

ARKANSAS

FALL 2014



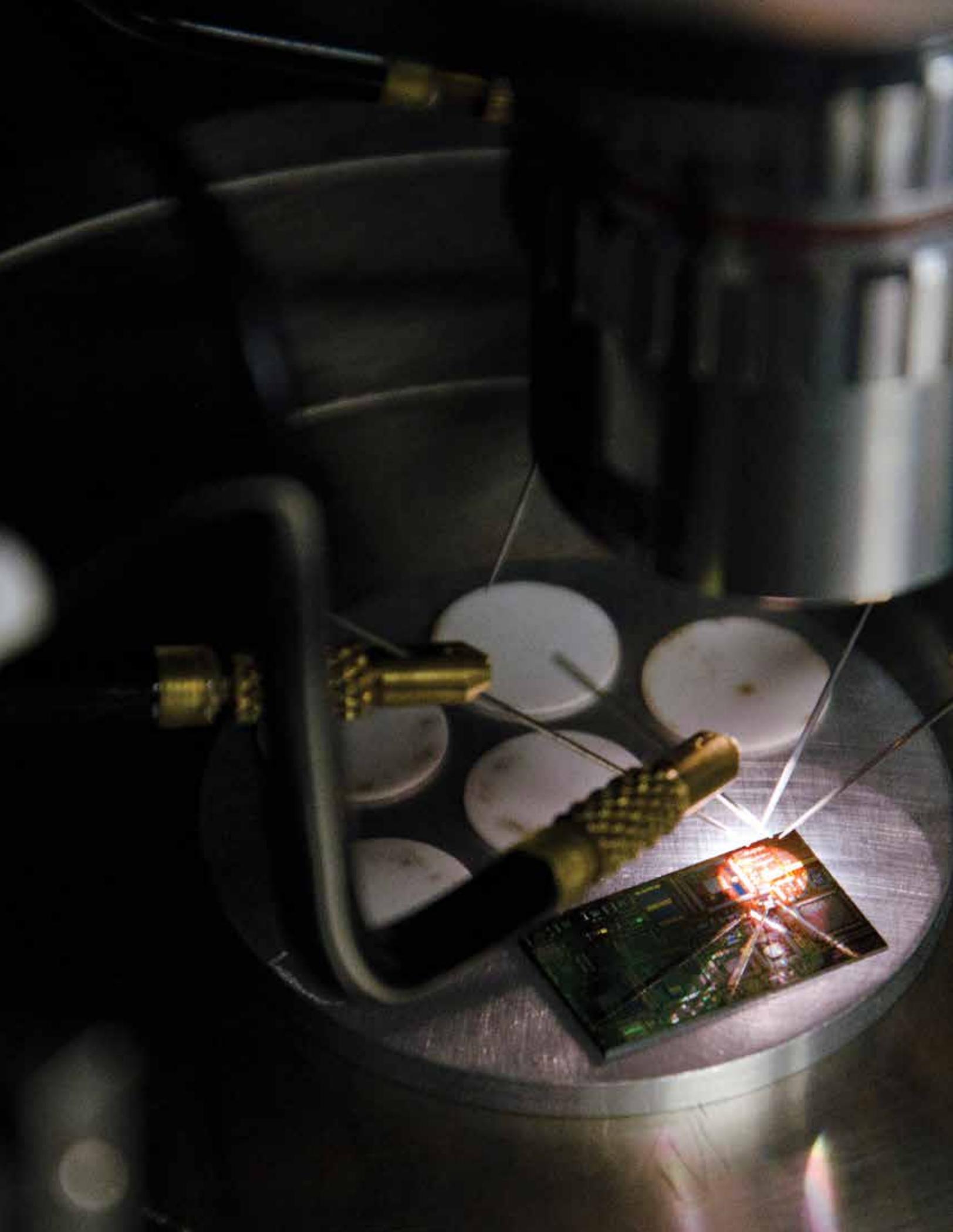
ENGINEER

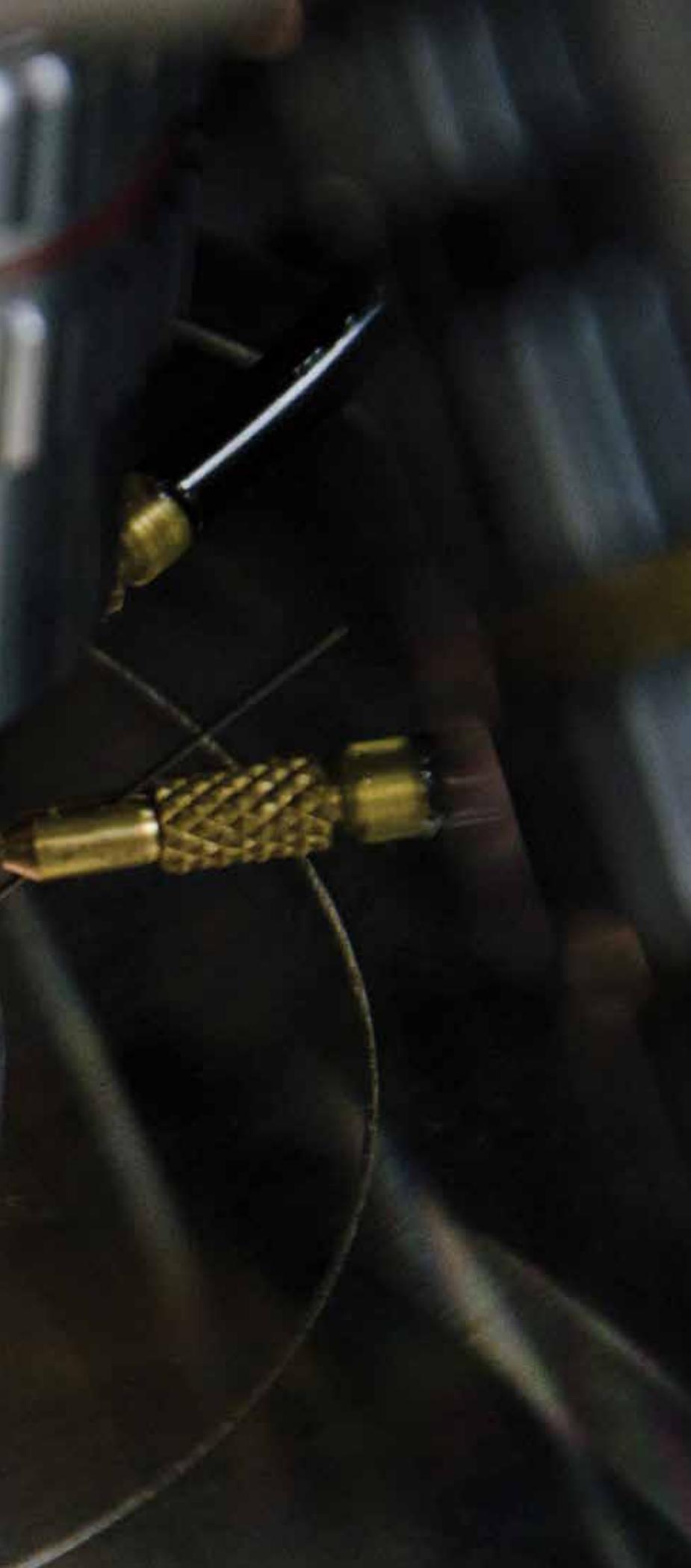


Engineering Artistry



UNIVERSITY OF
ARKANSAS
COLLEGE OF
ENGINEERING





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Engineering Artistry

According to some of our talented alumni, engineering and art have more in common than you might expect.

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Cover:
"Blue Ridge Stream" by Jim Hefley, BSIE 1961

Left:
This equipment is used to evaluate circuits made with silicon carbide, a semiconducting material that is able to withstand extremely high voltage and is a good thermal conductor, meaning it can operate at high temperatures without requiring extra equipment to remove heat. Photo by AnneDella Hines



John English
dean, College of Engineering

Fall is one of my favorite times of year. In August, the campus began to buzz with the energy of students, and now the semester (not to mention football season) is in full swing! In addition to a new crop of freshman engineers, we have several new faculty members this semester. The college has also been busy with several projects over the summer. We've been working on a new strategic plan, and we've also appointed our new associate dean for research, named two new department heads, and implemented the findings of the Research Task Force.

We also had some exciting events—our annual Alumni Awards Banquet in the spring, the dedication of a renovated space for our biomedical engineering department and the first College of Engineering Federal Day. For this, we invited federal staffers to visit campus and learn about the innovative research we do in the College of Engineering.

Of course, one of the best things about working at the university is knowing that the reach of our engineering program doesn't end at the borders of our campus. This magazine is full of stories about alumni who have accomplished many great things with their degrees. In this issue you'll meet two industrial engineers who are Walmart vice presidents, and you can read about several engineers who have branched out into the arts.

You can also learn about the ways our undergraduates are getting research experience, and read about Darin Nutter, a mechanical engineering professor who is working with manufacturing facilities to help them save energy and money—something that benefits our economy and our environment.

I hope you enjoy this issue of the Arkansas Engineer, and I hope you'll also consider engaging with us in person. We have a great tailgating event planned for homecoming—see the back of the magazine for details. In addition, feel free to stop by anytime you're in the area. Our campus has more students than ever, some beautiful new buildings and a lot of exciting research and educational programs. Your alma mater is always growing and changing, and you are always welcome here!

A handwritten signature in black ink, appearing to be 'John English', written in a cursive style.

Mayfields Support Students With Scholarship Gifts

An alumnus of the College of Engineering and his wife are contributing \$212,000 through a life insurance beneficiary designation to create two scholarships for electrical engineering students.

The two gifts — one for \$112,000 and one for \$100,000 — from Charles F. “Micky” Mayfield Jr. and his wife, Marybeth, will establish the Marybeth and Barbara Dunham Endowed Scholarship for Electrical Engineering and the Marybeth and Micky Mayfield Endowed Scholarship in Engineering.

The Marybeth and Barbara Dunham Endowed Scholarship for Electrical Engineering will be established with a \$112,000 gift from Marybeth Dunham Mayfield, and the Marybeth and Micky Mayfield Endowed Scholarship in Engineering will be established with a \$100,000 gift from Micky Mayfield. Both scholarships will be used to support undergraduates in the Department of Electrical Engineering, with preference given to students who graduated from El Dorado High School in Arkansas or any high school in Massachusetts.

A native of El Dorado, Micky Mayfield earned a Bachelor of Science in Electrical Engineering and a Master of Science in Mathematics from the University of Arkansas.

Following his graduation, Mayfield moved to Kansas City to work in engineering, but his career eventually took him to both coasts while he worked in econometrics and sales. The majority of his time was spent working for AT&T and later Lucent Technologies, where he led the highest revenue-generating sales team in the company’s history.

Today, Mayfield is vice president of sales for Coriant and serves on the Dean’s Advisory Council for the College of Engineering. He was named a College of Engineering Distinguished Alumnus in 2014.

Marybeth Mayfield grew up in Massachusetts and earned degrees in English and education from Salem State University before completing coursework toward a master’s in psychology at Harvard University. Like Micky, she worked extensively in the telecommunications field and spent 25 years with AT&T and later Lucent. The majority of her career has centered on project management for data center relocations in New York and New Jersey, which became particularly critical after the attacks on Sept. 11. She now works as a private contractor for data center relocations.

The Mayfields, who reside in Rogers, are life members of the Arkansas Alumni Association and will be inducted into the Towers of Old Main, a giving society honoring the university’s most generous benefactors.



Micky and Marybeth Mayfield

Electrical Engineering Department Receives ‘Jolt’

Alumnus Jeff Sanders and his wife, Kathy, of Richardson, Texas, have contributed over \$1 million to the College of Engineering in support of the electrical engineering department. A portion of their contribution will be used to establish the Jeff and Kathy Sanders Endowment in Electrical Engineering, and the remainder will be used to support the High Density Electronics Center.



Jeff and Kathy Sanders

The funds designated to HiDEC will be used to purchase equipment and support research efforts to adapt low-temperature co-fired ceramic technology to develop modules capable of adapting to various wireless frequencies in a congested network to optimize consumer reception.

The purpose of the Jeff and Kathy Sanders Endowment in Electrical Engineering will be determined by the donors, in consultation with College of Engineering Dean John English at a later date.

A graduate of Springdale High School, Jeff Sanders was “always interested in becoming an engineer” and holds a Bachelor of Science in Electrical Engineering from the University of Arkansas and a Master of Science in Electrical Engineering from Purdue University.

After spending two decades working as a radio frequency design engineer, he founded his own company, Eclipse Electronic Systems, in 1993. Based in Richardson, Texas, the company supplies specialized receivers for the intelligence, surveillance and reconnaissance, or ISR, industry, which is a vital part of the nation’s military and intelligence efforts. Eclipse counts Northrop Grumman, L-3 Communications, and Lockheed Martin as its customers, as well as the government defense and intelligence communities. In December 2010, the company was acquired by Esterline Corporation, but Sanders still serves as an advisor.

Jeff Sanders was elected to the Arkansas Academy of Electrical Engineering in 2000 and has been a member of the Institute of Electrical and Electronics Engineers since 1966. He is also a member of the Association of Old Crows, which provides advocacy and education forums to the Department of Defense, industry and academia. In 2011, he was named a College of Engineering Distinguished Alumnus.

Kathy Sanders attended the University of Arkansas and graduated from UAMS with a Bachelor’s of Science in Pharmacy. After spending 30 years working as a pharmacist in a neonatal intensive care unit, she and her husband established the Jeff and Kathy Lewis Sanders Endowed chair in Pediatrics within the UAMS College of Pharmacy.

The Sanders are life members of the Arkansas Alumni Association and are recognized as part of the Towers of Old Main.

Fourteen Years of Solar Splash

When Bill Springer, associate professor of mechanical engineering, first introduced the U of A to Solar Splash, he had no idea how iconic this competition would become. The solar boat project teaches students critical skills they will use throughout their engineering careers, such as product design, team-building, reliability, theory versus practice and manufacturing. After 14 years of designing and building fully functioning boats and competing against universities from all across the nation, the U of A Solar Boat program continues to thrive.

“Dr. Springer was instrumental in institutionalizing the solar boat activity into the senior capstone course of the ME department. This attracted many students to the team,” said Alan Mantooth, professor of electrical engineering. “He is beloved by the students involved and able to inspire them to perform solidly and keep their cool under the pressure of a fast-paced racing event.”

Under Springer’s leadership, the U of A team first competed in 2000, and placed fourth in the competition. Through the next 14 years, the U of A team had multiple first place wins and even hosted the event at Lake Fayetteville from 2006-2010.

“I have had the pleasure of being involved with Solar Boat since 1999 and it has been an interesting tenure,” said Springer. “These students grew as engineers during the process and have gone on to many different career opportunities. I have enjoyed the opportunity to work with all of them and get to know them as more than just students.”

After 33 years, Springer has retired and the Solar Boat Team transitioned to its new adviser, David Albers. Springer and Albers worked together with this year’s team to ensure that Springer’s knowledge and expertise of this project would be passed along to future teams. Approximately 30 students participated in the 2014 competition, held in Dayton, Ohio. The team placed 6th overall, 3rd in the qualifying event, and received the Outstanding Hull Design award.



“The most surprising thing was that, as a break from all their programming assignments, students came and programmed for fun.”

Susan Gauch, department head

ACM Hackathon Test Students’ Programming Skills

Last spring, thirty-six computer science students spent 21 hours competing in a hackathon, a programming contest sponsored by the ACM student organization. Students competed individually or in teams of up to three people. At 6 p.m. on April 18, they were given an assignment: design a program that would enhance life on campus. They had until 3 p.m. the following day, and many of the teams stayed up all night working on their programs.

The competition was judged by Susan Gauch, head of the department of computer science and computer engineering and holder of the Rodger S. Kline Endowed Chair in Computer Science and Computer Engineering; professor John Gauch; assistant professor Matthew Patitz; and Paul Martin, a U of A alumnus and a programmer for SOAPware, a local software company.

“I am so pleased that the ACM group organized our first ever Hackathon,” said Susan Gauch. “The final projects were amazingly creative and the students demonstrated just how many different languages, packages, and technologies they could bring together to create a solution in under 24 hours. They made the job of the judges very difficult. The most surprising thing was that, as a break from all their programming assignments, students came and programmed for fun.”

The winning team, called HAK, was made up of doctoral students Stephen Ashmore, Zachariah Kindle and Jon Hammer. Their prize was a Raspberry Pi, a computer about the size of a deck of cards that is easy to program. The HAK team created an Android application called “My UARK,” which collects useful information about the university and makes it easily accessible from a smart phone.

Awards

EIGHT ENGINEERING STUDENTS AND ONE MICROELECTRONICS-PHOTONICS STUDENT received National Science Foundation Graduate Research Fellowships.

SAMUEL BECKFORD, graduate student in mechanical engineering, received the Al Sonntag Award for best paper from Society of Tribologists and Lubrication Engineers.

HALEY CLEOUS, an honors chemical engineering major, placed first in a paper competition at the Mid America Regional conference of the American Institute of Chemical Engineers.

SHAWN COLEMAN, graduate student in mechanical engineering, was invited to present at the American Physical Society meeting.

RICHARD DESCHENES, a graduate civil engineering major, has received the 2014 Dwight David Eisenhower Graduate Fellowship from the U.S. Department of Transportation.

SYDNEY DICKSON, junior civil engineering major, has been awarded the ACI Baker Student Fellowship award from the American Concrete Institute.

KAITLIN DENNEY, senior industrial engineering major, was awarded the Harold and Inge Marcus Scholarship by the Institute of Industrial Engineers.

HAILEY DUNSWORTH, junior honors chemical engineering major, was selected as a 2014 Goldwater Scholar. Dunsworth also received an Elias Klein Travel grant to present at the annual meeting of the North American Membrane Society.

KEIRON DURANT, senior honors chemical engineering major, received the Lubrizol Company Undergraduate Award from the National Organization of Black Chemists and Chemical Engineers and the Donald F. and Mildred Topp Othmer National Scholarship Award from the American Institute of Chemical Engineers.

CAROLINE FRANCE, undergraduate student in mechanical engineering, received a Fulbright



The Water Hogs were recognized by ASCE for their innovative water filtration system. From left to right: Cole, Qasem, Castillo, Lee, Tichy, Durant, Hasan.

Water Hogs Receive Award at EPA Design Competition

A team of chemical engineering, communications and Honors College students—collectively known as the Water Hogs—entered their design project in the Environmental Protection Agency’s People, Prosperity and the Planet, or P3, competition. The Water Hogs received the American Society of Civil Engineers Sustainable Development Award.

The student’s system, which uses human power and scrap materials and produces water that meets World Health Organization drinking water standards, is easy and affordable to build. A video explaining their project is on YouTube.

“Unfortunately, 780 million people around the world ... don’t have access to clean or safe drinking water. That’s where we come in,” team member Lauren Cole explains in the team’s video.

The Water Hogs’ system uses a filter and bleach to clean water. With a treadle pump that can be operated by one person, the system pumps water from a well through a filter. After that, bleach is added

to remove harmful bacteria. An electrolysis unit, which converts salt water into bleach, is powered by a bicycle, which is connected to a motor that is connected to a 12-volt car battery. “As long as the bicycle is being pedaled faster than the motor will turn the bicycle wheel, the battery will be charged,” the team explains on its Facebook page.

The Water Hogs team members are Florencio Serrano Castillo, Lauren Cole, Keiron Durant, Jordan Gross, Shumon Hasan, D.J. Lee, Omar Qasem and Cayla Tichy. Tichy, Durant, Cole and Lee have received Honors College travel grants to support their participation in the P3 competition. The team’s mentors are Christa Hestekin, associate professor and holder of the Ansel and Virginia Condray Endowed Professorship in Chemical Engineering; Roy Penney, professor of chemical engineering; and Stephanie Schulte, assistant professor of communication.

Fellowship to support her work in Korea. She was also awarded an American Society of Heating Refrigerating and Air-Conditioning Engineers (ASHRAE) scholarship.

LUISA JANER and **HANNAH KOEHN**, undergraduate industrial engineering majors, received Dwight D. Garner Scholarships from the Institute of Industrial Engineers.

JACKSON SCHMANDT, senior computer engineering major, has been awarded a CyberCorps: Scholarship for Service from the National Science Foundation.

SETH SHUMATE, graduate microelectronics-photonics student, is part of two companies that recently received awards: Silicon Solar

Solutions LLC received the SunShot Incubator award from the U.S. Department of Energy, and Picasolar Inc. received a 2013 Energy & Clean Technology Award.

DIA ST. JOHN, doctoral student in industrial engineering, was awarded the Gilbreth Memorial Fellowship by the Institute of Industrial Engineers.

MICHAEL WEST, junior honors student in chemical engineering and physics, was a Goldwater Honorable Mention.

BIBOTIC SOLUTIONS, an undergraduate business plan competition team, won the grand prize at the Richards Barrentine Values and Ventures Business Plan Competition,

and second place in the Donald W. Reynolds Tri-State Governors Cup competition. Team members include biomedical engineering students Kelley Coakley and Aundria Eoff.

The senior design team of **BRENT DANLEY**, **THOMAS JENKINS**, **JOHN MAZURKIEWICZ**, **KRISTIN PERRIN**, and **RYAN YARNALL** won first place in the 2013 G.B. Gunlogson Student Environmental Design “Open” Competition at the 2013 annual international ASABE conference.

The background features several overlapping, hand-drawn style circular lines in shades of orange and yellow, creating a dynamic, artistic feel.

ENGINEERING

artistry

People don't usually associate engineering with art. We often think of these two disciplines as opposites, and assume that few people are interested in both. But as several of our alumni have shown us, engineers can make great artists, and artists can make great engineers.



Learning to See

Barney Baxter, BSChE 1948

When Barney Baxter took up painting, he had to learn to see things in a new way. As an art instructor said to him, “you engineers are so locked into the truths of what you know that you have trouble painting what you see.” Learning to forget what he knew about a subject and simply see it as it is was a key lesson, Baxter explained. For example, when painting railroad tracks running into the distance, an artist has to “forget” that the two tracks run parallel and paint them as if they are moving toward each other. Artists also have to learn to really see colors, and perceive how the same object can look very different under different light intensities.

Barney Baxter’s interest in art began in 1942, when he took engineering drawing, but he wasn’t able to devote himself to art until recently. Baxter had a notable career, serving as president and CEO of CF Industries, a Fortune 500 company, and later owning a chemical company. When he retired at the age of 85, Baxter was able to find the time to “literally get lost” in his paintings, spending two to four hours translating abstract inspiration or the scene before him into images on canvas.

Baxter also compares painting to a skill he’s developed over the years: business management. “Painting is not that much different from managing,” he explained. “You are bringing form and artistic order to abstraction.” As a manager, he took people, machinery and resources and put them together to create a successful business. These days, as a painter, he combines ideas with paper and paint to



make his art. There is one significant difference however: painting involves much less risk. “If I’m in front of an easel with my paint and I happen to blunder, it’s easy, I just paint over it,” he explained.

Landscapes are Baxter’s favorite things to paint. Recently, though, he’s become interested in portraits, following in the footsteps of his mother-in-law, who was a portrait painter until age 97. A couple years ago, he and some fellow artists converted an empty building in their community into an art studio and brought in an instructor to help them with advanced painting techniques. Baxter is even thinking about expanding on his art, taking up sculpture in addition to painting.

Continuous Improvement

Jim Hefley, BSIE 1961

As an industrial engineer, Jim Hefley has always believed in continuous improvement. He applied this concept to his career at IBM, then as a business consultant. When he retired from Gemini Consulting in 2000, he began taking painting classes, and discovered he really enjoyed it. Now, Hefley is busy with his third career as an artist.

Hefley paints many different subjects: local landscapes, fishing scenes and European scenes that are based on photographs he’s taken on trips. He explained that his engineering background especially helps him with the composition of his painting: arranging the focal point and analyzing the relationship of the other elements in the painting to establish proper perspective.

Though Hefley explained that he’s had to expand the creative side of his brain since becoming an artist, he pointed out that art and business have a surprising amount in common.

“A lot of people, including most artists, don’t appreciate the degree to which you can be creative in business,” he said. “Maybe I’ve sought out those assignments, or maybe they’re always there. I’ve always thought finding new things, new processes, new systems, is a creative process, just like art.”

Still a savvy businessman, Hefley began selling his art a few years ago, and he donates the profits to charity. Currently, Hefley donates 90 percent of the money he makes from his art to an organization called Trout Unlimited, which is dedicated to protecting and restoring coldwater fisheries and their watersheds. Hefley’s contributions



directly support one of Trout Unlimited’s youth camps, which teach local kids about fishing and conservation.

Hefley also donates 10 percent to non-profit groups that support breast cancer patients. He contributes to the Hope Cancer Center for Women in his hometown of Asheville, North Carolina and to Casting for Recovery, an organization that enriches the lives of women who are breast cancer survivors by combining education, peer support and fly fishing retreats.

The Artistic Side is Everything

Kent Burnett, BSIE 1968

For Kent Burnett, engineering and art have always been interrelated. He was inspired by his uncle, an artist who drew renderings of space shuttles for the Lockheed company and took photos of cars in his spare time.

Burnett discovered photography when he was twelve years old. The owner of a repair shop in Burnett's hometown of Mena, Arkansas, had a darkroom and let Burnett use it. It was there that he learned about framing and lighting a photograph, as well as the creativity involved in processing the image.

When he began studying industrial engineering at the U of A, Burnett discovered that "the artistic side was everything in engineering." In his classes, Burnett used his artistic skills to make line drawings and diagrams, as well as using the creative and observational skills he'd honed through photography.

Burnett enjoys combining travel photography with candid shots of people, capturing the look on someone's face as they observe a piece of art, for example. He has taken photographs in the Swiss Alps and on African safaris, and he loves returning to the same location to retake a picture with a new camera. "Travel is the reason for photography and photography is the reason for travel."

Burnett has had a successful career with Dillard's and in his current job, his career and his photography have come closer than ever. As vice president of technology, Burnett deals with



e-commerce, which, he explained is "all about images on the Internet." In this capacity, Burnett works with photographers, stylists and models to take and publish many images in a short amount of time, and his understanding of photography, technology and project management all come in handy.

In his spare time, Burnett continues to pursue his own photography. "It rounds out your life having a hobby like that," he explained. Recently, he sold his first photographs at a show, and after decades of a successful career in business, it's the money that he received for those pieces of art that means the most to him.

I'm Better at Everything I Do Because of the Arts

Michael Weir, BSCE 1998

Michael Weir didn't begin his career as an engineer. In high school, he played the violin and was active in theatre. In college at UALR, he earned a double major, studying radio, T.V. and film as well as theatre. He worked as a news producer for television stations in Fort Smith and Tulsa, but after a while, he decided to pursue a different career.

Weir's father, Larry Weir, is a civil engineer from the U of A, so in his second career, Weir decided to follow his father's footsteps. After earning an engineering degree, he worked for Engineering Services Inc. in Springdale for 15 years. In this job, he mainly worked designing rural water and wastewater systems.

Weir thought his theatre days were behind him until someone from the Arts Center of the Ozarks contacted him and said "You used to be in plays, didn't you?"

"I discovered the Arts Center and never left," Weir said. For over a decade now, he has acted in a couple plays a year. Most recently, he played the role of Max Detweiler in "The Sound of Music." Acting is a big commitment of time and energy. Weir explained that for each play, he spends five to seven weeks rehearsing, devoting his evenings and weekends to the theatre. Luckily, he had the support of both his employer and the Arts Center to help balance his career and his hobby. "ESI was great about supporting my acting," he explained. "In turn, the Arts Center is great about adjusting to the busy lives of its volunteers whenever possible."



About a year ago, Weir left ESI to start a real estate business with his wife, and his schedule is now "very busy but very flexible," making it even easier to pursue his acting as well as other community involvement.

Weir explained that acting increased his social skills and gave him confidence, which helped him in his engineering career. "When you're acting, you have to have an open mind about what you're approaching," he said. "It's the same with the political nature of public works. You have to adapt to your surroundings and know what to say and what not to say."

All four of these engineers came to art in different ways at different times of their lives, but they all agree on the role that art plays in their lives. As Weir puts it, "My career makes me a living, but the arts give me a reason to live."

"I get to know other people that are working on what I want to do in the future. And I would like to go to graduate school— that's what I enjoy the most, getting to know what I'm going to do later."

Aminta Castillo, electrical engineering undergraduate



Starting Early

Undergraduates Gain Research Experience

For many undergraduate students, the end of classes in the spring isn't the end of learning opportunities. By participating in research projects, undergraduates can gain valuable experience, get insight into their future plans and even earn money. In the electrical engineering department, programs like the National Science Foundation's Research Experience for Undergraduates and the George Washington Carver program are providing these opportunities.

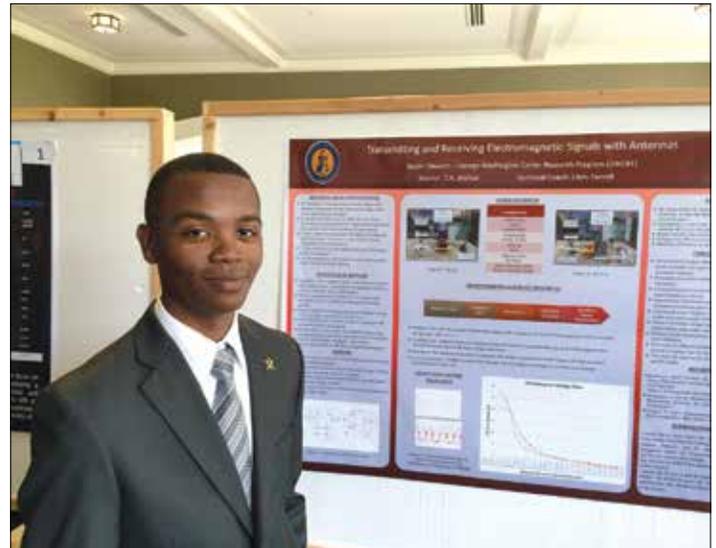
In Alan Mantooth's lab, several undergraduate students are teaming up to help design and test integrated circuits. These circuits are made with silicon carbide, a new material that can withstand higher temperatures than conventional silicon.

Dustin Hill, an Honors College student who will be a senior in the fall, explained that taking part in research was challenging, but rewarding. "I'm learning quite a bit and it's very interesting, if brain wracking at times. I compare it to being thrown into an ocean and you have to try to find your way back to shore."

Aminta Castillo is a student from Panama. This is her third summer to participate in undergraduate research. "You can tell I really like it, I keep coming back," she said. "I get to know other people that are working on what I want to do in the future. And I would like to go to graduate school— that's what I enjoy the most, getting to know what I'm going to do later."

The undergraduates receive guidance from doctoral student Matt Farlow. Farlow explained that being a mentor to the REU students has been a learning experience for him, too. "It's really a unique experience to help mentor people. Learning the electronics, being able to describe what you've learned over the years, how to help people through all the landmines you've walked over in the past."

In another lab, Joe Moquin is spending his summer writing code for the Smart Green Power Node. He is designing an app and website that collect data and allow the user to interact with the system. Moquin explained that learning through research is very different from learning in the classroom. "Typically in the classroom, the teacher has done this sort of thing, and has an idea of how it's supposed to go," he said. "Here we have a problem, and we need a solution for it. I have to both figure out the solution and figure out the tools that I need to use in order to make that solution work. That's been very interesting, because I think that I've learned quite a bit."



Jaylan Dawson presents his research on wireless electric power.

Jaylan Dawson, a student from Fort Valley State University, spent the summer at the University of Arkansas as part of the George Washington Carver program. In this program, students from historically black colleges and universities, Hispanic-serving institutions and tribal colleges spend the summer working with faculty mentors on research projects. Many George Washington Carver participants who come to the U of A return for graduate school.

For his project, Dawson created a wireless electric power transmitter that can be used as a demonstration unit. One side, which is named Transmitting Electromagnetic Signals with Antennas, or TESA, sends a signal and the other side, called Receiving Electromagnetic Signals with Antennas, or RESA, receives them. Dawson, who is majoring in math at Fort Valley, explained that building the unit was a crash course in engineering, and he's considering continuing with engineering in graduate school, based on his summer experience.



Walmart

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Local Company, Global Careers

Big business can make a difference

Ami Spivey, BSIE 1995

Senior Vice President of International Business Processes

Ami Spivey grew up in Fayetteville. She hadn't planned on going to the U of A until she spent an afternoon with industrial engineering department head Eric Malstrom and Neil Schmitt, dean of engineering at the time. She left convinced that studying industrial engineering at the U of A was the path for her.

As a student, Spivey began working as an hourly associate at Walmart, and convinced her supervisors to allow her to do an internship with the company. She also designed her own cooperative learning project. Spivey graduated with a Bachelor of Science in industrial engineering and a job offer from Walmart.

Spivey moved up the ladder quickly, and worked in a wide range of positions, from engineering to operations to transportation and finally, innovation. Though her career has been diverse, one thing remains consistent: Spivey's commitment to learning from the people around her.

In Spivey's first engineering position, designing an order-filling system for distribution centers across the country, she knew that listening to associates was the best way to optimize her system. "They know what the problems are and what the solutions are," she explained.

From there, Spivey switched to the operations side of the company and worked as a regional operations manager. After that, she started a distribution center in Pennsylvania, where she was responsible for operations, starting with hiring and training the

employees and teaching them Walmart culture. On September 11, 2001, her team helped replenish supplies to Ground Zero.

Recognizing her leadership potential, Spivey's supervisors asked her to move to transportation, where she supervised truck drivers. In this position, Spivey continued to learn from the people she worked with. She explained that the drivers had a lot of ideas. "And usually they're right," she said. "They taught me a lot about leadership. They taught me to listen."

Sustainability became a part of Spivey's job when fuel prices started going up in the mid 2000's. Drawing on her engineering skills, Spivey led a team focused on moving more cargo with less driving. An environmentalist she was working with told her that this project would have a bigger effect than everything else she had worked on in her 20 year career. "That job opened my eyes to the impact we can have," Spivey explained. "Big business can make a difference."

After that, Spivey was asked to start an innovations engineering team at Sam's Club, finding new ways to provide the best customer experience. In her current position, Spivey works in innovations on an international scale. She helps Walmart stores and Sam's Clubs around the world find and implement best practices.

Spivey explained that her teams must understand and value the culture of the countries they work in, while practicing Walmart cultural values--respect for the individual, taking care of customers, striving for excellence, and a foundation of integrity—in a way that makes sense for that country. "The teams need to model our culture while being a student of the country's culture," she explained.

Spivey is a proponent of co-ops and internships for students, because she credits her education and early work experience with preparing her for her career. As a member of the Arkansas Academy



“The culture is the same, but it’s how you apply it. What does respect for the individual mean in different markets? The teams need to role model the culture, be a student of the culture.”

Ami Spivey

of Industrial Engineering, she serves on a committee focused on providing global experiences for students, and she also provides international work experiences for students through her job.

When Spivey was growing up in Fayetteville, she thought she would have to leave the area in order to experience the world. She never suspected that she could do both; that going to the U of A and getting a job at a local company would propel her into a global career.

Eat What You Cook

Chuck Tilmon, BSIE 1994, MSIE 1995

Vice President of Global Food Sourcing, West Coast

Chuck Tilmon has always been a Razorback. Growing up in Texarkana, he was an Arkansas High School Razorback. When he went to college, he chose the U of A, the alma mater of both his father and grandfather and the school where his sister, Jennifer, was earning a chemical engineering degree.

Tilmon’s experience as an engineering student was very influential. As a senior, he took a course from John English, who became his adviser when he pursued his master’s degree. From English, Tilmon learned how to work with a team and how to break a large project down into smaller tasks. He also has good memories of Eric Malstrom. “He had a positive style of listening and taking ideas and helping to reformulate them,” Tilmon remembered.

When Tilmon graduated, he had many career options. He chose to work in logistics, and worked for Arkansas Best Corporation and then for J.B. Hunt. In 2002, he began working at Walmart as a merchandise logistics manager. Next, Tilmon moved to supply chain strategy, then replenishment, making sure that inventory was at the right level from supplier to distribution center to the store.

While working in this role, Tilmon received the 2012 Grocery Merchant Business Partner of the Year Award for the work he did



preparing his replenishment team for growth in the produce area. The experience he gained in that job led to his current role. As vice president of global food sourcing, Tilmon oversees the distribution of produce from California to Walmart stores across the United States.

Tilmon’s favorite part of his job is visiting the growers in the field. He explained that a quarter of the produce we eat in the United States comes from California, and much of this is grown on family farms. “We work with the people who started the company or their sons or daughters,” he explained. “They’re proud of their heritage.”

The son and grandson of farmers himself, Tilmon loves to put on jeans and a t-shirt and “kick the dirt” with farmers. The summers he spent on his father’s farm have given Tilmon insight into the challenges farmers face, such as rain, labor and price fluctuations.

Organic produce also presents new challenges. Tilmon must work to make sure organic products are affordable while balancing the fact that it costs more to produce. Another challenge is drought. Tilmon explained that Walmart hopes to build sustainable processes to conserve water in the area, and to influence other industries to do the same.

Though he lives on the other side of the country, Tilmon remains connected with his alma mater. He was inducted into the Arkansas Academy of Industrial Engineers in 2011, and he is working with the department to resurrect the IIE organization he was part of as a student. He also participates in mock interviews, helping students learn to present themselves well as they look for a job.

Tilmon’s job has made him look at food differently. “Food is a very strategic area for the country,” he explained. “Where do we get it? How do we source it? How do we make it affordable?” Walmart associates are advised to “eat what you cook,” to experience the systems and processes they develop first hand. Since moving to California, Tilmon has started paying more attention to the food he eats, and eating a lot more fresh fruits and vegetables. His work in produce has also connected him with his past. “It reminds me of my summers on the farm,” he explained.



“When it comes to produce. We work with the people who started the company or their sons or daughters. They’re proud of their heritage.”

Chuck Tilmon



“The primary motivation for all my efforts is to improve system energy efficiency, resulting in energy conservation and reduced use of natural resources.”

Darin Nutter, mechanical engineering professor



Saving Money, Saving Energy

Students and Industry Benefit from Energy Assessments

As a land grant university, the University of Arkansas is obligated to educate students, contribute to the local economy and conduct research. In his role as director of the Arkansas Industrial Energy Clearinghouse, or AIEC, and the Industrial Assessment Center (IAC), mechanical engineering professor Darin Nutter is able to do all three of these things.

In the state of Arkansas, customers of investor-owned utility companies pay an energy efficiency fee. This money funds rebates that energy companies give customers for upgrades that improve the energy efficiency of their homes or businesses, but it also pays for small and medium-sized manufacturers to get energy efficiency resources and assessments through these two organizations.

The Arkansas Industrial Energy Clearinghouse features a full-time engineer and a contact center that provides personalized answers to questions about energy efficiency, helps manufacturers perform self-assessments on their use of energy, and provide resources such as publications and software so that businesses can create their own energy management programs. They also offer limited on-site plant assessment services. All of their services are provided free of charge.

The Industrial Assessment Center at the University of Arkansas is an affiliate of the IAC at Oklahoma State University. This center sends engineering faculty and students to small and medium-sized manufacturing plants to review energy bills, examine the facilities and identify projects that can save the plants energy and money. The University of Arkansas is one of 32 participating universities across the country that helps US manufacturers and provides energy engineering experience to students.

One of the manufacturers that Nutter works with is Pratt & Whitney, a leading aircraft engine manufacturer. Brad Rekus, environment, health and safety manager for Pratt & Whitney's Springdale, Arkansas, facility, explained that the company benefitted from working with the university. “We’ve been extremely happy with what they’ve done,” he said. “They’ve been exceptional to work with. I would strongly recommend anyone who has not been working with the Clearinghouse to take advantage of the program.”

Nutter and Chase Harding, mechanical engineering research associate and the staff engineer at the AIEC, worked with a team of students to assess Pratt and Whitney's energy use and provide suggestions to help the company conserve energy. Recommendations included changing the lighting, reducing the amount of power the plant uses when demand is low and improving the performance of their compressed air system.

Through this experience, Pratt & Whitney learned about new technology and approaches to saving money and energy. The facility has currently completed 80 percent of its recommendations. They have seen a reduction of more than 30 percent in greenhouse gas



Chase Harding, AIEC engineer, measures the combustion efficiency of a steam boiler.

emissions, even while their sales have gone up 25 percent. Pratt & Whitney has also saved about \$62,000 annually because of the changes they've made. In 2014 they received the Arkansas Environmental Stewardship Award for the pollution prevention program they developed with the help of the university.

The students who help with the assessments also benefit, explained Nutter, who worked for the Industrial Assessment Center at Texas A&M as a graduate student. By participating in these projects, University of Arkansas students gain hands-on experience with the manufacturing industry and also with energy efficient practices. One of his current graduate students, Chelsea Wilson, agreed. “It's good job experience,” she said. “When you're in the classroom, you learn about systems but never see them. I remember the first time I saw a boiler—I hadn't realized the scope.”

Wilson hopes to go into consulting when she graduates, and continue to help businesses reduce their energy bills, because she has seen the difference it can make “It's a huge step toward the U.S. manufacturing future,” she said.

In his research, Nutter seeks to advance the understanding of various fundamental energy interactions within industrial manufacturing and commercial buildings, and his research efforts are closely connected to his AIEC and IAC efforts. “The primary motivation for all my efforts is to improve system energy efficiency, resulting in energy conservation and reduced use of natural resources. In fact, much of my research is spawned by the identification of current problems, issues, and inefficiencies within the industrial and commercial building sectors” he explained.



Department head Kevin Hall presents civil engineering research to guests from Washington, D.C.

Federal Staffers Visit College

On Aug. 27, legislative staff members from the offices of Senators John Boozman and Mark Pryor and the offices of Representatives Tom Cotton, Rick Crawford and Steve Womack toured campus to learn more about engineering research. The guests interacted with faculty

researchers, visited engineering research laboratories and heard from Randy Massanelli, vice chancellor for governmental relations, Provost Sharon Gaber and John English, dean of the College of Engineering. The day-long event showcased innovative research including

a universal power router, butanol fuel generation, cancer immunology, muscle generation, nano-scale solar panel surface design, economic impacts of the AR River, and tornado and earthquake recovery.

College Celebrates New Space for Biomedical Engineering

On Thursday, Aug. 28, the College of Engineering dedicated the biomedical engineering wing, located on the first floor of John A. White, Jr. Engineering Hall. Speakers included Chancellor G. David Gearhart; Dean John English; biomedical department head Ashok Saxena; University of Arkansas board of trustee member Jim von Grempp; biomedical doctoral student Gage Greening; and Aric Lasher, director of design of HBRA Architects.

The biomedical engineering department, established in 2012, is the only department of its kind in the state. The department is expected to enroll over 200 students this semester. The renovated wing, located on the first floor of the east side of the building, contains office space for the faculty and staff. The renovations also include two new teaching laboratories on the first floor of White Hall.

Dean English recognized the faculty and administration members who supported and contributed to the formation of the department, including Provost Sharon Gaber, Lalit Verma, head of the department of biological and agricultural engineering, Terry Martin, former interim dean of engineering and former interim department head, and Ashok Saxena, dean emeritus and current head of biomedical engineering. He also praised the architecture



Speakers at the biomedical engineering wing dedication ended the celebration with a ribbon cutting. From left to right: Gage Greening, Aric Lasher, Dean John English, Ashok Saxena, Jim von Grempp, Chancellor G. David Gearhart.

firm responsible for the renovations.

“The renovations you see today are the work of HBRA Architects, who did a great job of preserving the historic nature of the building while providing a contemporary space for our

biomedical faculty, staff and students,” said English. “We look forward to a time in the near future when all of White Hall will look this elegant.”



New Faculty



Harry Pierson
Industrial Engineering

Harry Pierson received a bachelor's degree in mechanical engineering and a master's degree in engineering management from the University of Missouri-Rolla. He holds a doctorate in industrial and systems engineering from The Ohio State University. Pierson has worked as a visiting assistant professor of mechanical and manufacturing engineering at Miami University, and has experience in the manufacturing industry through positions with Spang & Co. and Ingersoll-Rand. His research interests include agile/advanced manufacturing, robotics, mechatronics, and industrial automation.



Narasimhan Rajaram
Biomedical Engineering

Narasimhan Rajaram's research interests are in the development of functional and molecular optical imaging techniques that can assess tumor biology and predict long-term outcome. He received a bachelor's degree in electronics and instrumentation engineering at Anna University in Chennai, India. He holds a doctorate in biomedical engineering from the University of Texas at Austin, and has served as a postdoctoral associate and research scientist at Duke University.



Xintao Wu
Computer Science and Computer Engineering

Before coming to the U of A, Wu was a professor of software and information systems at the University of North Carolina at Charlotte. He received a bachelor's degree in information science from the University of Science and Technology of China, a master's degree in computer engineering from the Chinese Academy of Space Technology and a doctorate in information technology from George Mason University. He will hold the Charles D. Morgan/Axiom endowed Graduate Research Chair.



Gary Prinz
Civil Engineering

Gary Prinz investigates steel infrastructure challenges related to extreme or repeated loads, including earthquake loads, blast and vehicle or rail traffic. Prinz joins the University of Arkansas from the Swiss Federal Institute of Technology, where he was a postdoctoral researcher. He received his bachelor's, master's and doctorate in civil engineering from Brigham Young University and is a registered professional engineer in the state of California.



Benjamin Runkle
Biological and Agricultural Engineering

Before coming to the U of A, Benjamin Runkle was a post-doctoral research scientist at the University of Hamburg's Institute of Soil Science in Hamburg, Germany. He holds a bachelor's degree in civil and environmental engineering from Princeton and a master's degree and doctorate in civil and environmental engineering from the University of California, Berkeley. Runkle's research focuses on sustainability and water resources, and his interests include carbon-water interactions in wetlands and permafrost landscapes.



Wenchao Zhou
Mechanical Engineering

Wenchao Zhou earned a bachelor's degree in mechanical engineering from the Huazhong University of Science and Technology in Wuhan, China, a master's degree in mechanical engineering from Xi'an Jiaotong University in Xi'an China, and a doctorate in mechanical engineering from the Georgia Institute of Technology. He has worked at Oak Ridge National Laboratory, and as a research fellow on additive manufacturing technology for electronics at the Shenzhen Institute of Advanced Technology in Shenzhen, China.

Lockheed Martin Welcomes Students with Pizza Party

Lockheed Martin sponsored a Welcome Back Pizza Party, providing pizza and drinks to students at the beginning of the fall semester.



College of Engineering Alumni Awards Banquet



Above, Hall of Fame members in attendance: Jack Buffington (2009) BSCE 1961, MSCE 1968, Admiral, Navy Civil Engineer Corps (retired); Buck Johns (1977) BSIE 1964, president, Inland Energy, Inc.; Neil Schmitt (2014) BSEE 1963, MSEE 1964, College of Engineering dean emeritus; Robert Davidson (2014) BSIE 1970, president and chief executive officer (retired), Arkansas Best Corp.; Jack King (2013) BSEE 1962, MSEE 1963, president and chief executive officer (retired), Oglethorpe Power Corp., Senior vice president (retired), Entergy Corporation; Julian Stewart (2010) BSCE 1957, Sales and Marketing (retired), IBM Corporation.

Clockwise from below: Dana Sedgass, Robert Davidson and John English; Neil Schmitt and Grady Harvell; Big Bands Unlimited provided music at this year's banquet.

- DANA SEDGASS**, Distinguished Alumnus – BSIE 1981, MSIE 1982, partner (retired), Accenture
- JEAN LEGER**, Distinguished Alumnus – BSChE 1982, MSChE 1983, vice president of utility operations, OG&E Electric Services
- KYLE ROGERS**, Early Career Alumnus – BSCS 1997, chief technical officer, SOAPware
- ROBIN PRINCE**, Early Career Alumna – BSME 2003, postdoctoral associate, University of California
- TRACY BLACK**, Distinguished Alumna – BSCS 1988, senior vice president of information technology, J.B. Hunt Transportation Services Inc.
- GREG WHITSITT**, Early Career Alumnus – BSCSE 1999, managing architect, Cerner Corp.
- CHARLES MAYFIELD**, Distinguished Alumnus – BSEE 1964, M.S. 1965, vice president, sales, Siemens Communications/Nokia Siemens Networks/Coriant
- KEVIN SPEER**, Early Career Alumnus – BSEE 2003, district manager, Industrial Power Control Division, Infineon
- SHUI-QING "FISHER" YU**, John L. Imhoff Outstanding Researcher--assistant professor of electrical engineering
- DOUGLAS SPEAROT**, John L. Imhoff Outstanding Teacher--associate professor and holder of Twenty-First Century Professorship in Mechanical Engineering
- GREG SCHLUTERMAN**, Early Career Alumnus – BSAE 1999, MSME 2002, program manager, Harrison French & Associates
- DREW HARRISON**, Early Career Alumnus – BSIE 2000, vice president of operations, Harrison Energy Partners
- DOUGLAS HUTCHINGS**, Early Career Alumnus – MS 2007, Ph.D. 2010, founder and CEO, Silicon Solar Solutions and Picasolar
- JIA DI**, John L. Imhoff Outstanding Researcher--associate professor of computer science and computer engineering
- RICHARD WELCHER**, Early Career Alumnus – BSCE 1999, MSCE 2004, vice president and principal, Tatum-Smith Engineers Inc.



Awards

FRANCES GRIFFITH, civil engineering research associate, was named a fellow of the American Concrete Institute.

MICAH HALE, professor of civil engineering, was named a fellow of the American Concrete Institute.

AJAY MALSHE, Distinguished Professor of mechanical engineering and holder of the Twenty-First Century Endowed Chair in Materials, Manufacturing and Integrated Systems, was named a fellow of the International Academy of Production Engineering.

KIM NEDDY, dean of the Graduate School and International Education, industrial engineering professor and holder of the Twenty-First

Century Professorship in Engineering, has been named a fellow of the American Society for Engineering Education.

DARIN NUTTER, professor of mechanical engineering, received the Industrial Assessment Center Distinguished Alumni award from the U.S. Department of Energy.

SCOTT OSBORN, associate professor of biological engineering, was awarded the 2013 Presidential Citation for Merit by the American Society of Agricultural and Biological Engineers.

ED POHL, professor of industrial engineering and holder of the John L. Imhoff Endowed Chair in Industrial Engineering, was named an IIE fellow by the Institute of Industrial Engineers.

KEITH ROPER, associate professor of chemical engineering and holder of the Charles W. Oxford Endowed Professorship in Emerging

Technologies, was named a fellow of the American Institute for Medical and Biological Engineering.

JOHN WHITE, chancellor emeritus and Distinguished Professor of industrial engineering, received the National Engineering Economy Teaching Excellence Award from the American Society for Engineering Education.

WHITE also was the recipient of the Wellington Award from the Engineering Economy Division of Institute of Industrial Engineers.

MIN ZOU, professor of mechanical engineering and holder of the Twenty-First Century Professorship in Mechanical Engineering, was named a fellow by the Society of Tribologists and Lubrication Engineers.

College of Engineering Announces New Associate Dean for Research

The College of Engineering has selected Heather Nachtmann, professor of industrial engineering, as its new associate dean for research. She will coordinate the research and graduate education activities in the college. Nachtmann is tasked with promoting and advancing scholarship, facilitating research collaboration both within the college and with other colleges and universities, and carrying out the research vision for the College of Engineering.



Heather Nachtmann

“I am very pleased to announce Dr. Nachtmann’s appointment to this position,” said John English, dean of the College of Engineering. “The college has always had a strong research program, but now we are putting even more focus on exploration and innovation. In this new role, Dr. Nachtmann will carry forward the work that was begun by our Research Task Force, and I am confident that her work will benefit both our faculty and our students, in addition to increasing

the reputation of engineering at the University of Arkansas.”

Nachtmann holds bachelor’s, master’s and doctoral degrees in industrial engineering from the University of Pittsburgh. She joined the University of Arkansas faculty in 2000. Her research focuses on transportation systems, logistics modeling and economic decision analysis. She currently serves as the director of the Maritime Transportation Research and Education Center and the Mack-Blackwell Rural Transportation Center. She also held a leadership position in the Center for Innovation in Healthcare Logistics.

Nachtmann is a fellow of the American Society for Engineering Management. She has authored and co-authored numerous publications and has received best paper awards from *The Engineering Economist* and *Engineering Management Journal*.

“I am excited to work with Dean English and our college faculty as we pursue our goal of becoming a top 50 public graduate engineering school,” said Nachtmann. “Our research vision is built on the college’s existing strengths in electronics, energy, healthcare systems engineering, nanomaterials science and engineering, and transportation and logistics. We’re also developing emerging research areas including aerospace, cybersecurity and data analytics.”

Research

Researchers in the College of Engineering have been busy looking for ways to improve our lives and make our planet a healthier, safer place to live. Here are some of the projects they are working on.

Researchers in the lab of **ALAN MANTOOTH**, Distinguished Professor and holder of the Twenty-First Century Chair in Mixed-Signal Integrated Circuit Design and CAD, have designed integrated circuits that can survive at temperatures greater than 350 degrees Celsius – or roughly 660 degrees Fahrenheit. Their work, funded by the National Science Foundation, will improve the functioning of processors, drivers, controllers and other analog and digital circuits used in power electronics, automobiles and aerospace equipment – all of which must perform at high and often extreme temperatures.

JEFFREY WOLCHOK, assistant professor of biomedical engineering, has received a three-year, \$437,248 grant from the National Institutes of Health to design and test a biomaterial that can regenerate damaged skeletal muscle.

MATT PATITZ, assistant professor of computer science, will receive a nearly \$440,000 grant from the National Science Foundation to further his research in the development of theoretical and computational models of self-assembling systems.

MAGDA EL-SHENAWEE, professor of electrical engineering received a three-year, \$388,913 grant from the National Science Foundation to further her work on an alternative, noninvasive method of detecting breast cancer in excised tumors in real time.

DAVID ZAHAROFF, holder of the Twenty-First Century Endowed Professorship in Biomedical Engineering has received two grants totaling almost \$2 million from the National Cancer Institute at the National Institute of Health to develop new molecules and biopharmaceuticals that enhance a patient's immune response against tumors.

TIM MULDOON, assistant professor of biomedical engineering, has developed an inexpensive, endoscopic microscope, which will help clinicians detect and diagnose early-stage disease, primarily cancer.

A research team, led by **OMAR MANASREH**, professor of electrical engineering, has achieved the highest efficiency ever in a 9 millimeter-squared solar cell made of gallium arsenide. The team published its findings in Applied Physics Letters and the April 2014 issue of Solar Energy Materials and Solar Cells.

VIJAY VARADAN, Distinguished Professor and Twenty-First Century Endowed Graduate Research Chair in Nano, Bio and Medical Technology has developed a wireless health-monitoring system. The system includes a dry, textile-based nanosensor and accompanying network that detects early signs of traumatic brain injury by continuously monitoring various brain and neural functions.

BLUEINGREEN LLC, a water-quality management firm affiliated with the University of Arkansas, has reached agreements with water providers in three states to help them more effectively and efficiently produce clean drinking water. BlueInGreen will install its dissolved carbon dioxide solutions system – an invention patented by the University of Arkansas System's statewide Division of Agriculture and exclusively licensed to BlueInGreen – at water treatment facilities in Omaha, Nebraska; Bismarck, North Dakota; and in the Antelope Valley, located 60 miles north of Los Angeles.

Former Dean Returns to Lead Biomedical Engineering Department

Engineering Dean Emeritus Ashok Saxena has been selected as head of the department of biomedical engineering. Saxena is the first permanent head of the department, which was created in 2012. He is taking over the position from Terry Martin, who served as interim department head from 2012-2014.

"I can't say how happy I am to have Dr. Saxena back and serving in this position," said engineering Dean John English. "He, Dr. Martin and Dr. Verma [head of biological and agricultural engineering] put so much effort into creating the biomedical engineering program and growing it into the thriving department it is today. I can't think of a better person to lead the department at this critical time."

Saxena's vision for the department is to develop a high quality biomedical engineering program. He is encouraged by the progress the department has made in attracting students and securing lab,



Ashok Saxena

classroom and office space through renovations in the John A. White, Jr. Engineering Hall. "The students who choose to study biomedical engineering are top students," he said "We just need to provide them with opportunities to accomplish great things in the field."

Plans for the future include increasing research funding, especially from the National Institute of Health, fostering collaboration with the University of Arkansas for Medical Sciences and attracting more doctoral students.

Saxena served as dean of the College of Engineering from 2004 until 2012, when he stepped down in order to serve a two-year appointment as the senior leader at Galgotias University, a new private, multidisciplinary research university near Delhi, India.

As vice chancellor, Saxena oversaw the growth of Galgotias from zero to 6,500 students. He also helped the country of India gain admission to the Washington Accord, an international engineering accreditation organization.

Saxena is happy to be back in Fayetteville, entering a field he's wanted to pursue, and leading the department he helped create to its full potential. "This is an opportunity to pursue my dream," he said. "I just hope it will be as good for the department as it is for me."

IN MEMORIAM

FRANK CLASSEN ADAMS BSME'85, Dayton, OH, June 5. He worked as an aeronautical engineer for both Lockheed Martin in Fort Worth, TX, and the U.S. Air Force for the past three years in Dayton.

DAVID C. EDWARDS BSME'63, Hernando, MS, May 30.

CHARLES E. STANLEY BSEE'53, Manassas, VA, May 28. A World War II veteran, he worked for Western Electric Co., where he worked on missile defense systems and automated aircraft landing systems. He retired in 1981 after 28 years.



In Memoriam

George Combs

George Donald Combs, BSChE '59, PhD '64, of Fort Smith died Monday June 9, 2014. He was born October 2nd 1937, in Fort Smith, to the late George W. and Martha Coleman Combs. George was the first person to earn a PhD in Engineering from the University of Arkansas Fayetteville. After earning his doctorate, Combs was a senior research engineer for Exxon before returning to the U of A from 1970-74 and 1975-78 as an associate professor of engineering science. He also helped found an environmental company, ENSCO, which was the first company in the United States licensed to incinerate PCBs. A strong believer in education, his donations helped build the Bell Engineering Center at the U of A, as well as funding scholarships. He was a member of the College of Engineering Dean's Advisory Council and the College of Engineering Hall of Fame.

DONNA L. READ BSIE'85, Listening Cove, May 28. She was co-owner of HyTech Professional Cleaning Services.

RONALD GENE LINDSEY BSCE'68, Temple, TX, May 24. He was a senior sales associate for AFLAC for 32 years.

DENNIS R. HILL BSCE'74, Ozark, May 19. He worked for Jack Burge Construction in Fayetteville for several years before retiring as the director of the physical plant at Arkansas Tech University.

BENNY R. SMITH BSME'65, Leola, May 12. Most of his career was spent with International Paper Co.

STEPHEN G. WARD BSME'58, Stamps, May 6. A U.S. Navy veteran, he worked for Georgia Pacific Paper Co. and then Nekoosa Paper Co. until his retirement in 1985 as a senior engineer.

MIKE HARDGRAVE BSE'67 BSEE'68, Pawley's Island, SC, April 28. He had an accomplished career in electrical and aerospace engineering until he retired in 2007.

JOE A. CAPLE BSME'56, Bryant, April 22. He was a U.S. Air Force veteran and worked for Boeing International in Athens, Greece.

MARTIN MICHAEL MAYES BSME'66, Searcy, April 14. He worked as a design engineer for McDonnell Douglas Aircraft Company in St. Louis, where he was involved in the F4Phantom program. He then worked for Remington Rand in Searcy as a design engineer before transferring to Sperry Vickers in 1975, working in the manufacturing phase of hydraulic valves until his retirement in 2008.

HOMER J. HANNA BSME'49, Roseland Park, KS, April 9. A U.S. Army Air Corps veteran, he worked for Burns Engineering Co. for 37 years.

RALPH B. BARNES JR. BSCE'70 MSCE'71, Arlington, TX, April 5. He was a civil engineer who focused in the geotechnical part of civil engineering and establishing HBC engineering.

THOMAS T. SOUTER BSME'51, Tulsa, OK, April 2. A U.S. Navy veteran, he retired from Kansas City Southern Railroad after 37 years.

VINCENT O. SELBY BSME'53, Fayetteville, April 2. He was a veteran of World War II and the Korean War and retired as Lieutenant Colonel

from the Arkansas Army National Guard with 26 years total service to his country. He retired from the Arkansas Highway & Transportation Department where he served for more than 30 years as district engineer in Fayetteville and Harrison.

HERMAN THOMAS THURMAN BSEE'49, Benton, March 15. He served in World War II in the U.S. Army Air Corp. He was employed at Reynolds Metals Co. for 30 years.

ALAN HUMPHREY MILLER BSIE'85, Little Rock, March 15. He worked in the telecommunications industry while working for Network Design Engineers, ALLTEL, Windstream and most recently Century Link.

GEORGE E. ELLEFSON BSEE'54, Little Rock, March 2. He served in the Naval Air Corps during World War II. He owned and operated an electrical engineering consulting firm since 1961.

BILLY G. WOOD BSME'62, Collinston, La., Feb. 26. He retired from the University of Louisiana at Monroe Physical Plant in 2000.

GEORGE ANDREWS BSEE'51, Tulsa, Okla., Feb. 23. He served in the Navy during and after World War II. He was a registered professional engineer and worked for Nelson Electric, Sun Oil and Williams Companies.

LAURENCE H. LAMBERT BSCE'51, Rolla, Mo., Feb. 23. He was a veteran of the U.S. Marine Corps, serving during World War II. He retired from the U.S. Geological Survey in Rolla in 1990.

JOHN W. KENNEY BSCE'49, Orion, Ill., Feb. 10. He served in the U.S. Army during World War II, retiring from the U.S. Army Reserves in 1984. He worked at the Rock Island Arsenal and later the Picatinny Arsenal, N.J.

DAVID R. ROUW BSEE'79, Kirkwood, MO, Feb. 10. He was a senior electrical engineer in St. Louis.

JOHN L. MILLER BSME'57, Tulsa, Okla., February 7. He went into the Army and served in Germany as a lieutenant. He worked with Abe Silverstein in the development of the liquid fuel mixture. In April 2012 he was inducted into the Arkansas Academy of Mechanical Engineering.

KERMIT Q. STEPHENSON BSAGE'50 MSAGE'56 BSEE'59, State College, PA, Feb. 2. He served in the U.S. Army Air Force during World War II. He was a retired professor of agricultural engineering at Pennsylvania State University.

CHARLES H. MOSES JR. BSCE'71, Crossett, Jan. 24. He was a chemical engineer, working in the paper industry.

BILLY LEE FRANKS BSEE'64, Prairie Grove, Jan. 20. He served in the U.S. Air Force. He works as a civilian contractor at Tinker Air Force Base, Okla.

JIMMY IRBY BRANNAN BSCE'59, Fayetteville, Jan. 18. He spent four years in the U.S. Air Force. He retired after 22 years of service from McGoodwin, William and Yates engineering firm in 1977 and then spent the next 10 years consulting for the firm.

K. LARRY PATTON BSCE'64, Montgomery, TX, Jan. 13. Various jobs in the oil industry took him throughout the United States, including building a pipeline in Alaska, working with Cities Services in Tulsa and Houston, and trading oil in New York City and then returning to Houston with Arco.

RICHARD V. HALL BSCE'40, Texarkana, Jan. 12. He was the owner of Hall Surveying and Engineering.

MOSE A. STRINGFELLOW BSEE'51, Fayetteville, Jan. 11. He served as a radio mechanic for the 158th Army Airways Communication System in World War II. He worked for many years developing and installing GE radar systems.

JOE M. AUSTIN BSAGE'74 BSCE'75, Longview, Texas, Dec. 29, 2013. He was a registered Texas Professional Engineer.

ROBERT B. PORTER BSEE'61, Panama City Beach, FL, Dec. 29, 2013. He was a U.S. Naval Reserve veteran and employed as an electrical engineer at the Navy facility in Panama City Beach. In 1980, he retired from civil service and the Naval Reserve with the rank of commander.

CHARLES A. BRITAIN BSIE'63, Midwest City, OK, Dec. 21, 2013. He retired after 30 years of service as an engineer at Tinker Air Force Base. William J. Matthews BSEE'61, Euless, Texas, Oct. 29, 2013. He was an electrical engineer and worked at Vought Aircraft for more than 30

years and most recently at Nelson Architecture/Electrical as a consultant.

MARION F. SANDERS BSEE'39, Kihei, HI, Sept. 22, 2013. A U.S. Navy veteran, he worked with the Army Corps of Engineers in Dallas before transferring to Colorado Springs to work for civil service.

TED M. IVY BSCE'51, San Antonio, June 24, 2013. He served in the U.S. Air Force during the Korean Conflict and the Vietnam Era, and retired in 1978 after 28 years. After retirement he worked for the Environmental Protection Agency.

ELBERT G. PARRISH BSEE'51, Crossett, May 16, 2013. A U.S. Army veteran, he worked for Georgia Pacific in the Crossett plant for more than 40 years.

JAMES OLLIE KING BSME'49, Versailles, Ky., July 18, 2012. He was a navigator in the U.S. Army. He retired from Texas Gas Transmission Corp.

JOHN E. JEHLIN BSEE'82, Russellville, Sept. 6, 2010. He was an engineering supervisor at Arkansas Nuclear one in Russellville.

JIM B. SPEARS BSIE'58 LLB'64, Little Rock, Sept. 7, 2008. He taught law for more than 30 years at the University of Arkansas at Little Rock.

CLASS NOTES

RIE LEE ISHIDA BSCE'99, Los Angeles, Calif., has been named to Engineering News Record's Top 20 Under 40 list, which recognizes outstanding contributions of AEC professionals under the age of 40.

BENJAMIN HOUSTON DYE BSIE'01 and Tara Dye announce the birth of their son, Flint Houston, born on Sept. 21, 2013, Springdale. Benjamin was recently awarded the "Pushing the Envelope Award" in 2013 by his employer, Harrison Energy Partners. He also was promoted to direct sales team leader at the Harrison Energy Partners.

Gabriela Melendez and **JAVIER ENRIQUE MELENDEZ** BSIE'04, Tomball, Texas, announce the birth of their son, Tiago Enrique, on Oct. 8, 2013.

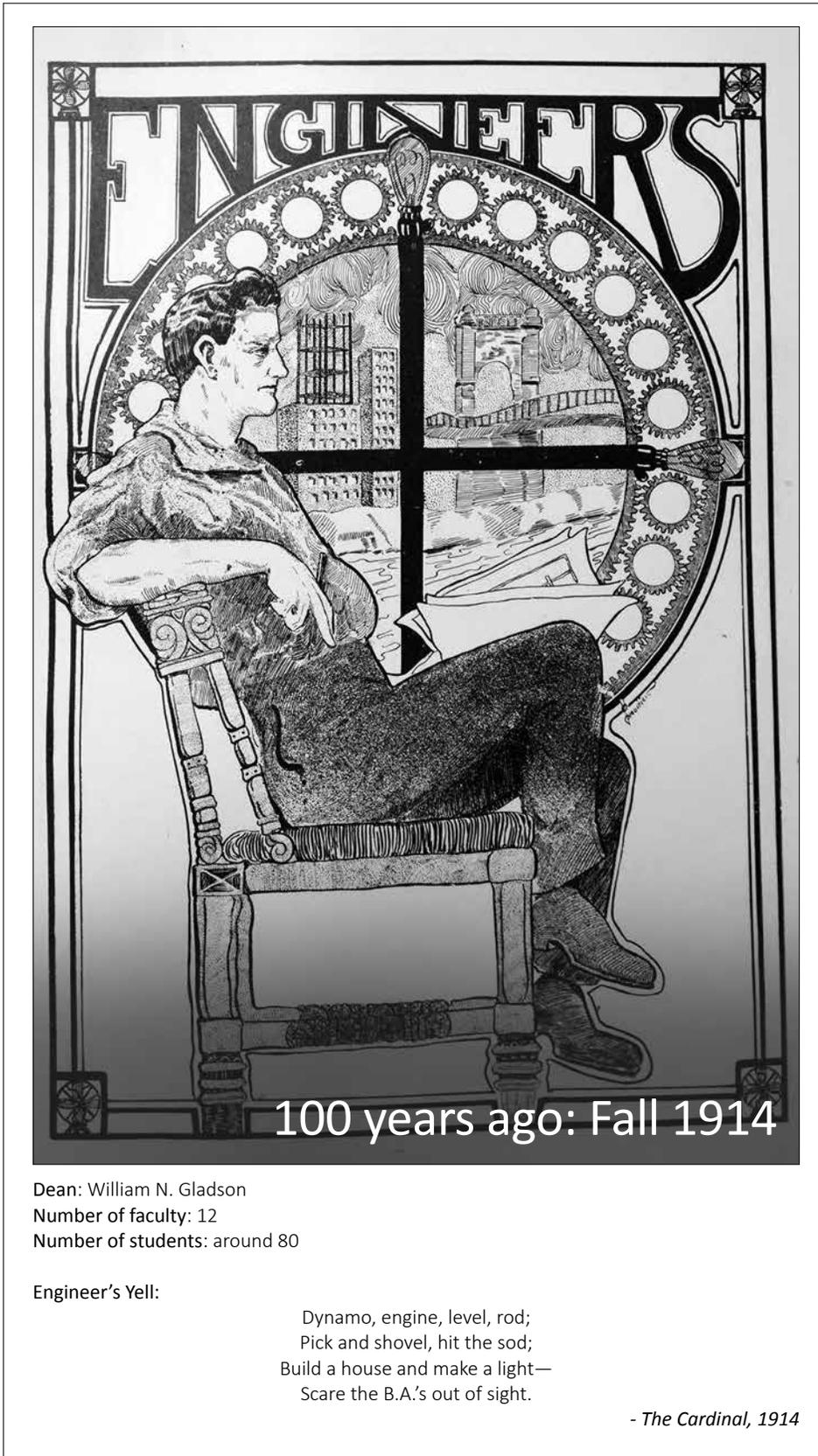
BOB G. ENNIS BSEE'87 MSEE'88, Sugar Land, TX, was named global process automation leader for the epoxy business of the Dow Chemical Company managing their global process automation and optimization resources and strategic initiatives.



In Memoriam

Ron Morris

Rhonald (Ron) Morris, BSIE 1958, of Dallas, TX, passed away on August 28, 2014. He is survived by Betty Morris, his wife of 55 years, their two sons, Ron D. and Robert J. (Jeff), two daughters-in-law, Debbie and Cathy, six grandchildren: Megan, Kyle, Gavin, James, Matt, and Caroline, and one great-grandchild, Dillon. Ron was born to Jack and Jessie Morris on Nov. 7, 1935 near DeQueen. Ron graduated from DeQueen High School in 1953 and completed his BSIE degree requirements at the University of Arkansas in the summer of 1957, while working his way through college. Ron met Betty Douglas, a native of Mountain Home, while both were attending the U of A and they were married June 21. Ron started his career with General Electric in New York. In 1962 they moved to Dallas where Ron worked for TI. Ron earned an MBA with Honors from SMU in 1966. In 2005, Ron received a Distinguished Alumni Award and was later inducted into the U of A College of Engineering Hall of Fame in 2012. Ron and Betty endowed the Morris Scholarships, 10 at University of Arkansas, 2 at ASU - Mountain Home and 2 at Cossatot Community College. Hundreds of students were able to attend college and receive their degrees with the help of a Morris Scholarship.



Dean: William N. Gladson
 Number of faculty: 12
 Number of students: around 80

Engineer's Yell:

Dynamo, engine, level, rod;
 Pick and shovel, hit the sod;
 Build a house and make a light—
 Scare the B.A.'s out of sight.

- *The Cardinal*, 1914

DANNY EDWARD LOE BSIE'96, Fort Smith, is the new vice president of enterprise customer solutions for Arkansas Best Corporation. The enterprise customer solutions department was created to increase sales in Arkansas Best's Freight, Logistics and Panther Expedited Services divisions.

WILLIAM R. MCKAMEY BSIE'70, Tulsa, was elected to chair Tulsa Community College. TCC is the third-largest college in Oklahoma and was recently recognized nationally for its Achieve program that allows all Tulsa County students with a "C" average free admission and fees to the college.

DANIEL B. MORGAN BSCE'09 MSCE'13, a structural engineer for Barge Waggoner Sumner & Cannon Inc., has passed the required examination to become a licensed Professional Engineer. Individuals must attain a four-year college degree, at least four years of experience under a professional engineer and successfully pass two intensive competency exams from their state's licensure board.

CHRISTOPHER A. WALTON BSME'10 and Jazmin Hamilton were married on April 5 and reside in Rowlett, TX.

ACADEMY INDUCTEES

Arkansas Academy of Biological and Agricultural Engineering

GLEN D. DAVIS, BSAGE'67, Cedar Falls, Iowa

Arkansas Academy of Chemical Engineers

DEVA HUPAYLO, BSChE'80, The Hague, Netherlands

MARJI MCNEILL, BSChE'91, Wichita, KS

RICK MOORE, BSChE'80, Houston, TX

JAMES PALMER, BSChE'92, MSChE'97, Ruston, LA

JOHN PARKS, BSChE'77, Baton Rouge, LA

LEE RILEY, MSChE'83, Houston, TX

BRENT STRATTON, BSChE'92, Destrehan, LA

ROBIN WEITKAMP, BSChE '93, Batavia, IL

Arkansas Academy of Civil Engineering

KENNETH M. BAILEY BSCE'87 MSCE'89, Tuscaloosa, AL

DAVID L. FOSTER BSCE'89, Fayetteville, AR

STEVEN R. GARRETT BSCE'91, Rogers, AR

DAVID A. GILBERT ARTIUM Bacc., Rollins College'88, BSCE'89, Lowell, AR

STEVEN M. JONES BS-Geology '83, BSCE'88, MSCE'90, Fayetteville, AR

JOHN P. KNOWLES BSCE'89, Topeka, KS

W. CHARLES 'CHUCK' MITCHELL BSCE'91, Tulsa, OK

CHARLES 'CASEY' SHELL BSCE'86, Oklahoma City, OK

GUY A. WASHBURN BSCE'86, Little Rock, AR

Honorary:

MARK ALLEN BOLTE BSCE'90

RONOTA ANN NEWBERRY-WOODBRIDGE BSCE'88, MSCE'89

Arkansas Academy of Computing

JERRY BLACKBURN, Little Rock, AR

CARL FRANK, Traskwood, AR

ERIC HEIL, Industrial Management '90, Fayetteville, AR

CHAP MCGAUGHY

PAULA KING NORWOOD, Longboat Key, FL

GARY SPEAS

ALESE JOHNSTON STROUD, Little Rock, AR

Arkansas Academy of Electrical Engineering

BARBARA DERRYBERRY, BSEE '85, MSEE '87, Krum, TX

ALAN HANNAH, BSEE '76, Little Rock, AR

EUGENE JENKINS, BSEE '86, Edmond, OK

MATT R. LOVELACE, BSEE '92, Austin, TX

BILL LUTHER, BSEE '78, El-Dorado, AR

RANDALL ROBINETTE, BSEE '87,

Maumelle, AR

LANCE T. SHINALL, BSEE '93, Allen, TX

RUDY TIMMERMAN, BSEE '90,

Prairie Grove, AR

Arkansas Academy of Industrial Engineering

BRYAN BILLINGSLEY, BSIE 1997, Springdale, AR

JAY CAPTAIN, BSIE 1992, Beebe, AR

GINA (LUNGARO) CUNNINGHAM, BSIE 1995, Melissa, TX

DEREK GIBSON, BSIE 1999, Springdale, AR

CHARLES KING, BSIE 1988, MSIE 1990,

Overland Park, KS

MICHAEL PALADINO, BSIE 1999, Rogers, AR

RAGHAV SHARMA, MSIE 1993,

Redwood City, CA

KEVIN SHELHAMER, BSIE 1992, Chicago, IL

CHRIS TURNER, BSIE 1997, Dallas, TX

Arkansas Academy of Mechanical Engineering

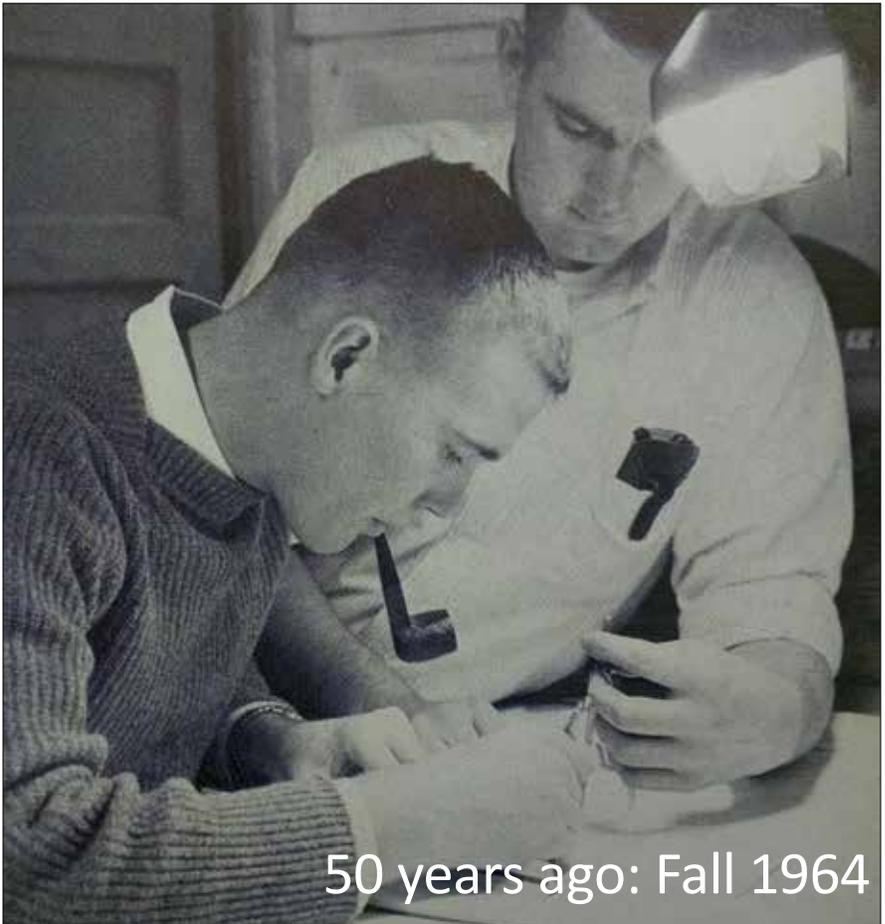
HAMID HABIBI, MSE'91, Little Rock, AR

DARIN NUTTER, Fayetteville, AR

LARRY ROE, Fayetteville, AR

THOMAS G. WEISS, JR., BSME'63, MSME'65,

Murrysville, PA



Dean: George F. Branigan

Number of faculty: 72

Number of students: 1077

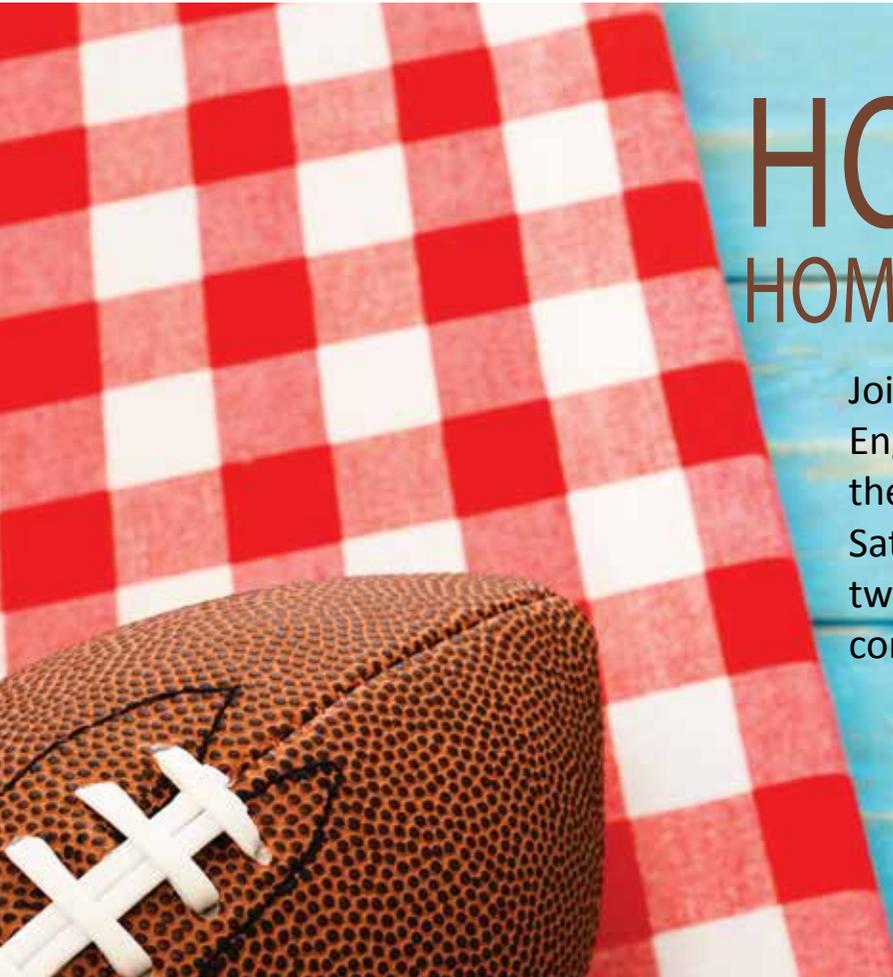
"The average annual salary of all engineers, regardless of education and experience, is \$11,200; the average of all engineers holding the master's degree is \$14,030; while the average for the holder of the doctorate is \$17,450."

- *The Arkansas Engineer*, November 1964.



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Fayetteville, AR 72701

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A red and white checkered blanket is draped over a blue wooden surface. In the bottom left corner, a brown football with white laces is visible.

HOG WILD HOMECOMING TAILGATE

Join Dean English and other College of Engineering alumni, faculty and staff at the Janelle Y. Hembree Alumni House on Saturday, October 25. The tailgate begins two and one-half hours before kickoff and concludes 30 minutes prior to kickoff.

Visit with University of Arkansas alumni and friends and enjoy entertainment, beverages, food and Shake's Frozen Custard.

To register with our engineering alumni group, contact Tory Gaddy at gaddy@uark.edu or phone 479-575-4092.