

KENTUCKY ENGINEERING JOURNAL

UNIVERSITY OF KENTUCKY COLLEGE OF ENGINEERING

SPRING 2021



REBECCA LIEBERT

Paving the way for future engineers
from Eastern Kentucky



On February 27, 2021, the University of Kentucky College of Engineering hosted its annual Engineers Day (E-Day) celebration—with a twist.

Like most traditional in-person events, E-Day needed to shift to the virtual sphere. Nevertheless, E-Day Live! presented by Lexmark offered a unique experience to everyone who attended. It featured six hours of continuous live programming, ranging from shows hosted by student organizations to on-demand content and interactive exhibits requiring only common household objects.





“Our college community is a resilient bunch who realize that their physical, mental and spiritual well-being is essential.”

MESSAGE FROM THE DEAN

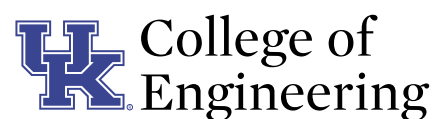
We are roughly three months into 2021, but our challenges have not been relieved. If anything, they continue to transform and amplify.

We’ve been coping for nearly a year with stressful circumstances. So, to open the semester, the college leadership felt it was important to take the temperature of the college community and see what we might be able to do to better support one another. We put together a short survey and have now gotten back the results. We’re still working through the responses, but it is already clear that this past year’s health, economic, social and political crises have taken a big toll.

It is equally clear that our college community is a resilient bunch who realize that their physical, mental and spiritual well-being is essential for coping with the rigors of teaching and learning the engineering disciplines. Our group has been relying on routine, exercise, nutrition, relationships, restful sleep, relaxation and prayer, among other approaches to rejuvenate. These are good and effective approaches that we already know but too often set aside.

As we begin to circulate these results, we hope they will remind us to be intentional about attending to our well-being. As engineers—whether students, faculty or alumni—we learn and practice in competitive circumstances. We tend to find that intense effort and laser focus are pathways to success. We believe there is very little we can’t figure out, and if we don’t know the answer, we can work our way to it. Asking for help is not the first thing that comes to our minds. These can be big burdens to carry by oneself under normal circumstances.

This takes us back to prioritizing our well-being. Most of us already know what to do to take care. All we need to do is make time and space for ourselves and give time and space to one another to engage in restorative pursuits so that when we need to be intense and focused and successful, we are ready to be just that.



Sincerely,
Rudy

Rudy Buchheit
Dr. Rebecca Burchett Liebert Dean

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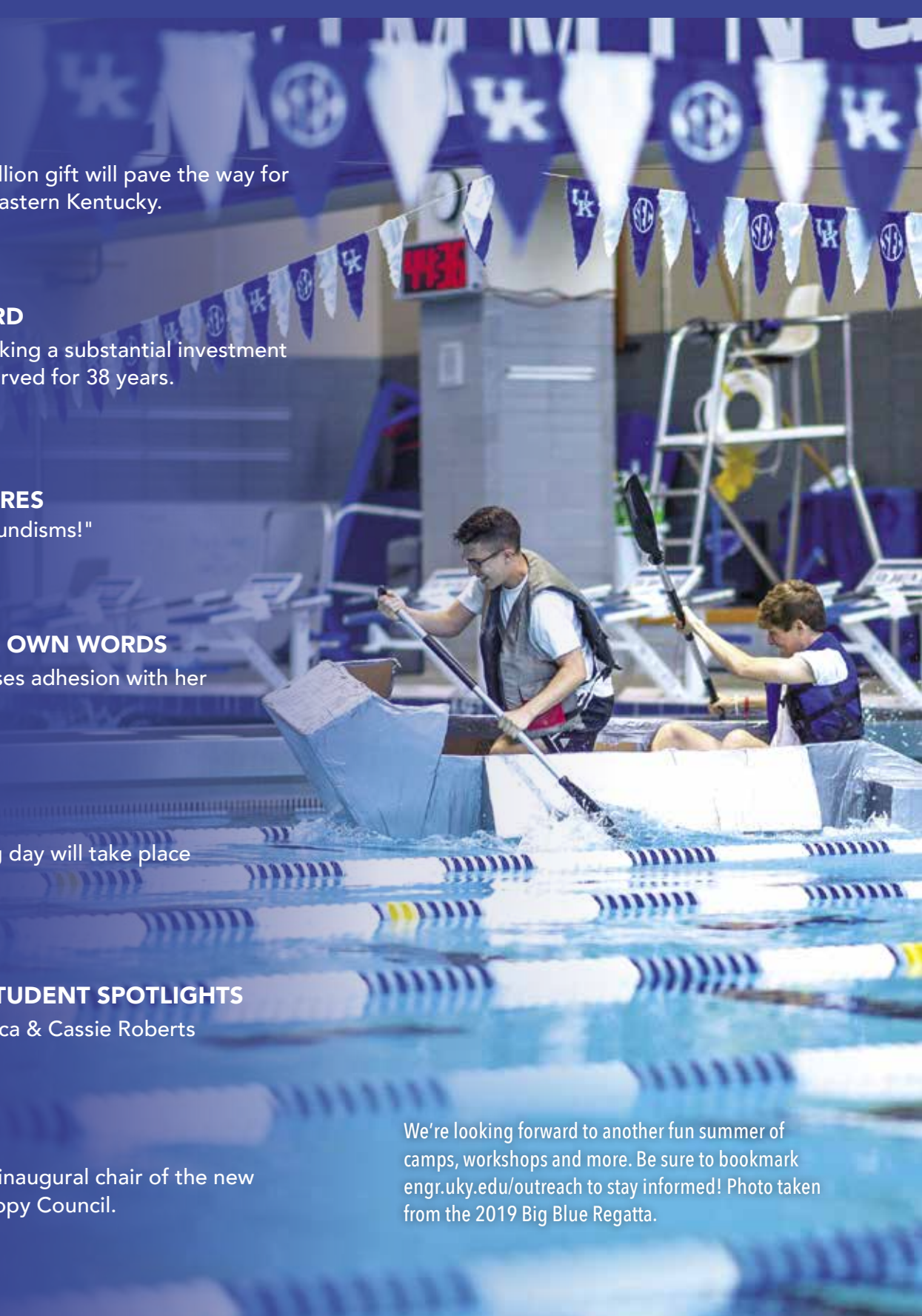
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ALUMNI SPOTLIGHT

Michael Graehler is the inaugural chair of the new Young Alumni Philanthropy Council.

We’re looking forward to another fun summer of camps, workshops and more. Be sure to bookmark enr.uky.edu/outreach to stay informed! Photo taken from the 2019 Big Blue Regatta.



PAINT IT BLUE

Rebecca Liebert's (BSCHÉ 1990) strong ties to the University of Kentucky have culminated in a \$6 million gift that will pave the way for future engineers from Eastern Kentucky.

Kel Hahn and Meredith Weber

When PPG executive vice president Rebecca Burchett Liebert considers the shaping influences in her life, she remembers her maternal grandmother, "Mimi."

Mimi spent many days babysitting Liebert and her siblings, as well as helping on the Burchett family's farm in Paintsville, Kentucky. She milked cows, took care of chickens and even made sure the electric fences stood intact.

"She was like MacGyver," says Liebert. "Mimi could fix almost anything with a hoe, hammer, wire or seagrass string."

Mimi's wits were put to the test when an accident crushed her right leg. A doctor prophesied she would never walk again.

Mimi replied, "Well, doctor, that's just not going to work because I've got five grandbabies to raise, and I can't do that in a wheelchair!"

Mimi lived to be weeks from 97 and walked until the last few years of her life.

"Even when she was in a brace and in bed after the accident, Mimi would command, 'Bring me some beans to string! Bring me some socks to darn!' She did something every day she lay in that bed," Liebert recalls.

Resourcefulness. Industriousness. Resilience. All describe Liebert, who like Mimi, isn't big on sitting still.

"Transformation is the only constant," says Liebert, "There's always a way to do better. If you think you have a company or a process you can't improve upon, you're going to stagnate."

In December, Liebert announced her intention to help the

University of Kentucky College of Engineering continue its transformation in the area of diversity, equity and inclusion by donating \$6 million to provide scholarship support to undergraduate students from Eastern Kentucky, with an emphasis on supporting female students and those who would strengthen UK's commitment to diversity and inclusion. The result is the newly established Dr. Rebecca Burchett Liebert Dean's Fund in the College of Engineering.

"I am incredibly proud I can provide this gift to the University of Kentucky, but it is so much more than just a gift—it is an investment in securing a diverse future for the College of Engineering," Liebert said upon the UK Board of Trustees' acceptance of her gift. "I am convinced we can continue to make a difference in the lives of future UK students from Eastern Kentucky."

In recognition of her commitment, the dean of the College of Engineering will hold the "Dr. Rebecca Burchett Liebert Dean's Chair." Dean Rudy Buchheit is proud to be the inaugural holder.

"Dr. Liebert's gift is gratifying in many ways. She is from a family that values education and the opportunity it creates," Buchheit stated. "Her example will inspire many future generations of Kentucky students and reminds us of the important contributions of women who are leaders in our field and the need to continue to strengthen diversity."

"This transformative gift will not only elevate the field of engineering but reflects our mission to create a diverse, vibrant community with the most talented students from right here in the Commonwealth," UK President Eli Capilouto added. "Dr. Liebert is opening the doors of UK to young women in Eastern Kentucky aspiring to become engineers and making their dreams a reality. I am beyond grateful for

PHOTO CREDIT: PPG





PHOTO CREDIT: PPG

her generosity and her commitment to providing affordability and accessibility to higher education to help build our next generation of leaders."

Founded in 1883, PPG is a global maker of paints, coatings and specialty materials. Headquartered in Pittsburgh, the company boasts 47,000-plus employees in over 70 countries. As executive vice president for the \$15.1 billion business, Liebert is focused on engineering the best paints and coatings for the global automotive industry and the company's mobility initiatives. She also leads global operations for the industrial segment, the procurement function and the Asia Pacific region.

As a high school student, however, Liebert aspired to the medical field.

"Before arriving at UK, I had planned to obtain a chemistry

degree and then apply to medical school, but through a chance meeting on campus with some chemical engineering students, everything changed," Liebert explains. "As a math and science junkie, this happenstance meeting made me realize engineering was my passion. That put me on my path to earning a degree in chemical engineering."

Liebert employed three "P's" to succeed in college: planning, project management and not procrastinating. Kim Anderson, associate dean for administration and academic affairs and professor of chemical engineering, taught Material Balances during Liebert's spring semester of her sophomore year. At the end of the term, Anderson—then assistant professor Kimberly Ward—issued Liebert a "B."

Dismayed, Liebert went to her professor's office and explained that this was the first "B" she had received—in her life!

"I was very nervous given this was my first encounter with an upset student," says Anderson. "But I remained firm on giving her the 'B.' However, I do remember thinking, 'Wow, she is going to go far. She really knows how to speak up for herself.'"

Knowing her value and demonstrating a willingness to stand up for herself has remained a theme throughout Liebert's career. After receiving her Ph.D. from Carnegie Mellon in 1995, she began working in research and development at Nova Chemicals in Pittsburgh. She applied for several marketing jobs within the company but without success. Liebert's husband, Keith, suggested she pursue a Master of Business Administration (MBA) instead of trying to break through while in R&D.

Liebert liked the idea and applied to Carnegie Mellon's MBA program. It awarded her a full scholarship. That was all Liebert

needed to say goodbye to Nova Chemicals; she put in her two-week notice.

Shortly before her last day of work, Liebert's phone rang. The digital display revealed the caller was the president of her division. Liebert grew nervous; what could he want? She answered.

"Why are you leaving?" he asked.

"I want to go into the commercial side of the business, and I keep getting passed over for the marketing jobs," Liebert responded. "Carnegie Mellon is giving me a full scholarship for their MBA program. I can't pass that up."

The division president replied, "If you agree to stay, we'll send you to get your MBA anywhere you want to go and



PHOTO CREDIT: PPG



we'll move you into a merger and acquisition role, which will give you better commercial experience than a position in marketing."

Liebert agreed to those terms and remained at Nova Chemicals while commuting from Pittsburgh to Chicago on weekends to pursue her MBA from the Kellogg School of Management at Northwestern University.

In 2004, Liebert seized a new opportunity—becoming president of Alcoa's Reynolds Food Packaging and Kama divisions. She remained with Alcoa until 2006, when she joined Honeywell to become vice president and general manager of the electronic materials business. In 2012, Liebert was made senior vice president and general manager of Honeywell UOP, and in 2016, she was named president and CEO of the division.

Liebert joined PPG as senior vice president in 2018 and assumed her current role as executive vice president in 2019. This fall, Automotive News put Liebert among its "100 Leading Women in the North American Auto Industry," a roster released every five years.

In fact, Liebert impressed PPG's chairman and CEO, Michael McGarry, from the very beginning.

"From the first day I met Rebecca, two things stood out: She is a continuous learner with an insatiable desire to make things better, approaching both her professional and personal life with a similar mindset," says McGarry. "I have no doubt that Rebecca will continue to positively impact the business and educational world for years to come. All of us at PPG are proud to call her our teammate."

Although firmly established as an eminent executive and inducted into the UK College of Engineering's Hall of Distinction in 2014, Liebert still experiences periodic crises of

confidence. She calls it "facing the demons," a subject relevant to everyone.

"I came from Eastern Kentucky and thought I was never going to be as smart as those who came from New York or Boston or had a fancier upbringing," Liebert shares. "It took me a long time to get over that. I think that everyone needs to know it's OK to have those feelings, but you have to take charge of them and not let them take charge of you."

“Be yourself. If you receive my scholarship, I want you to get into something you're going to love to do for the rest of your life. The more you enjoy your work, the happier your family will be and the better off the people who work for you will be.”

Liebert's experience allows her to speak an encouraging word to women who will receive her scholarship and who may similarly struggle with confidence that they have what it takes to graduate from college—whether with an engineering degree or something else.

"Be yourself. If you receive my scholarship, I want you to get into something you're going to love to do for the rest of your life. The more you enjoy your work, the happier your family will be and the better off the people who work for you will be."

Thirty years after graduating from UK, Liebert's gift deepens a long pattern of friendship and involvement with UK. From ongoing mentorship and research partnerships with University Alumni Professor of Chemical Engineering Dibakar Bhattacharyya ("DB")—who, by the way, gave Liebert an "A" in his senior-level Reactor Design class—to past participation on the Dean's Advisory Council, Liebert says she has received much and is pleased to give much in return. She hopes her gift will inspire others who have enjoyed successful careers to consider how they might give back.

"There are a lot of folks out there who are where they are because of the college. I encourage each one to think about what's important to them, work with tax planners and the college's philanthropy officers as to what they can give, and consider what meaning such a gift could have for their life." ■

GEORGE BLANDFORD

UK alumnus, professor and department chair George Blandford (BSCE 1974; MSCE 1976) is making a substantial investment in the department he served for 38 years.

Kel Hahn

George Blandford shoots straight. If you ask him why he majored in civil engineering at the University of Kentucky after a year of junior college, he will be frank: His choice stemmed entirely from receiving a Transportation Scholarship from the Kentucky Transportation Cabinet. Without that aid, an engineering education at UK wasn't in the cards.

However, entering the civil engineering department via the Transportation Scholarship opened another door for him: structures.

"I've just always been mechanics-oriented," he explains. "While in Jim Wang's structural analysis class, I told him I had an interest in structures but was going the transportation route. He suggested I do both, but the summer before my senior year I decided I'd just jump all the way into structures instead. It offered more of the mechanics side of engineering, which I liked."

Blandford must have really liked it since he not only received his bachelor's



degree in 1974 but also earned a master's degree in civil engineering in 1976, a Ph.D. from Cornell University in 1981 and taught civil engineering at UK—specifically in the area of structures—for 38 years.

There's more: Recently, Blandford and his wife, Debbie, have committed \$2.5 million toward structures-related initiatives in the UK Department of Civil Engineering.

"I really hope this will give other people the idea that they can do these kinds of things," says Blandford. "Not just faculty but also alumni might decide, 'I want to do something like that for my old

department or program'—wherever they got the most from their time at UK."

The Blandfords are immediately establishing the Dr. George and Deborah Blandford Fellowship fund, which will provide summer funding for doctoral students involved in structural engineering research who were teaching assistants during the academic year. As part of their planned gift, the couple will establish two other funds: the Blandford Structures Group Endowed Professional Development Fund and the Blandford Structures Engineering Distinguished Professorship.

Can you detect a theme?

"Everything I do is for the structures group. I'm trying to compete with the 'Construction' folks," Blandford says with a laugh, acknowledging recent generous gifts to the Construction Engineering and Management division of the civil engineering department. "But also, Debbie and I wanted to leave a legacy, and the structures group was my home for 38 years."

In addition to his teaching and research responsibilities as a faculty member, Blandford served as chair of the Department of Civil Engineering for nine years. Reg Souleyrette, professor and current department chair, succeeded him in 2014.

"After nine years as chair, George left the department in great shape...and with some big shoes to fill!" says Souleyrette. "Much of the success we have had since then is due to the groundwork he laid. I am proud to carry on traditions he established, and I am thankful to Debbie and him for establishing this amazing gift to assure the future success of our structural engineering program."

Blandford still occasionally visits the UK campus when he's back in Kentucky. Faculty members Issam Harik and Lindell Ormsbee are among his closest friends, and Blandford considers their custom of grabbing lunch together among his fondest memories from his tenure at UK. Ormsbee joined the faculty in 1983, three years after Blandford.

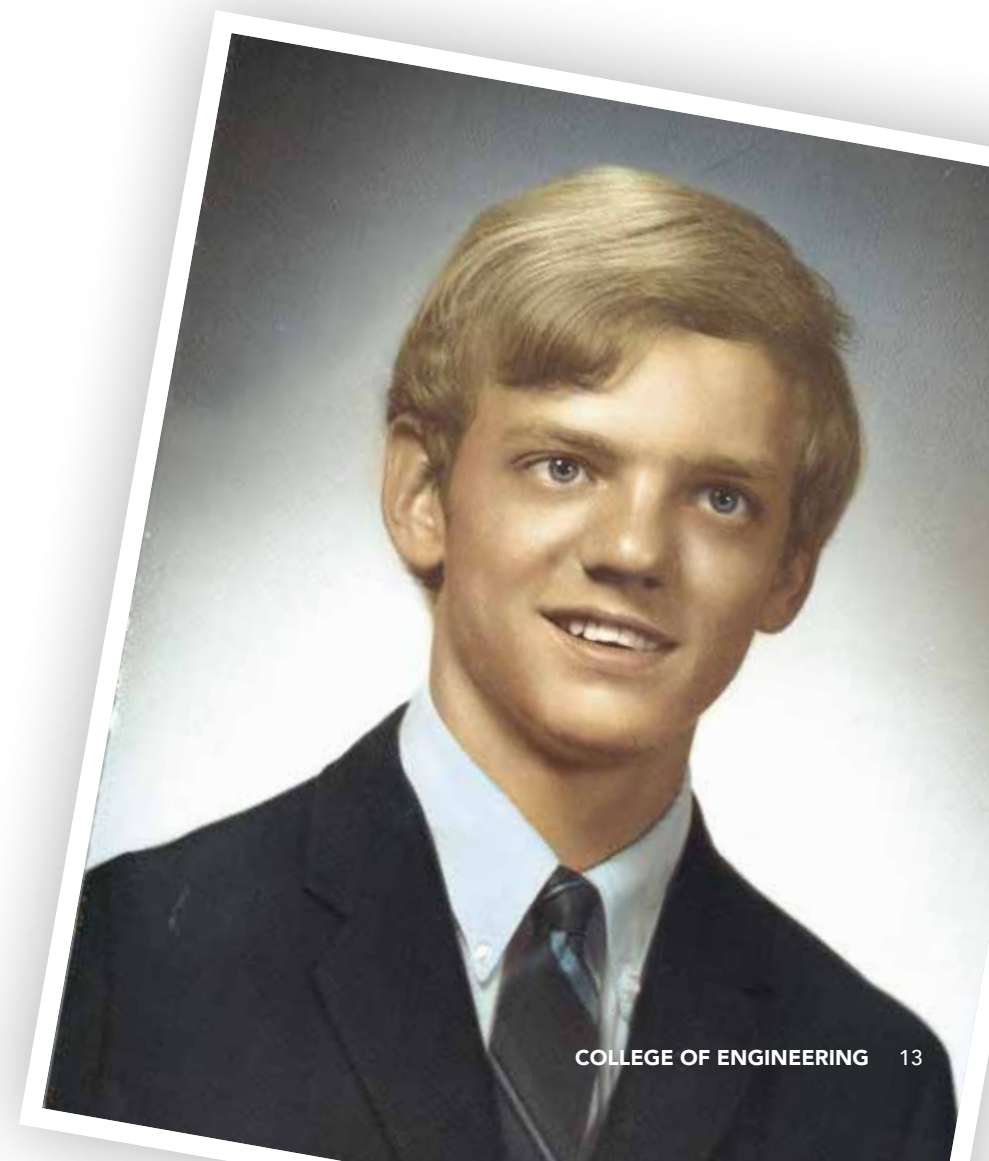
"George was the first person in our department to employ one of the first word processing software packages—years before Microsoft Word—that allowed us to type and edit our own journal articles and print them out on

paper," Ormsbee recalls. "The narrative was interspersed with lots of special codes that would then be translated into formatting and equations when run through a compiler. That was quite an innovation back when everything was written out by hand or typed on a typewriter by the office staff."

While Blandford ended up in academia largely due to his enjoyment of research, he had fun in the classroom. He says students appreciated his candor, and he like to cut-up with them.

"Like one student who came in wearing an orange shirt. I said, 'You know, this is the University of Kentucky, not the University of Tennessee!' He got a big kick out of that."

“When I told Hans I was going to retire, he lovingly called me a wimp.”



Blandford also saw tremendous value in student conferences and competitions. He not only accompanied student groups but also contributed \$25,000 to create the Blandford ASCE Student Conference Competition Endowment in Civil Engineering.

"I also consider my time as department chair as a highlight," says Blandford.

"Being chair isn't fun all the time, but it was for me most of the time."

When the conclusion of Blandford's second term as chair coincided with the arrival of incoming dean John Walz, the new dean asked him to serve a fifth year—a testament to Blandford's blend of administrative and relational effectiveness.

After stepping down in 2014, Blandford taught his last class during the spring 2018 semester and formally retired. Civil engineering professor Hans Gesund, who had served on Blandford's master's degree committee in the mid-70s and was still a full-time professor at nearly 90 years old, didn't immediately offer congratulations.

"When I told Hans I was going to retire, he lovingly called me a wimp," Blandford says.

Longtime visitors to Las Vegas, the Blandfords bought a house in North Las Vegas in 2014, which they rented until moving there permanently in 2017. They live 15 minutes from "the strip" but prefer the local gaming, entertainment

and restaurants of North Las Vegas. They enjoy the climate, which features dry heat and plenty of wind.

As part of their retirement, the Blandfords have enjoyed traveling internationally, visiting family in Kentucky and Texas, and the virtues of living in Vegas. They're pleased this gift has become a reality.

"The department was good for me while I was a student and faculty member," reflects Blandford. "I want to see UK's Department of Civil Engineering move to outstanding status in support of the faculty and students." ■



The Egg Drop, a perennial favorite among E-Day competitions, is hosted by UK's student chapter of the American Society of Civil Engineers.

HANS GESUND RETIRES AS LONGEST-SERVING UK PROFESSOR

At the end of the fall 2020 semester, civil engineering professor Hans Gesund retired as the longest-serving professor at the University of Kentucky—ever.

Born in Vienna, Austria, Gesund moved to the United States in 1940. He joined the UK Department of Civil Engineering in 1958 after earning his Ph.D. from Yale University. A specialist in reinforced concrete, Gesund also held a joint appointment in Architecture and Historic Preservation.

Known for his quick wit in the classroom, he uttered many “Gesundisms,” which have been collected over the years. Our list on the next page is certainly incomplete.



Gesundisms

- When I was growing up, we didn't have TV. George Washington and I came from a deprived background.
- I don't blame you for not wanting to carry this book around, but it's good preparation for the military.
- The contractor will prefer no shoring ... 'shore' enough. Sorry 'bout that one.
- The rest of the world is metric. We're a lonesome polecat. You understand why polecats are lonesome? They don't use deodorant.
- My wife keeps telling me she married me for better or for worse, but not for lunch.
- Aluminum works in planes; steel makes 'em too heavy. They can't get off the ground. We try to keep our buildings from flying away.
- I just happened to bring along some Kleenex ... comes in big rolls ... in toilet paper containers.
- Who has a widget? Nobody has a widget?
- We always wear both a belt and suspenders when we design. Take no chances.
- If it moves ... run.
- If it hasn't cracked, it isn't concrete.
- All's weld that ends weld.
- Next time we'll boldly get into bolts.
- How 'bout a definite maybe.
- You know the difference between a rolled edge and a shear edge? Run your hand along the edge ... if you're all bloody, it's shear.
- I'm always worried when I go to the doctor's office and his desk calendar came from a funeral home.
- If Washington was a structural engineer, we wouldn't have that picture of him crossing the Delaware, standing on the front of the boat with everyone else rowing. He'd have built a bridge!
- We'll talk about fatigue later; I'm tired of it already.
- That's a no-good question. No good question goes unanswered.
- All I know about chemistry is if you take a match and put it to a candle, it lights. And if you put it in water, it goes out.
- The final is comprehensive and incomprehensible.
- Bridges take too long to build. People forgot who gave them the money. But if you pave a road, people will come vote for you.

Questions

Student: If I get 9.6 rebars for the column, do I round up?

GESUND: You don't have to do any rounding ... rebar's already round.

Student: What is your test format?

GESUND: I get really testy about it.

Student: How about a take-home exam?

GESUND: You're talking about the honor system. I've got the honor; you've got the system.

Student: What's your best advice for a young engineer?

GESUND: Go to dental school. There, you'll be building bridges all the time.

Student: Have you ever worked on any dam designs?

GESUND: I've damned many designs.

Student: What's the score of the UK-Florida game going to be?

GESUND: I don't know ... ask me Monday!

Student: Where did you get 0.9 in that equation?

GESUND: (licks index finger and sticks it above his head) Wind's from the west!

RESEARCH IN THEIR OWN WORDS

Martha E. Grady

When we asked mechanical engineering assistant professor Martha (Meg) Grady to explain her research in her own words, she went the extra mile and hijacked a weekly dinner Zoom call to interview her family. Members of the Grady family have worked in the following fields: food service industry, human resources, budget and training for government agencies, media and library centers, and foreign affairs. No engineers in Dr. Grady's family, but she says their support and commitment to her education has never wavered. Dr. Grady's parents, Robyn and Mike Grady, are both now retired and living in Florida. Her brother, Sean Grady, currently works for KPMG International Limited.

On the following page are snippets from their conversation.

MEG: When I describe my research, I will often use the word 'adhesion.' When you think of adhesion, you probably think of glues. So, things that stick really well to surfaces. My research examines the way bacteria and particularly the way groups of bacteria form a kind of slime that sticks to surfaces.

Dad: Like my hip implant.

MEG: You beat me to it. So, what would you want out of an implant?

Dad: Durability, longevity.

Sean: Efficiency, you want it to work well in synergy with the other bones.

Mom: We want quick healing, which goes with your bacteria thing.

MEG: Working well with the body is a term we call biocompatibility. In order for an implant to receive approval for use in the human body, it goes through specific approval procedures with the FDA. During those testing protocols, you would want to check for a lot of those properties. How well does it integrate with the bones that are there? One of the things that is missing, though, from these sets of standards is how that material interacts with bacteria. And that's where my research really comes into play.

Dad: Why is that of immediate concern?

MEG: One of the reasons why it should be of concern is that infection rates on implants are on the rise. Even though the field is designing better and better implants.

Sean: Are the people performing the procedure not being careful enough or is it the material itself?

MEG: It is probably a combination of things. If Dad remembers from his hip implant, they put him on antibiotics ahead of his surgery. The reason why that is done is to reduce the amount of bacteria in the body to help prevent infections.

Mom: They do that for dental implants too, right?

“In my research I measure how well bacteria cling to an implant.”

MEG: Yes, infections on implants are difficult to resolve once they've formed, so our approaches are prophylactic. You go on antibiotics prior to implantation and then you hope the body's natural defenses do their thing. So, if we want to decrease the occurrence of infections on medical implants, we can investigate new experiments with bacteria during biocompatibility screening. In my research, I measure how well bacteria cling to an implant. So, what we can do is compare how well your natural cells adhere to an implant versus how well bacteria adhere to the implant. Then we want to prefer implants that have better adhesion to your natural cells than to bacteria.

Sean: So, do you get multiple types of

surfaces to test?

MEG: We are currently looking at state-of-the-art titanium and what's next in this area of structural implants is titanium alloys, zirconia and its alloys. What we are establishing right now is the technique and demonstrating the need to do a systematic study across lots of materials and variables.

Sean: You mainly just deal with metals, no plastics yet?

MEG: Right, but you bring up a good point especially with COVID-19 being so destructive and often requiring a patient to go on a ventilator. Both ventilators and catheters also have high infection rates. So, it is also important to know how well bacteria sticks to plastics.

[Family argument about wood; eventually there is consensus that wood would make a terrible implant.]

Sean: So, do you need test subjects? One of my buddies has a titanium rod that goes through almost his entire leg.

MEG: We are not anywhere near human testing yet. I would say the timeline is probably a decade from now.

Dad: Wow, that long? Well, they developed the COVID-19 vaccine in a year.

[Mom throws Dad 'the look.']

MEG: Ha, I'm not sure my research lab can compete with multi-billion-dollar corporations, but I am hiring new graduate students. Feel free to apply. ■

YOU CAN LEARN MORE AT
WWW.GRADY.ENGR.UKY.EDU



TIME TO LOOK FORWARD

ON APRIL 21, YOU CAN ANSWER THE CALL FOR STUDENT SCHOLARSHIPS!

Last May, you—the alumni, friends and family of the UK College of Engineering—responded to our incoming students' financial uncertainty due to Covid-19 and raised over \$425,000 for scholarships. In just three weeks!

In September, you donated a jaw-dropping \$1,929,828 through our One Day for UK (OD4UK) giving event. You unlocked over \$100,000 in matching gifts and displayed social media skills by winning special OD4UK challenges.

On April 21, we need you and the entire UK College of Engineering family to unite once again and raise money for student scholarships. This pandemic is not over, and our students still need your support! Help them become the engineers who will make our communities stronger and safer.

Four donors have created giving thresholds that will encourage you to give multiple times and challenge your friends and fellow alumni to get in on the fun!

- David Ratterman (BSME 1968) will donate \$5,000 toward scholarships when we reach 100 gifts.
- Kenneth Wheeler will donate \$35,000 toward scholarships for the UK College of Engineering Extended Campus at Paducah (UK Paducah) when we reach 250 gifts.
- Zudy Software will donate \$50,000 toward scholarships when we reach 400 gifts.
- Alumnus Richard Simpson (BSME 1984) will also give \$50,000 toward scholarships when we reach 600 gifts.

Mark April 21, 2021, on your calendar as the day we unite to invest in a better future for our engineering students, the engineering profession and our world!

#ONEDAYFORUK

 GIVING DAY • 4•21•21

KENTUCKY CAN. 

FOUR BIG CHALLENGES

CHALLENGE
#1

DAVID RATTERMAN (BSME 1968): DONATING \$5,000 TOWARD SCHOLARSHIPS AT 100 GIFTS



"My brother and I were the first persons in our family to attend high school; and I would not have been able to continue on to the University of Kentucky without the assistance of an engineering scholarship. My engineering education was the passport to a life that I could not imagine when I started college 57 years ago. Those of us who have benefitted from receiving an engineering education can make no greater contribution to society than by providing an engineering education to the deserving students who follow us."

– David Ratterman

David Ratterman is a member of the Construction Service Group at Stites & Harbison, PLLC. A general construction law expert specializing in the fabricated structural steel industry, Ratterman has developed a national legal practice and advanced the study and practice of construction law in the United States. He has also become an internationally recognized writer and speaker on a wide variety of legal and engineering topics. Ratterman lives in Louisville with his wife, Lois.

CHALLENGE
#2

KENNETH WHEELER: DONATING \$35,000 TOWARD SCHOLARSHIPS FOR THE UK COLLEGE OF ENGINEERING EXTENDED CAMPUS AT PADUCAH AT 250 GIFTS



"Since admitting its first students in 1998, the Paducah campus has graduated over 400 mechanical and chemical engineers who meet the same high standards of the Lexington campus and many of whom are employed in the immediate area. Recognizing that college student expenses today exceed the available governmental funding, I have promoted the initiation of the Engineering Opportunity Scholarship Program Fund, which will assist in meeting unforeseen or emergent financial challenges and provide additional encouragement to students to complete their undergraduate degree."

– Kenneth Wheeler

Kenneth Wheeler is a longtime advocate and supporter of the UK College of Engineering. He was one of the early advocates of bringing the engineering program to Paducah, Kentucky, as an extension program in 1998. He remains one of UK Paducah's most enthusiastic and generous supporters. For 42 years, Wheeler enjoyed a maritime-industry career that spanned shipbuilding to inland shipping. He and his wife, Doris Jean Wheeler (1933-2018) were married for 63 years.

CHALLENGE
#3

ZUDY SOFTWARE: DONATING \$50,000 TO ENDOW A SCHOLARSHIP FUND AT 400 GIFTS



"Zudy is thrilled to partner with the University of Kentucky College of Engineering by providing financial assistance in the support of innovation and technology education. Students at UK are exceptionally talented and will help build our future—let's make sure we help them."

– Trish Kennedy, Founder @Zudy

Zudy Software was founded in 2013 by husband-and-wife-team, Tom and Trish Kennedy. The company created an application development system, VINYL, that is the world's only no-code, end-to-end enterprise development platform. VINYL allows users the ability to build, in weeks, highly configurable apps that are designed to integrate seamlessly into all existing and future data sources and systems, whereas conventional software and app development teams can take months to build one usable application.

CHALLENGE
#4

RICHARD SIMPSON (BSME 1984): DONATING \$50,000 TO ENDOW A SCHOLARSHIP FUND AT 600 GIFTS



"Donna and I decided to give at this time because we have been so blessed. According to Luke 12:48, 'to whom much is given, much is required.' As a first-time college graduate from my family, Donna and I had an opportunity to do things that many can only dream. My education at the University of Kentucky College of Engineering was a foundation for us to build a life. When we have been blessed, it should be expected to bless others. We are all in a different place, but we can all do something. It may be small but think of it as seed. While the seed is in your hand, it cannot grow; it is only when we sow our seed that it can grow. I am asking each of you to sow some seed in the next generation of leaders and engineers."

– Richard Simpson

Richard Simpson is a vice president for General Electric. He has been a part of the GE family of businesses since 1984 and has spent his career in global supply chain. During that time, he has served in numerous executive and management roles and taken several courses in executive development and business management at the GE Crotonville Leadership Institute. Simpson and his wife, Donna, live in Georgetown, Kentucky.

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KENTUCKY CAN. THE 21ST CENTURY CAMPAIGN UK



STUDENT SPOTLIGHT: **HUNTER WALTERS**

Kel Hahn

Biosystems engineering sophomore Hunter Walters isn't just glad to be pursuing his engineering education at UK; he's glad to be anywhere. By all accounts, Hunter shouldn't have lived to see double digits.

When Hunter was seven years old, doctors diagnosed him with lymphatic vascular malformation, a rare disease that causes his body to produce millions of microcystic tumors that can create blockages and impair his respiratory system. The prognosis for such a condition is grim; Hunter says most patients die within two years of diagnosis.

Fortunately, Hunter became only the second person in America to receive an experimental medication called Sirolimus, which uses a bacterium found only on Easter Island. It not only saved his life but also gave him a new lens through which to see the world.

"It's one of the reasons why I'm a Christian," says Hunter.

As one might suspect, experimental medicines are expensive. Further, Hunter continues to take Sirolimus since his condition is irreversible. For that reason, among others, Hunter is grateful for the scholarship support that enables him to pursue his biosystem engineering degree.

"Without the scholarship provided through the College of Engineering, I do not think I would have been able to come to the university," he says.

A native of Irvine, Kentucky, Hunter grew up on 22 acres and enjoys hiking at the Red River Gorge whenever he's home. Not surprisingly, he wants to apply engineering to problems involving the great outdoors.

"I'm interested in bioenvironmental sustainability, particularly water resources," he says. "I would like to help restore natural processes."

In addition to his academic studies, Hunter is a member of the Tau Beta Pi honor society, Cru—a Christian campus ministry at UK—and the student chapter of the American Society of Agricultural and Biological Engineers.

Just as advanced pharmaceutical engineering produced a medicine able to save and preserve his life, Hunter hopes to use his engineering skills to improve the world in whatever measure he can.

"The Lord has been amazing to me, and I want to use my blessings to bless others." ■

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 GIVING DAY · 4·21·21

KENTUCKY CAN. 

STUDENT SPOTLIGHT: BECCA & CASSIE ROBERTS

Kel Hahn

When it comes to receiving scholarship help at the undergraduate level, students with prior degrees from other schools usually don't expect much help. That's why sisters Becca and Cassie Roberts from Winchester, Kentucky—both with degrees from other institutions—have been elated to receive ample scholarship aid from the University of Kentucky.

Since enrolling at UK, Becca has been awarded the College of Engineering Scholarship, the Garver Scholarship and the Distinguished Transfer Student Scholarship, while Cassie obtained an E. On US Scholarship this past semester.

"For us, the positive impact of scholarship donors' generosity cannot be overstated," says Cassie. "Due to our prior degrees we are ineligible for some types of aid—like grants—and as non-traditional students we have more financial obligations than the average student. We can honestly say that without scholarships we would have been unable to shoulder the financial burden of pursuing engineering degrees at UK."

What brought them to UK after already earning degrees in the sciences? Cassie wanted to leverage her chemistry background toward a chemical engineering degree, while Becca wanted to establish a second career related to computer science.

"It's a little cliché, perhaps, but I'm very passionate about 'making the world a better place,'" says Cassie. "As I neared the end of my chemistry degree, I became very interested in innovative technologies in environmental protection and power generation. I really wanted to be able to apply my chemistry and math knowledge toward sustainability efforts, and UK offered me a place to do that."

Becca, who graduated from Morehead State University with a bachelor's degree in biology and a master's degree in biology from Eastern Kentucky, worked as a professional biologist

before becoming dissatisfied with where she was heading.

"I knew I needed to seriously rethink my career and move in a direction that would be more intellectually challenging and satisfying yet allow me to earn more competitive wages. I feel that the additional education in computer science will do exactly that," she says.

Cassie joined chemical engineering assistant professor Qing Shao's research group in November 2020. Alongside a doctoral student, she is simulating interfacial interactions of deep eutectic solvents.

"The opportunity has been really amazing," she says. "I'm able to incorporate my knowledge of quantum mechanics with principles from both chemical engineering and computer science."

Becca recently became involved with a multidisciplinary bioinformatics group at UK that comprises researchers from the computer science and plant pathology departments.

"I'm hoping to contribute to their research on heritable mutualistic symbioses between plants and seed-borne fungal symbionts this semester and on into the summer," she says.

Becca and Cassie hope their unique educations and experiences will allow them to pursue careers in disciplines that work at the cutting edge of where technology intersects with the life sciences. Cassie is especially interested in automotive and fuel applications. Becca is drawn toward bioinformatics and machine learning.

"Many of the challenges facing humanity today require incredibly multidisciplinary approaches, such as environmental issues like water quality, climate change and energy, as well as medical advancements like computationally analyzing genomes in order to understand and combat disease," Becca says. ■



BECCA ROBERTS

CASSIE ROBERTS

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KENTUCKY CAN. 



ALUMNI SPOTLIGHT: **MICHAEL GRAEHLER**

Kel Hahn

Meet Michael Graehler (BSCE 2018), inaugural chair of the Young Alumni Philanthropy Council.

A well-known saying advises, “If you want something done, give it to a busy person.” The University of Kentucky College of Engineering’s Alumni & Philanthropy Office must have had that adage in mind when they asked Michael Graehler to chair its new Young Alumni Philanthropy Council.

From conducting undergraduate research in data mining for transportation while engaged in business development for a greenery to strapping on a backpack, hopping on his motorcycle and delivering food through Door Dash while a full-time graduate student at Vanderbilt University in Nashville, Graehler owns a penchant for productivity.

“My parents instilled that work ethic into me,” he says. “I think I had eight or 10 jobs in college, whether my co-ops at Messer Construction, starting a pressure-washing company, delivering Jimmy John’s or working at the UK College of Agriculture, Food and Environment’s IT help desk—anything I could get my hands on!”

Now the investment banking analyst for SVB Leerink in Charlotte, North Carolina, is helping the college launch a philanthropy council reserved solely for alumni under the age of 40.

Graehler recalls, “Last summer, Christie Workman, who leads the council on the college’s side, told me about her idea for the Young Alumni Philanthropy Council, and I thought, ‘This is the coolest thing of all time. It’s going to be a great opportunity for recent graduates to give back.’ Then, at the end of the call, she asked me to help lead it. I said, ‘Absolutely.’”

Graehler’s appreciation for the power of philanthropy to advance a college stems, in part, from his relationship with two of the college’s most ardent supporters: L. Stanley Pigman (BSMNG 1981) and Dr. F. Joseph Halcomb III (BSME 1976). It

was during a senior-level leadership class that Graehler first met Dr. Halcomb, who interacted with the class as a guest speaker.

“He shared with the class why he gives back and how he got started,” says Graehler. “I approached Dr. Halcomb afterward and requested a 10-minute phone call with him to ask for career advice. He said yes and ended up talking with me for an hour. I really respect him a lot.”

Chairing the new council isn’t Graehler’s first foray into philanthropy. After a trip to Nepal and with the help of friends, he co-founded Developing Nepal, a non-profit organization that funds educational opportunities for students in rural Nepal. He has now visited Nepal multiple times.

After graduating in 2018, Graehler pursued a master’s degree in finance from Vanderbilt University; he graduated first in his class. At SVB Leerink, Graehler helps health care companies raise capital, sell their business or merge with another company.

“It’s really interesting work because as you go through these processes of helping a company go through a sale, there’s a ton of analysis, there’s marketing and there are lawyers involved.”

Lest that last comment be understood as a shot against those in the legal professions, Graehler points to their due diligence as essential to the success of a sale or merger. Then he adds, “I could see myself going to law school, one day, for fun.”

Maybe the proverb should be changed to “If you want something done, give it to someone who would go to law school for fun.” To be sure, the nascent Young Alumni Philanthropy Council won’t lack vision or energy. ■

NATIONAL SOCIETY OF BLACK ENGINEERS AT UK REMAINS ACTIVE EVEN IN A PANDEMIC

Despite significant adjustments to routine campus life required by the COVID-19 pandemic, the University of Kentucky chapter of the National Society of Black Engineers (UKNSBE) persevered in its professional development and outreach goals.

UKNSBE was able to continue its Metro Cats program, where UKNSBE volunteers teach digital literacy to inner-city students. It also hosted an Alumni Night, which brought three UKNSBE alumni at different stages of their careers to give insight on how they navigated their undergraduate years.

One of UKNSBE's biggest events of the semester was its Diversity in Engineering Conference, which spanned four days. The first day featured a Diversity in the Workplace Panel, during which representatives from four companies answered questions involving their companies' initiatives to create diverse environments. On the second day, keynote speaker Ricky Mason—a UKNSBE alumni, founder of AgriTech and CEO of BrainSTEM University—spoke about his experience in engineering. On the third day, attendees participated in a Networking Night, which allowed over 30 company representatives to meet UKNSBE members and initiate meaningful conversations. The final day of the conference featured the virtual Fall Engineering and Computer Science Career Fair.

Regarding UKNSBE's dedication in the midst of uncertainty and change, K'Lynn King, a chemical engineering senior and UKNSBE's president, commented, "UKNSBE's mission is to excel academically, succeed professionally and positively impact the community despite all natural odds placed against us, and we will continue to thrive by safely assuring our members and community are given our best efforts."

The photo for this article was taken in September 2019.



UNIVERSITY OF KENTUCKY
COLLEGE OF ENGINEERING

Hall of Distinction

John Wesley Gunn, Class of 1890, earned the first engineering degree awarded by what eventually became the University of Kentucky. Since that modest beginning over 130 years ago, more than 27,500 individuals have followed his example and received degrees in engineering and computer science. Through their extraordinary achievements, our alumni have established a lasting legacy of excellence. Initiated in 1992, the Hall of Distinction recognizes and honors those alumni who have demonstrated distinguished professional accomplishments, outstanding character and commitment to community service. This recognition serves to encourage exemplary achievements by current students and others. It is a symbol of the respect and admiration held by the University of Kentucky College of Engineering for these esteemed individuals. Below are the 2020 inductees.



Billie Sue Chafins
B.S. in Computer Science, 1997
M.S. in Computer Science, 2008

Billie Sue Chafins has spent over 20 years shipping world-class consumer and enterprise software for large consumer technology companies, with over 15 years of experience building and managing teams. She is currently a vice president of software engineering in Direct to Consumer at the Walt Disney Company where she leads Web Engineering; Identity Management and Access; and Viewer Experience systems for Hulu and Disney+, products, which have 39.4 million and 94.9 million subscribers, respectively. In this role, she leads a team of nearly 300 developers across Seattle, Santa Monica, New York, London and Beijing. Chafins is also the head of Hulu's Seattle Office, where she is responsible for the decision-making and operations of the company's office in Seattle.

Gordon "Stonie" Glenn
B.S. in Mechanical Engineering, 1970

By keeping his head down and focusing on leveraging his executive talents, Gordon S. "Stonie" Glenn spent over 35 years transforming small but promising businesses into highly profitable, publicly traded companies. He rose through the ranks over a 25-year career at Computer Data Systems, Inc. (CDSI) and served as president and CEO for the last eight years. When the company was acquired in 1997, it had grown into a \$350 million, NASDAQ-traded software, integration and outsourcing company. After CDSI, a small health care transaction processing company called SXC Health Solutions, Inc., recruited Glenn to be its chairman and CEO. Under Glenn's leadership, the company grew to a NASDAQ-traded \$1.5 billion enterprise at his retirement in 2009.



Raj K. Krishnaswamy
M.S. in Chemical Engineering, 1993
Ph.D. in Chemical Engineering, 1995

Dr. Raj Krishnaswamy is the director of the Innovation and Technology Center at Braskem America in Pittsburgh, a role he has held since 2013. Braskem is the largest petrochemical company in the Americas and the world's leading biopolymer producer. Dr. Krishnaswamy oversees a global team of polymer scientists and engineers located in Brazil, Germany and the U.S. He previously worked in Chevron-Phillips' research and development group, where he focused on the company's polyolefin business sector, and at Metabolix Inc., where he developed a new-to-the-world family of biobased and biodegradable polymers. Dr. Krishnaswamy received the Research & Technology Lifetime Achievement Award from the Society of Plastics Engineering in 2011. He is a co-inventor on over 40 patents and patent applications.

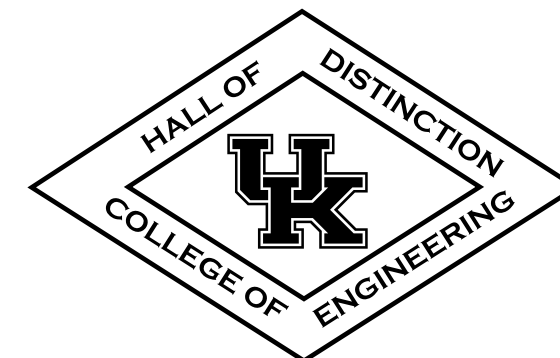
Asghar (Oscar) Nosrati
B.S. in Civil Engineering, 1979
M.S. in Civil Engineering, 1982

While developing a reputation for excellence in managerial positions within the refinery and petrochemical construction industry, Nosrati and two friends pooled \$200,000 to form an oil and gas exploration and production company named AmeriCo Energy Resources, LLC, in 1998. Today, AmeriCo Energy Resources is a multimillion-dollar E&P company operating hundreds of wells in several states in the U.S. Nosrati is one of the principals in the company and serves as executive vice president of acquisition and divestiture function. In addition, Nosrati launched Nosha Enterprises in 2008. As president and CEO of Nosha Enterprises, he managed to grow it to a multimillion dollar commercial and residential real estate company in the Houston area.



David J. Shippy
B.S. in Electrical Engineering, 1983

David Shippy served as IBM's chief architect and technical leader in the area of high-performance microprocessor chips, which included technology for handheld devices, notebook computers, desktop computers, game machines, mainframes and supercomputers. He led the architecture team for the microprocessor technology in the Deep Blue supercomputer that was the first computer to defeat a human, Garry Kasparov, in a game of chess. Later, Shippy became the chief architect for the supercomputer on a chip technology in the Xbox/360 and PlayStation/3, which set speed records. He holds over 50 patents in the computer engineering field. Shippy is currently CEO of the Shippy Multifamily Group, which syndicates and manages a portfolio of real estate properties valued at nearly \$1 billion.



MARTHA GRADY, JONATHAN PHAM RECEIVE NSF CAREER AWARDS

Martha Grady, assistant professor in the Department of Mechanical Engineering, and Jonathan Pham, assistant professor in the Department of Chemical and Materials Engineering, have received National Science Foundation (NSF) Faculty Early Career Development (CAREER) awards. The CAREER Award is one of the “most prestigious awards in support of the early career-development activities of those teacher-scholars who most effectively integrate research and education within the context of the mission of their organization,” according to NSF.

MARTHA GRADY MECHANICAL MECHANISMS OF BIOFILM SURVIVAL ON IMPLANT SURFACES

This grant will explore the role that bacterial biofilm mechanics play in the quarter of a million medical device infections experienced by Americans each year. Research outcomes, which include a fundamental understanding of bacterial biofilm mechanics and the establishment of improved biocompatibility criteria, will contribute to a reduction in medical device infections. Because new biofilm mechanics knowledge produced by this proposal will inform the ability to control biofilm accumulation and dispersal, the research outcomes will impact many industries beyond medicine including maritime, food, water, oil, paper and aerospace. Beyond the laboratory, Grady’s team will cultivate a diverse workforce at the intersection of engineering and medicine through a PI-designed initiative, “Newton’s Team.” Newton’s Team will equip mechanics instructors in higher education with new hands-on active learning activities that reduce perceived implementation barriers.

Grady joined the UK College of Engineering faculty in 2016.



JONATHAN PHAM WETTING AND DYNAMICS ON SOFT AND SWOLLEN POLYMERIC SURFACES



The objective of this CAREER project is to provide fundamental knowledge on the relationships between materials-specific properties and the wetting behavior of soft, swollen and crosslinked polymers. Soft and swollen polymers are found in a host of applications, yet it is not well understood how they interface with different liquids or solids. This project aims to understand the formation of a ridge that occurs when liquid drops and insects are placed on the surface. A diverse range of polymer properties, as well as the effects of mechanical stretching will be considered. To investigate how insects stick or slip on these surfaces, an international collaboration will be initiated with researchers from the United Kingdom. The project will train students in soft materials science, physics, chemistry and characterization methods across a wide range of educational levels.

Pham joined the UK College of Engineering faculty in 2017.

NEWS & RECOGNITION

GRANT AWARDS

Zach Agioutantis, Mining Engineering Foundation Professor and chair; **Joseph Sottile**, professor; and **Steven Schafrik**, associate professor—all in the Department of Mining Engineering: \$643,000 contract from the National Institute for Occupational Safety and Health (NIOSH) for advancing underground mine equipment autonomous operation.

Ramkumar Annamalai, assistant professor in the F. Joseph Halcomb III, M.D. Department of Biomedical Engineering: Recipient of a pilot grant through UK's "Igniting Research Collaborations" program.

Aaron Cramer, Kentucky Utilities Professor in the Department of Electrical and Computer Engineering: \$358,976 award from the U.S. Navy Office of Naval Research for shipboard power systems research.

William Ford, assistant professor in the Department of Biosystems and Agricultural Engineering: \$226,757 grant through the National Science Foundation's EPSCoR Research Infrastructure program. The project is titled "RII Track-4: Elucidating Controls of Sediment Phosphorus Delivery to Tile-Drains."

Jim Griffioen, professor in the Department of Computer Science and director of the University of Kentucky Center for Computational Sciences: Co-PI for \$3 million grant from the National Science Foundation to expand FABRIC, a project to build the nation's largest cyberinfrastructure testbed, to four distinguished scientific institutions in Asia and Europe. Launched in 2019 with a \$20 million grant from the NSF, FABRIC is working to build a platform where computer scientists can test new ways to compute, move and store data.

Shakira Hobbs, assistant professor in the Department of Civil Engineering: National Science Foundation EPSCoR Research Infrastructure RII Track 4 Research Fellows grant to develop rigorous techniques to detect polar pesticides at low concentrations.

Dan M. Ionel, electrical and computer engineering professor, L. Stanley Pigman Chair in Power, SPARK and PEIK director: Collaborator through the SPARK research group on research project led by the Electric Power Research Institute, in collaboration with utilities and industry, and funded by the U.S. Department of Energy.

Kunlei Liu, associate director at CAER and associate professor of mechanical engineering in the UK College of Engineering: Involved in \$3.7 million project through the U.S. Department of Energy to develop an NH3-based looping integrated CO2 capture and utilization technology that will reduce capture capital and operating costs by 50%.

Jian Shi, assistant professor in the Department of Biosystems and Agricultural Engineering: \$2 million grant from the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy to study sulfur variability in biofuel feedstocks.

Jhon Silva, associate professor, and **Zach Agioutantis** in the Department of Mining Engineering: \$543,000 contract from the Alpha Foundation for the improvement of mine safety and health for mine seal research.

Simone Silvestri, assistant professor in the Department of Computer Science: Co-principal investigator on a \$1.5 million award from the National Science Foundation to form smart and connected farms.

Nikiforos Stamatiadis, Raymond-Blythe Professor in the Department of Civil Engineering, and **Adam Kirk**, adjunct assistant professor and research engineer in the Kentucky Transportation Center: \$300,000 Transportation Research Board of the National Academy of Science grant for "Identification of AASHTO Context Classification"; \$90,000 Transportation Research Board of the National Academy of Science grant for "Aligning Geometric Design Controls, Criteria and Elements with Roadway Context, Modal Priority and Functional Classification."

Sridhar Sunderam, associate professor in the F. Joseph Halcomb III, M.D. Department of Biomedical Engineering: \$1.7 million National Institute of Neurological Disorders and Stroke grant for "EpiZode: Noninvasive Screening in Preclinical Models of Epilepsy." Also a collaborator on a \$3.8 million National Institute of Aging grant to UK researchers for "Sleep Fragmentation and Alzheimer's Disease and co-investigator on a \$2.9 million grant from the National Institutes of Health to support a multidisciplinary team of UK researchers in continuing their work to find therapeutic strategies to resolve neurovascular inflammation and repair blood-brain barrier dysfunction in epilepsy.

Fuqian Yang, professor in the Department of Chemical and Materials Engineering: \$442,600 National Science Foundation grant for "Investigating the Effects of Thermal-Opto-Mechanical Interactions on Optical Responses of Multilayer Semiconductor Nanocrystals."

Guoqiang Yu, professor in the F. Joseph Halcomb III, M.D. Department of Biomedical Engineering: \$612,754 R56 grant from the National Institutes of Health for "Continuous and Longitudinal Monitoring of Cerebral Blood Flow and Metabolism in Freely Moving Rodents."

Caigang Zhu, assistant professor in the

F. Joseph Halcomb III, M.D. Department of Biomedical Engineering: Recipient of a pilot grant through UK's "Igniting Research Collaborations (IRC)" program.

PROFESSIONAL RECOGNITION

Doug Kreis (Ph.D. CE, 2016), associate director of the Kentucky Transportation Center (KTC): Named interim director. Kreis succeeded **Joe Crabtree** upon his retirement on March 1, 2021.

Himanshu Thapliyal, associate professor and Endowed Robley D. Evans Faculty Fellow in the Department of Electrical and Computer Engineering: Ranked in the top 50 among scientists throughout the world in the field of computer hardware & architecture. Thapliyal and graduate student **Amit Degada** also received second place in the Best Paper Award competition at the 39th IEEE International Conference on Consumer Electronics. The conference received over 280 papers from across the globe.

Guigen Zhang, professor and endowed chair of the F. Joseph Halcomb III, M.D. Department of Biomedical Engineering: Elected a Fellow of Biomaterials Science and Engineering by the International Union of Societies for Biomaterials Science and Engineering.

Power and Energy Institute of Kentucky and the **Kentucky Industrial Assessment Center**: Received the 2020 Community Environmental Luminary Award from the Kentucky Energy and Environment Cabinet.

STUDENT AND ALUMNI AWARDS AND RECOGNITION

Rosemary Alden, electrical engineering senior: 2020-2021 national Institute of Electrical and Electronic Engineers Power and Energy Society Plus Initiative Scholarship recipient.

Hope Anderson, electrical engineering sophomore: 2020-21 national Institute

of Electrical and Electronic Engineers Power and Energy Society Plus Initiative Scholarship recipient.

Edwina Barnett, biomedical engineering master's degree student: Named a Bridge to the Doctorate fellow by the Kentucky-West Virginia Louis Stokes Alliance for Minority Participation.

Alyssa Donawa, computer science doctoral student: Named a Bridge to the Doctorate fellow by the Kentucky-West Virginia Louis Stokes Alliance for Minority Participation.

Tracy Drain (BSME 1998): Received the Lyman T. Johnson Torch of Excellence Award at the 30th annual Lyman T. Johnson Torch Bearer and Torch of Excellence awards.

Luke Fortner, mechanical engineering master's degree student and UK Football player: Named to 2020 Allstate AFCA Good Works Team; also named one of the nine semifinalists for The 2020 Wuerffel Trophy.

Xava Grooms, computer science doctoral student: Named a Bridge to the Doctorate fellow by the Kentucky-West Virginia Louis Stokes Alliance for Minority Participation.

Skyler Hornback, chemical engineering senior: Received Astronaut Scholarship Foundation Scholarship.

K'Lynn King, chemical engineering senior: Received the Lyman T. Johnson Torch Bearer Award at the 30th annual Lyman T. Johnson Torch Bearer and Torch of Excellence awards.

Donovin Lewis, electrical engineering senior: 2020-21 national Institute of Electrical and Electronic Engineers Power and Energy Society Plus Initiative Scholarship recipient.

Sidrah Liaqat, electrical engineering doctoral student: Won first prize in the student poster competition at the Fourth Annual Commonwealth Computational Summit.

Mehrana Mohtasebi, biomedical engineering doctoral student: Received the 2020 Biomedical Engineering Society Career Development Award.

Julia Parker, biosystems engineering master's degree student: Named a Bridge to the Doctorate fellow by the Kentucky-West Virginia Louis Stokes Alliance for Minority Participation.

Monon Rahman (BSME 2019): Named Outstanding Intern during the 2020 NASCAR Drive for Diversity Awards.

Mujan Seif, materials engineering doctoral student: Received the 2020 NASA Space Technology Graduate Research Opportunity.

JaMaya Wilson, materials engineering doctoral student: Named a Bridge to the Doctorate fellow by the Kentucky-West Virginia Louis Stokes Alliance for Minority Participation.

Two University of Kentucky teams received honors at the 2020 American Institute of Chemical Engineering (AIChE) Design Competition. The first-place team, which received the William A. Cunningham Award for Best Overall Design in the Team Category, consisted of **Mariah Bezold, Clayton Tucker, Patrick Nichols and Sarah Kintner**. Honorable Mention for Best Overall Design in the Team Category went to the team consisting of **Hannah Dvorak, Rachel Monroe, Kelly Lynch and Mitchell Stokan**.

UK chapter of the Society for Mining, Metallurgy, and Exploration: Received the SME Outstanding Student Chapter Award and the Mineral Education Coalition Outstanding Student chapter awards for the 2019-20 school year.

KTC DIRECTOR AND UK ALUMNUS JOE CRABTREE RETIRES

Joe Crabtree, director of the Kentucky Transportation Center at the University of Kentucky, retired on March 1. He has served in that role since 2010. Doug Kreis, associate director of the Kentucky Transportation Center (KTC), is serving as interim director.

A native of Lexington, Kentucky, Crabtree attended Bryan Station High School. As a senior, a classmate informed him of KTC's Civil Engineering Scholarship at UK. He applied and UK awarded him the scholarship. His student years brought about another important milestone: Dr. Crabtree began dating his future wife, Lisa. They grew up in the same church and were reacquainted when her family moved back to Lexington. Crabtree went on to complete his bachelor's degree and received a National Science Foundation fellowship to attend graduate school. The Transportation Cabinet granted a leave of absence from the scholarship's job commitment so that he could complete his master's degree in one year. Crabtree began his transportation career in the Division of Research, working in the Traffic and Safety section.

When Governor John Y. Brown transferred the Kentucky Department of Transportation's research functions to UK in 1980, Crabtree became a UK employee and was released from his remaining scholarship obligation. Always up for a challenging opportunity to test his capabilities and limits, Crabtree sought out the Navy recruiter who had courted him as a student. The recruiter encouraged him to apply for the Nuclear Propulsion Program. Upon his acceptance, Crabtree reported to Officer Candidate School in February 1983. He served as an officer in the U.S. Navy from 1983 to 1987.

After leaving the Navy, Crabtree went to work for Mobil Chemical Company in Illinois. Family roots in Kentucky—Lexington and Powell County—would lead him back to transportation, and back to KTC in 1992. He enjoyed that first decade back at the Center—when KTC managed the Advantage I-75 Operational Test Project, created the Intelligent Transportation Systems research area and supported the Kentucky Transportation Cabinet in many leading national initiatives. It was during this time that Crabtree earned his Ph.D. in civil engineering, which paved the way to eventually becoming the KTC's director.

In retirement, Crabtree plans to stay involved with KTC, assisting with research a few days a week. ■



CLASS NOTES

Mari Chinn, MSBAE 2000; Ph.D. BAE 2003, was named head of the Oklahoma State University's Department of Biosystems and Agricultural Engineering in September 2020. She had previously been at North Carolina State University, where she began her teaching career in 2003.

Eric J. Cremers, BSME 1985, became chief executive officer of PotlatchDeltic Corporation effective January 1. He had been the company's president and chief operating officer. Cremers joined the company in 2007.

Harold Dillow, BSME 2006, is now assistant vice president, supply chain at UC Health, Greater Cincinnati's academic health care system. Dillow had served at UC Health for five years as director of supply chain with responsibility for logistics/materials, sterile processing and purchasing.

Ruth Dyer, Ph.D. ME 1980, is society awards chair for the Institute of Electrical and Electronics Engineers Instrumental & Measurement Society Awards. She recently retired from Kansas State University after serving in teaching and administrative capacities since 1983.

Brandy Harmon, BSAE 1998, joined the Kentucky Derby Museum's board of directors in November 2020. She is vice president of ticketing & venue operations for Breeders' Cup Ltd.

Alumnus and Honors College benefactor Thomas. W. Lewis, BSME 1971,

published "Solid Ground: A Foundation for Winning in Life" in March. "Solid Ground" details Lewis' personal success story and offers advice to aspiring entrepreneurs on how to write their own.

Mary A. Ramsey, BSEE 1986, was named executive director of the International Society of Automation (ISA) in August 2020. She had been serving as ISA's interim executive director since January 2020. Ramsey has more than 25 years of industrial automation experience.

Mohammad Rezaee, MSMNG 2013; Ph.D. MNG 2016, assistant professor of mining engineering in the John and Willie Leone Family Department of Energy and Mineral Engineering at The Pennsylvania State University, was awarded the Outstanding Young Engineer Award from the Society for Mining, Metallurgy & Exploration's Mineral and Metallurgical Processing Division. Rezaee holds the Thomas V. and Jean C. Falkie Mining Engineering Faculty Fellowship in the College of Earth and Mineral Sciences at Penn State.

Sarah Schweitzer, BSCE 2017, is an operations and maintenance engineer with PEAK Wind in Boston. After graduating, she was given the opportunity to move to Germany for a year through the Congress Bundestag Youth Exchange Program. There, she was able to attend the University of Hamburg as a guest student and also intern with an offshore wind farm called Merkur.

Kyra Seevers, BSCS 2020, has taken a position at Google, where she had interned twice. Seevers interviewed as a finalist for the prestigious Rhodes Scholarship.

Marc Tagher, BSME 1994, joined Exel Composites as an area sales manager in December 2020. He is based at the company's U.S. headquarters in Erlanger, Kentucky.

Joe Tannehill, MSEE 1995, has been appointed to the Gulf Coast State College District Board of Trustees. He has served on the Gulf Coast State College District Board of Trustees since 2011. Tannehill is president and chief executive officer of MERRICK Industries.

Zachary Tyler, BSAE 2016, has been hired by the Louisville Metro Government to serve as the city's first energy manager, responsible for helping the city work toward the goals laid out and approved by Metro Council in February 2020 to shift metro operations to 100% clean renewable electricity by 2030 and 100% clean energy by 2035.

David Voelker, BSCS 1993, was promoted to senior vice president, transformation office, from vice president, information technology, at Ameritas Life Insurance Corp., in Lincoln, Nebraska.

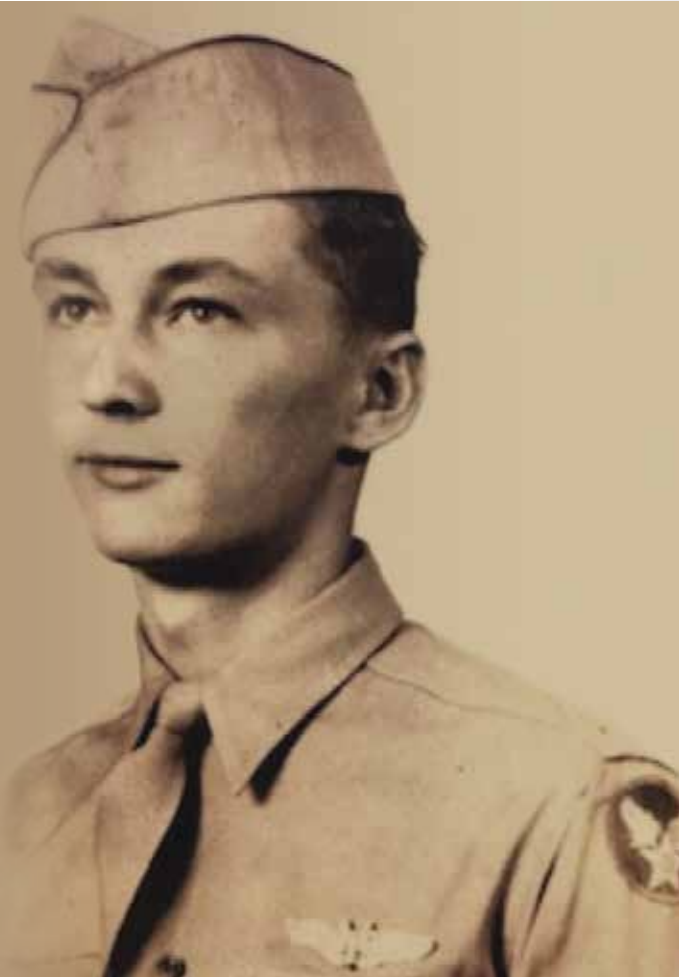
Arthur Walker III, BSCE 1994, was appointed to the Morehead State University Board of Regents by Kentucky Governor Andy Beshear in September 2020. He will serve for a term expiring June 30, 2026. He is president of Walker Construction and Materials, LLC, a highway construction and materials company.

BE *Included*

Please send Class Notes to alumni@engr.uky.edu

WILLIAM RONALD SMITHER

August 26, 1925 – October 28, 2020



William Ronald Smither of Lexington, 95, passed away on October 28, 2020, at Thomson-Hood Veterans Center in Wilmore, Kentucky.

Smither grew up in Akron, Ohio, and moved to Kentucky at an early age. He spent time on the family farm in Henry County before moving to Lexington as a young boy. He attended Lafayette High School and graduated in 1943. Smither volunteered for the Army Air Force in 1943 and served his country during World War II. He flew 25 missions on the Liberator B-24, serving as the tail gunner on bombing runs all over Europe. On his second mission, the Ritter crew was low on fuel returning from a Vienna mission. The plane crash-landed in Yugoslavia. The pilot and co-pilot perished when the plane went down; however, Smither and eight other crew members bailed out into the snowy mountains and eventually made their way to a British airbase.

After the war ended, Smither attended the University of Kentucky to study metallurgical engineering. He received his BS degree in 1950. He played baseball for UK in his senior year. Smither married Dorothy Lee Potter on November 27, 1952, in Lexington. They raised three lovely children together (Evalyn Fram, Celeste Smither and Mark William Smither). Smither's employment in foundry sales and marketing took him all over the Midwest. He happily retired in 1991.

Smither will be remembered for his broad smile and his love of being a husband and father. All the children in the neighborhood loved 'Mr. Smither,' and they would ring the doorbell to see if he could come out to play. Smither was in touch with his inner child and was not ashamed to show it. He always had everyone giggling around him. All who knew him will miss his joy for life. He was a very strong individual and a survivor all his life, from his WWII experience to cancer survivor. ■

In Memoriam

Jack E. Cook	Electrical Engineering	1950
Kenneth R. Ralston	Electrical Engineering	1950
William R. Smither	Metallurgical Engineering	1950
William J. Grubbs Jr.	Electrical Engineering	1951
Madhusudan J. Ruparel	Civil Engineering	1952, 1961
William C. Laverty	Civil Engineering	1954
Bob G. Rogers	Civil Engineering	1956
Thomas N. Watkins	Mechanical Engineering	1956
Richard G. Boyatt Jr.	Mechanical Engineering	1957
Charles H. King Jr.	Civil Engineering	1957
Maynard D. Lay	Electrical Engineering	1957
Elmo C. Matthews	Electrical Engineering	1957
Alvin L. Wittwer	Mechanical Engineering	1957, 1958
Jerry P. King	Electrical Engineering	1958
Richard L. Smith	Mechanical Engineering	1958
Marvin G. Gregory Jr.	Civil Engineering	1959
Charles M. Spilman	Electrical Engineering	1959
Arvin R. Stephens	Electrical Engineering	1959
Hunter M. Hancock	Civil Engineering	1961
William A. Mischel	Chemical Engineering	1961
Frank L. Marsili	Electrical Engineering	1964
Roger Blair	Civil Engineering	1965
Robert S. Frields	Mechanical Engineering	1966
Edward H. Ratcliff Jr.	Mechanical Engineering	1968
William E. Stumph II	Civil Engineering	1968
Clifford D. Roy	Metallurgical Engineering	1969
C. Brent Vinson	Chemical Engineering	1970, 1972
Dale L. Miles	Mechanical Engineering	1971
Walter L. Bowman	Civil Engineering	1974
Chol Pak	Mechanical Engineering	1982, 1986
John T. Kelley	Chemical Engineering	1983
Tom M. Hughes	Computer Science	1988
Adam Ross Davis	Civil Engineering	2008

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p. 12: As George Blandford was finishing his Ph.D. at Cornell University, a faculty position in the UK Department of Civil Engineering—specifically within the structures group—came open. By the time Blandford applied for it, UK had already interviewed three people. The odds of getting hired didn't look promising. However, one candidate ended up turning down the position and the department didn't extend an offer to the other two candidates. They hired Blandford without requiring him to give a seminar or teach a class because they already knew him from his days at UK as an undergraduate and graduate student.

p. 17: Gesundisms Continued

Steel is about \$0.80 per pound, which is still cheaper than hamburger ... but it's hard to chew.

Somebody tells a bad joke and the slabs crack right up. That's why there are cracks in here, because I lecture in here.

Never argue with the guy who signs your checks.

I realize there's a profusion of confusion with this thing.

Last time we talked a little about torsion, and I got you slightly twisted up.

p. 26: When Becca Roberts tells people she has degrees from Morehead State University and Eastern Kentucky University, they often joke that a degree from UK will complete her "grand tour" of eastern and central Kentucky universities.

p. 29: While in Nepal, Michael Graehler became accustomed to getting around on a motorcycle. After debating within himself whether to buy one, Graehler finally broke down and bought a "cheap, beat-up" Kawasaki KLR 650. "They're like the Toyota Camry of motorcycles," Graehler says. "They run forever."

p. 32-33: The 2021 Hall of Distinction induction ceremony will take place in October of this year. We will announce that class in the fall issue of this magazine.

p. 35: When Jonathan Pham studied engineering as an undergraduate at The Ohio State University, he took advantage of an opportunity to study corrosion in a faculty member's research laboratory. That professor was none other than Rudy Buchheit, who is now our dean.

Many thanks to Leslie Bueno, a student worker in the College of Engineering's Office of Marketing and Communications, who wrote some of the articles in recent issues of this magazine. She will graduate this summer and will be looking for an opportunity to put her storytelling skills to use.

STAN AND KAREN PIGMAN FUND 35 SCHOLARSHIPS FOR 2020-21 ACADEMIC YEAR

Stanley and Karen Pigman, who have generously funded scholarships for University of Kentucky College of Engineering students for many years, financially supported 35 students from the state of Kentucky with L. Stanley Pigman Engineering Scholarships for the 2020-21 academic year.

The scholarships are renewable up to four years, and the annual amounts to be given range from \$1,000 to \$15,000, with 25 of the 35 to receive at least \$5,000. The total amount of scholarship money to be donated was \$212,500. Students awarded Pigman Scholarships have also been

mentored by the Pigmans.

"I am truly thankful for Stan and Karen's continued scholarship support," said Dean Rudy Buchheit. "They invest in our students—not only financially but also through their mentoring and friendship. Our Pigman Scholars are a testimony to how generous, passionate alumni can change lives."

In December 2020, the UK Board of Trustees approved a \$1.25 million donation from the Pigmans to continue funding the L. Stanley Pigman Engineering Scholarship fund.



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Kentucky

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Pictured: Professor Dusan P. Sekulic and postdoctoral research Yangyang Wu. Since 2017, Sekulic has been leading an estimated \$1 million international research project funded by NASA and the Roscosmos State Corporation for Space Activities in Russia.



GIVING DAY

ONE DAY
FOR UK

KENTUCKY CAN. THE 21ST CENTURY CAMPAIGN

4·21·21