Alumni Connections

IMSE alumni share career advice and provide mentorship for next-generation workforce

From her office in Atlanta, Georgia, Susan Van Houton, senior director of global sourcing for HD Supply Inc., logs online to connect with her mentee Hannah Tritschler, a senior engineering student at Kansas State University. They have been meeting in person and virtually since September 2014 as inaugural participants in the Professional Academy’s Mentor Program hosted by K-State’s industrial and manufacturing systems engineering (IMSE) department. In such a short time, they have already established a meaningful relationship even though they are separated by more than 900 miles.

Mostly using email and video chats to communicate, Van Houten and Tritschler meet regularly. During this time, Van Houten facilitates discussions, provides advice and offers Tritschler feedback based on her 20 years professional experience in wholesale and retail operations. Her ultimate goal is to act as a guide for Tritschler in the early stages of her career.

Their meetings, however, aren’t all business. They often discuss their shared love for K-State and passion for the great outdoors. By getting to know each other personally as well as professionally, they are both investing in a relationship that is intended to grow over time and could potentially last well beyond the program’s intended nine-month window.

In total there are 13 mentors and 14 mentees participating in the program. The academy’s goal is to provide IMSE students with an opportunity to learn from highly successful and experienced alumni.

“So far we have attracted mentors with career experience ranging from consultants to design engineers, and business owners to financial analysts in industries like health care, technology and manufacturing,” said Amy Martens, chair of the academy mentor subcommittee.

Mentors are K-State alumni who are members of the IMSE Professional Academy. Mentees are IMSE students with senior standing – 90 credits or more. The mentors and mentees were paired based on professional objectives and common interests.

Senior Ben Herbel was paired with Mark Miller, managing director at Accenture, because of his interest in technology and consulting. Miller has 22 years’ experience. “A mentor would provide me with someone to discuss future internship opportunities and possible jobs after graduation,” Herbel said in his program application. “It would also help me network with IE professionals and improve my resume and interview skills. I would like to develop an overall professional relationship with someone who can help guide me to opportunities fitting my future goals.”

While the program is intended to benefit students, the mentors have a lot to gain as well. “By participating in the program, mentors will be exposed to emerging talent,” Martens said. “It will also give them the chance to improve their leadership and management skills, while paying attention to the development of their own career.”

Implementing a mentor program was a natural fit for the Professional Academy, whose mission is to create an ongoing and vital opportunity for alumni and friends of the K-State IMSE department to connect with each other and to support the department while having fun. Within two years of operation, the academy’s vision has become a reality.

“We are all proud of our alma mater and want future K-State industrial engineers to shine brighter and make a bigger impact than we have,” said Dave Dohrmann, academy chair. “That’s why this program’s success is important to the academy and its members.”

(Continued on page 2)
From the department head

Recent forecasts rank industrial engineering (IE) among the fastest growing career fields in the world. This demand has already hit Kansas State University’s College of Engineering, where the majority of IE students secure jobs before graduation with starting salaries averaging more than $60,000 per year.

Industry professionals recruit K-State graduates specifically because of their proven ability to transition between prospective IE students to practicing engineers. This is a point of pride for our department and one we continually try to improve.

In October 2014, our faculty was presented with an opportunity to practice what we preach. We applied for a National Science Foundation (NSF) grant that challenged us to revolutionize the way students prepare to enter the workforce. Already doing a good job in this area, we knew we could do even better.

Moving forward, our goal is to develop “T-Shaped” engineers. Meaning, faculty will strive to prepare students with broad business, interpersonal, team and multicultural skills, as well as deep industrial engineering skills and knowledge in systems engineering, continuous improvement, and product and process innovation. This will be accomplished through a three-phase approach helping students: 1) identify as engineers early in their degree program, 2) understand the need for their own professional development, and 3) connect classroom learning to real application and practice. Critical to these efforts will be the integration of our Manufacturing Systems Design and Analysis (MSDA) course across the curriculum.

Our efforts are highlighted in this edition of Alumni Connections starting on the cover page with the Professional Academy’s new mentor program. Then on Page 4 the Advisory Council explains how IMSE alumni, like you, can get involved in our new initiative and help pave the way for radical change. Lastly, on Page 5, read how faculty member Malgorzata Rys partnered with industry in her IE ergonomics class to develop a new workforce training tool.

Stay informed on our progress at imse.ksu.edu. If something sparks an idea online or within these pages, let us know. Your professional input would be most welcomed.

Sincerely,

Bradley A. Kramer
Professor and Department Head
Industrial and Manufacturing Systems Engineering

The mentor program is just one of many activities offered by the academy in support of the IMSE department. In previous years the academy has hosted social gatherings for alumni to reconnect and network over dinner, golf and bowling. Additionally, the academy offers students an annual workshop with varying topics based on academy members’ professional expertise.

Members meet biannually and are required to make a small donation to the department each year. Alumni interested in joining the group or serving as a mentor are invited to attend the academy’s next meeting scheduled for spring 2015. Email imse@ksu.edu or call 785-532-5606 to learn more.

Recruitment for new mentors will begin in May, with an intended launch date of September. More details available at imse.ksu.edu/mentor/academy.

2015-2016 Professional Academy

Chris Althoff, Invoient LLC; Sara Coash, Hallmark Cards; Bob Davis, Anheuser Busch Co. Inc. (retired); Dave Dohrmann, D.A.D. Manufacturing Inc.; John English, University of Arkansas; Doug Gish, Deloitte Consulting; Kyle Grabill, Garmin International Inc.; Perry Henry, HENT Inc.; Patrick Hessini, CHS Inc.; Jeffrey Hopkins, Netsmart; Todd Lakin, Accenture; James Lee, Frontier Electronic Systems Inc.; Larry Loomis, Marion National Bank; Amy Martens, Blue Cross Blue Shield of Kansas; Kenneth Norton, Deloitte Consulting LLP; Ryan McGuire, JB Hunt Transport; Mark Miller, Accenture; Anita Ranhotra, Hallmark Cards; Justin Salmons, Cessna Aircraft; Larry Strecker, Strecker Consulting LLC; Susan Van Houten, HD Supply Inc.; Tony Veith, Spirit Aerosystems Inc.; Julie Vick, P&G; Ken Ward, Centres LLC.
Using Kansas farm waste to manufacture an alternative fuel source

When Meng Zhang pictured his new home in America from his city apartment in China, he visualized Kansas prairie grass scattered amongst endless fields of corn and wheat. These crops, he imagined, would be used to feed the world—not fuel the world.

Five years later, in his lab at Kansas State University, Zhang hovers intently over his size-reduction mill to condense switchgrass biomass and farm waste such as wheat straw and corn stover into raw materials for biofuel production. He is trying to find the optimal size needed to turn these particles into biofuel, while limiting the energy consumption used in the size-reduction process.

Zhang, a postdoctoral researcher, is on the rise as a leading expert in sustainable energy manufacturing under the direction of Z.J. Pei, professor of industrial and manufacturing systems engineering, and Donghai Wang, professor of biological and agricultural engineering.

"Today’s economy and society are dependent on liquid transportation fuels, with 90 percent of U.S. consumption petroleum-based and 55 percent imported," Zhang said. "Future demand will likely remain the same, if not increase, so it is imperative we develop alternative fuels that are domestically produced and environmentally benign."

Researchers have already discovered that cellulose extracted from natural resources such as plants, grass and trees can be used to make ethanol, but current technology makes this process cost prohibitive.

Zhang is a co-principle investigator on a National Science Foundation-funded research project that seeks to find cost-effective ways to manufacture cellulosic biomass. He began collaborating on this project four years ago as a doctoral student with Pei and Wang. The project has generated more than 30 publications so far.

“Our team relies on Zhang to study the relationship between cellulosic biomass particle size and enzymatic hydrolysis sugar yield,” Pei said. “A smaller size seems to have more benefits in biofuel conversion. The issue, however, is that it takes a lot of energy to reduce the particle size due to the large physical mass and strong structure of the biomass feedstock.”

Through his research, Zhang has found that currently there is no common method for determining the optimal particle size for reduction. As a result, he believes that manufacturers may be putting more energy into the production process than is necessary.

“This can be an expensive mistake,” Zhang said.

Understanding the size component is critical to finding cost-effective solutions. Zhang’s results are becoming increasingly more important as manufacturers race to meet the U.S. government’s recent mandate of 16 billion gallons of cellulosic biofuel production annually by 2022.

Zhang and his team are among some of the first to do research of this kind. Their outcomes have the potential to significantly advance industry knowledge.

“From day one this project intrigued me, but it was very much outside of my comfort zone,” Zhang said. “I had to educate myself first on the bio and agricultural component before I could apply my manufacturing background.”

Zhang immediately found that technological roadblocks were hindering the production of biofuel, even though support from government agencies and private investors was in abundance.

Knowing that my research has the potential to make a huge impact,” he said, “is what keeps me determined to find a better solution.”

Each day Zhang and his team are finding new answers for the production of biofuel and their results are filling gaps in current literature. Soon they hope to offer a method—a toolbox of sorts—to industry professionals that will guide strategic and operational decisions for cellulosic biomass manufacturing.

“Imagine our transportation industry fueled by U.S. farm waste instead of petroleum from a foreign provider,” Zhang said. “Renewable fuel in abundance is a near future reality and I’m excited to be part of the innovation leading the way.”

STUDENT AWARDS

IMSE doctoral student awarded engineering scholarship

Xiaoming Yu, China, is the recipient of the 2014-2015 Robert I-Jen and Sophia Shui-Kan Jung Graduate Scholarship in Engineering. The scholarship recognizes superior dedication to education and research at Kansas State University as a student from the People’s Republic of China or Republic of China. One outstanding doctoral student receives this $6,000 award annually. Yu joined the IMSE department in spring 2011 with a B.S. in physics from Nankai University. His research focus is manufacturing with ultrafast lasers.

IMSE student awarded undergraduate research award

Bryce Garver, Basehor, Kansas, was one of four students to receive the Undergraduate Research Experience award presented by Kansas State University’s College of Engineering. Garver will use the $2,500 grant to research optimal stockpiling decisions for medical supplies that are used by state and local public health departments, hospitals, and emergency medical service providers during emergencies, such as pandemics. This project will be conducted in collaboration with the Kansas Department of Health and Environment (KDHE) Bureau of Community Health Systems.

Neely awarded national scholarship

Kyle Neely, Lenexa, Kansas, earned a national scholarship from the Material Handling Education Foundation. Neely is among 28 students nationwide to receive a foundation award that recognizes superior academic achievements. To date, 36 IMSE students have received scholarships from the Material Handling Educational Foundation. Neely is a senior in the IMSE department’s concurrent bachelor’s and master’s program.
Dear Fellow Alumni,

At the Advisory Council’s annual meeting, we were honored to meet Darren Dawson, the new dean for Kansas State University’s College of Engineering. Here, Dawson shared his future goals in support of the University Engineering Initiative Act (UEIA) and K-State 2025. He reported a record enrollment of 3,500 students, highlighted the anticipated opening of the new engineering building in September 2015, and ensured his support for increased faculty positions. All of which are steps he is taking to support the demand for future engineers.

We were pleased to find Dawson’s goals fit well with our committee’s future intentions for the industrial and manufacturing systems engineering (IMSE) department. Moving into the new year, we are particularly concerned with addressing the department’s rapid growth since 2007. Over the past seven years, enrollment has increased from 16 to 55 new students annually. Dawson shared his aggressive recruiting goals with us, so we know this number will continue to increase.

With this expected growth, the IMSE department plans to relocate to space vacated by the electrical and computer engineering department in Rathbone Hall. This area will require renovation to meet the demand for new technologies and state-of-the-art labs/facilities. This will be especially important as the department works to revolutionize its curriculum and the way it is taught (see From the department head, Page 2).

The faculty envisions a new lab at the heart of their entire curriculum, from introduction to industrial engineering to manufacturing systems design and analysis. With your help, the Advisory Council will strive to turn this dream into a reality for the department.

Start by sharing your ideas with the faculty. They want to hear from you, as practicing professionals, on ways to improve undergraduate education. Specifically, what techniques can be implemented to help students identify as engineers early into their degree program? Also, consider consulting with your employers to see if there are opportunities to engage K-State IMSE students in industry projects.

Next, contact Lori Rogge at the K-State Engineering Foundation to make a donation in support of facilities and enhancement. Inquire about utilizing your company’s matching program. There are many ways to give back, but we need you to take the first step to make it happen.

If you would like to get more information, we highly encourage you to reach out to Brad Kramer. He would be happy to explain how the faculty is poised to meet the demands of their growing department. Call today to learn more, 785-532-3722. The Advisory Committee is committed to help. Are you?

Regards,

Michelle Schlie
IMSE Advisory Council Chair

2015-2016 Advisory Council

- Chris Althoff, Invovent LLC
- Kristine Amy, ExxonMobile Chemical
- Catherine E. Boltz, Honeywell
- Brian Brooks, Lockhead Martin Aeronautics
- Reuben Burch, FedEx
- Jay Christensen, JCPenney
- Sara Coash, Hallmark Cards
- Laura Cramer, Otterbox
- Dave Dohrmann, D.A.D. Manufacturing Inc.
- Kelly Foster, Hormel Foods Corp.
- Kyle Grabill, Garmin International
- Darren Haverkamp, Hills Pet Nutrition/Colgate-Palmolive
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- Kenneth Norton, Deloitte Consulting LLP
- Justin Salmons, Cessna Aircraft Co.
- Michelle Schlie, Frito-Lay
- Simeon Terry, Austin Commercial LP
- Susan Zidek Van Houten, HD Supply Inc.
K-State IMSE’s ‘Respect the Ladies’ campaign selected for new workforce training program

College of Engineering students Ava Clark, Andrea Hopkins, Larissa Dettemer and Ian Ostenberger introduced Vicki and Tina to their industrial ergonomics class during a presentation that challenged them to design a workforce campaign for a Kansas State University industry partner. Their recommendation could hypothetically save the company $250,000.

“Handheld tools such as scanners often get misused by employees in large companies,” said Reuben Burch, K-State alumnus and Industrial and Manufacturing Systems Engineering Advisory Council member. “This costs businesses hundreds of thousands of dollars to repair or replace each year.”

Burch is looking to solve this exact problem. To help, Burch decided to solicit support from students from the industrial engineering departments at Kansas State University and Mississippi State University. Both schools were asked to submit ideas for a training tool that would complement the “It’s YOUR Device” campaign designed by Burch’s company.

“We were told the organization wanted their workers to feel a sense of ownership toward their handheld devices,” Dettemer said. “So we decided to apply anthropomorphism to the campaign, which essentially just ascribes human form or attributes to animals, plants or material objects. An example of this would be like when you name your car or GPS system.”

This idea resulted in the “Respect the Ladies” slogan. Dettemer and her team suggested it be used as a tool within the “It’s YOUR Device” campaign. In their presentation, they recommended that the company label each tool with a woman’s name to help the workers feel more personally responsible for the welfare of the device.

“It’s easy to carelessly drop a scanner, but a worker will think twice before letting Tina fall to the floor,” Ostenberger said.

Out of 20 submissions ranging from memes to catchy slogans, Burch and his executive leadership team selected “Respect the Ladies” as the winner because of its worker appeal.

“Selecting a winner was extremely difficult as all options clearly emphasized the message and purpose we were searching for,” Burch said. “But the winning idea humanized rugged handheld equipment in a way that all employees can appreciate regardless of age, gender, culture or job title.”

Burch and his team plan to take this positive message and turn it into an internal training program where Vicki and Tina star as the leading ladies needed to help his employees get their jobs done effectively.

“There’s a lot of promise here,” Burch said “and we can’t wait to give it a try. Thanks K-State!”

For more information on these and other events, visit our website: imse.k-state.edu
Known as an expert in the field of ergonomics, Stephan Konz made a difference in his field and at Kansas State University. The professor emeritus in the Department of Industrial and Manufacturing Systems Engineering (IMSE) died Dec. 2, 2014, at the age of 81.

Konz joined K-State’s IMSE department in 1964, where he was soon recognized by his students and co-workers as an outstanding faculty member. For about 60 IMSE students, he acted as major professor and mentor. His passion for education was so great that he established the Stephan Konz Scholarship to support those pursuing an IMSE degree at K-State.

“Steve was a great colleague and friend,” said Bradley Kramer, IMSE professor and department head. “Even today, when I travel and tell people I’m from K-State, they say something like, ‘Oh, that’s where Steve Konz was from.’ He was a widely respected researcher, a thorough and challenging mentor, and an outstanding teacher. He will be sorely missed.”

Konz earned a bachelor’s degree in industrial engineering from the University of Michigan and his master’s degree in business and doctorate in industrial engineering from the University of Iowa. During his tenure at K-State, he was honored as a fellow of the Human Factors and Ergonomics Society as well as the International Ergonomics Association. He published more than 200 papers in journals and authored two textbooks, Work Design and Facility Design. Work Design, published in several languages, is used at more universities than any other book in its field.

Konz will be remembered by his family, friends, students, peers and colleagues for his love of travel, reading, family time and for his personal mantra: “work smart.” He is survived by Maureen Konz, his wife of 56 years. In his honor, the family is requesting donations to the Stephan Konz Scholarship be made online at www.found.ksu.edu or by contacting the KSU Foundation toll-free at 800-432-1578.

The IMSE department will collect Konz remembrances to be featured in our summer issue of Alumni Connections. Include your testimonial by emailing imse@k-state.edu.

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**Engineering assistant professor selected for National Science Foundation-funded fellowship program**

Jessica Heier Stamm, K-State assistant professor of industrial and manufacturing systems engineering, has been selected for the National Science Foundation-funded fellowship program Enabling the Next Generation of Hazards and Disasters Researchers. The fellowship supports the careers of junior faculty through structured mentoring and networking opportunities with other interdisciplinary researchers in the field.

Ten leading scholars will provide mentoring in hazards and disasters research for the 22 competitively selected fellows. Program activities will include writing scholarly articles, book proposals and grant proposals. The fellowship also covers travel expenses for three required workshops in 2015 and 2016.

“I look forward to this opportunity to network with peers and senior faculty who have similar research interests,” Heier Stamm said. “Working with experienced mentors can help improve my research program and success in generating funding for research, as well as provide guidance on how to better prepare students for this interdisciplinary work.”

She will use the opportunity to expand her current research in decentralized systems design and analysis, where her focus is on preparing for and responding to disasters that affect human, animal and environmental health.

Heier Stamm joined the College of Engineering in 2010 following completion of her doctoral degree in industrial and systems engineering from the Georgia Institute of Technology. She earned her bachelor’s degree in industrial engineering from Kansas State University.

**Rys recognized as outstanding faculty member**

Malgorzata Rys, associate professor, was recognized by Mortar Board Honor Society as the Engineering Professor/Advisor of the year. This honor is awarded annually to one faculty member per college. Faculty members are selected based on their dedication to student success and their contributions to the university.

The IMSE department will collect Konz remembrances to be featured in our summer issue of Alumni Connections. Include your testimonial by emailing imse@k-state.edu.
Multitasking is a professional skill that engineering student MaryLynn Griebel has already mastered. Her typical day at Kansas State University includes attending classes, leading her Kappa Kappa Gamma sorority, volunteering as a student officer and training for her third half-marathon. All leadership qualities, indeed. But her involvement in K-State’s Center for Risk Management Education and Research program is what really sets Griebel apart from her peers. Selected as a 2014-2015 student fellow, this program could help Griebel land her dream job.

“Today, industry professionals are looking for graduates who know how to accept and prepare for change,” said Chris Althoff, K-State alumnus and partner of Invoyent. “Change is inevitable, but successful professionals know how to expect it, plan for contingencies and calmly manage the plan—and team—through even the roughest seas.”

These are the type of skills Griebel is learning as a participant in the risk management program. As a future industrial engineer, Griebel offers a unique perspective to her interdisciplinary teammates who have backgrounds in finance and food science. Together they have been tasked to solve a real-world business problem for a K-State industry partner.

“We are working with a large-scale animal health company to develop a risk management model to decrease the chances of food product recalls,” Griebel said. “My role is to conduct a literature review that is focused on human health due to a food product recall in order to quantify the effects.”

Griebel performed similar assessments as a summer intern for both GE Aviation and BNSF Railway. While her job responsibilities were vastly different, the engineering techniques she used remained the same. At each company she was tasked to apply advanced analysis techniques to complex problems and use the results to recommend change.

“I found out quickly that the skills I’m learning and acquiring are highly transferable to any industry,” Griebel said. “That’s why I have been able to jump from aviation to railway and now into food safety.”

Griebel’s risk management project is essentially an extended internship with the added benefit of seeing her project through from start to finish. Yet, as a risk management fellow she will also be challenged to navigate team dynamics, juggle ever-changing deadlines and withstand last-minute decisions under the pressure of real-life consequences.

“I’m up for the challenge because I know this experience will prepare me for a career that focuses on completing projects successfully,” Griebel said.

While industrial engineers are in high demand, few will enter the field with Griebel’s risk management credentials and proven track record for success. Griebel is scheduled to graduate in spring 2016 with a joint B.S. and M.S. in industrial engineering. To learn more about the industrial and manufacturing systems engineering partnership with the Kansas State University Center for Risk Management Education and Research program, visit k-state.edu/riskmanagement.

Invest in IMSE

To learn how you can support the people, places and programs of K-State engineering, please contact the development office at danielley@found.ksu.edu or 785-532-7609.

Did you know?

Your employer may offer the opportunity to make an even bigger difference for IMSE students and faculty. Many companies provide employees the benefit of a gift match, sometimes as much as two-to-one. It’s easy to make your gift go further at K-State by taking advantage of the matching benefit. Contact your human resources department or visit www.found.ksu.edu/match to learn more.
Alumni invited to reconnect at Open House 2015

The K-State College of Engineering Open House has been a time-honored tradition for more than 90 years. This year’s festivities are scheduled for Saturday, April 11.

The industrial and manufacturing systems engineering (IMSE) department uses this time to host a luncheon to reconnect with former classmates, meet fellow alumni, and engage with current students and faculty.

Last year, we were particularly excited to welcome back Jim Gerner, class of ‘58, and his wife, Marg. Gerner was among the first to graduate from K-State with an IE degree. It had been 15 years since he’d last visited campus. More than 100 people also trickled in and out of the IMSE department throughout the day for food and refreshments.

“Every year the IMSE faculty and staff look forward to this special day,” said Brad Kramer, IMSE professor and department head. “It’s an opportunity to celebrate past successes and pay tribute to those who continually bring honor to the department.”

This year’s luncheon will be Saturday, April 11, in 2036 Durland Hall from 11:30 a.m. to 1 p.m. Alumni, family and friends are welcome to attend. For more information or to RSVP, please call 785-532-3720 or email imse@k-state.edu.

In addition to the luncheon, alumni are encouraged to view the student displays, tour the engineering complex and visit the vendor booths. Activities will be available for people of all ages and interests. To learn more about the College of Engineering’s Open House activities, visit www.engg.ksu.edu/steelring. To learn more about the All-University Open House, visit k-state.edu/openhouse.