola virus during early introduction of the virus within the USA.” The NetSE group research closely coincided with the NSF call requesting non-medical, non-clinical Ebola studies. As the name implies, NSF uses the RAPID program to fund projects that are of severe urgency as with the outbreak of the Ebola virus. The goal of the project is to evaluate risk-detection capabilities of contact tracing efforts for Ebola before the epidemic phase, and estimating the associated cost in potential scenarios.

Another application field where interconnected networks are powerful tools is modeling of zoonotic diseases. In this field, not only is the NetSE group continuing its modeling efforts of Rift Valley fever transmission for the DHS Center of Excellence for Emerging and Zoonotic Animal Diseases (CEEZAD), but Scoglio and her team have also been awarded $151,048 for the project, “Modeling Japanese Encephalitis in the U.S. using Interconnected Networks.” This project is in conjunction with collaborators at USDA-ABADRU and supported by the U.S. Department of Agriculture, Agriculture Research Service. Japanese encephalitis (JE) is an infectious disease caused by a virus transmitted by mosquitoes. Domestic and feral pigs, some species of birds, and humans are all involved in the transmission cycle of this very serious zoonosis. The adoption of an interconnected network approach to modeling JE allows the study of one portion of the system, taking into account the influence of other interconnected components, thus reducing the complexity of the model and the number of parameters considered at each step.

To learn more about Scoglio’s research, view her website at ece.k-state.edu/people/faculty/scoglio.html. For more information on how faculty can become more involved and potentially collaborate on research proposals with K-State centers and institutes, see the video recordings of previous research for faculty meetings at the ERGP website: engg.ksu.edu/ergp/development/genfacdev.html.

Safety highlight

Respirator use

Do you have any of these masks in your lab or work area?

If you use a respirator, ask yourself the following questions:

- Has a job hazard analysis been done to determine if use of a respirator is required?
- Have you had a medical evaluation to determine if you are physically fit to wear a respirator?
- Have you been trained on how to use a respirator correctly and safely?
- Have you been fit tested within the last 12 months?

If you answered NO to any of the above questions, you must notify your department for evaluation of the hazard. Use of any respirator by a Kansas State University employee is prior review and approval by Environmental Health & Safety (EH&S).

The ability of a respirator to provide adequate protection is based on proper selection, fit and training. Respirators which are intended for protection against harmful dusts, fumes, mists, gases, smoke or vapors must not be obtained or worn by employees without approval from the department and in accordance with KSU Respirator Policy.

Steps to respirator approval

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   a. Medical examination and questionnaire
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For more information or to obtain a copy of the KSU Respirator Policy, please contact EH&S at safety@ksu.edu or (785) 532-5856; or Jeff Gibsch at jgibsch@ksu.edu or (785)532-5474.
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PreAwards

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Prior to joining the PreAward Services team as a grants and contracts administrator, Effie managed a sponsored program for K-State’s Global Campus. She received a B.A. from Washburn University and a Master of Public Service and Administration degree from Texas A&M University.

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May graduates, faculty and advisers

Don’t forget to RSVP for the Engineering Graduate Student Graduation Reception by 5:00 p.m., Friday, May 8, 2015.

The reception will be Friday, May 15, 2015, 10:30 - 11:45 a.m., at the International Grains Program Institute, 1980 Kimball Ave., across the street from the Intercollegiate Rowing Center, with a short program at 11:00 a.m.

Light refreshments will be served and all graduates will receive a small gift from the college. Faculty and advisers, please RSVP to ergp@ksu.edu. Graduating students, please RSVP at gradrsvp.engg.ksu.edu.

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