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ON THE COVER: Calvin C. McKee (B.S. ’48)

engineering.utulsa.edu
The University of Tulsa wrapped up another great Homecoming celebration in October. It was a fun opportunity to connect with alumni and welcome back familiar faces. We’re thankful for all donors, alumni and university friends who support the College of Engineering and Natural Sciences through scholarships, research projects, internships or other areas such as student mentoring. Their time, spirit and generosity empower our students and faculty to reach their highest potential.

Speaking of potential, throughout this issue of the magazine, there are several stories about alumni who are veterans. After serving our country, these brave individuals transition from active duty to a college campus to begin the next chapter. It’s our duty to answer their questions and support them as they navigate the GI bill and return to civilian life. With a generous gift from chemical engineering alumnus Tommy Russell and his wife, Pam, TU is dedicating additional resources to student veteran programs and activities campus wide. We’re proud of all TU veterans, including Cal McKee (cover), Derek Hill and Kurt Mueller featured in this issue.

As we near the holiday season, it’s a good time to reflect on the first half of the academic year and renew our commitment to goals set within the college and the entire university. Our roots in petroleum engineering are stronger than ever. The McDougall School of Petroleum Engineering was named the top petroleum engineering program in the world by CEOWORLD Magazine this summer, but we’re also expanding our presence in energy with research and academic opportunities beyond traditional oil and gas. Many of our faculty specialize in renewable energy resources, and we’re proud of mechanical engineering’s Kirk Smith (BS ’17) who received a Rhodes Scholarship earlier this spring to study solar energy and sustainability at Oxford University.

Enrollment in mechanical engineering, computer science, electrical and computer engineering, biology and biochemistry show steady growth and contribute to the fact that our college makes up approximately 45 percent of TU’s total undergraduate enrollment. The university recorded one of its largest domestic freshman classes in history this fall, but we continue to focus on recruiting and engaging students from around the world.

Before I close, I must mention the progress we’re making in the multi-phase renovation of Keplinger Hall. Laboratories, advising offices and academic wings have been remodeled, and updates on second floor classrooms will begin in summer 2018. Learn more about the man and legacy behind Keplinger Hall on page 12.

All the best, and Go TU!

Sincerely,

James R. Sorem, Jr.
TU has received a major gift that pays tribute to U.S. service members while supporting the talents and abilities of student veterans. Thomas Russell (BS ’57) has established an endowment in honor of fellow TU alumnus, longtime mentor and brother-in-law Calvin C. “Cal” McKee (BS ’48). The contribution by Russell and his wife, Pam, creates three permanent TU staff positions — one each in veteran recruitment, student veteran affairs and veteran career placement.

As a young man, Russell heeded the words of McKee by earning a bachelor’s degree in chemical engineering. He later founded two successful companies in the gas processing industry. Russell has been recognized as a TU Distinguished Alumnus and is a member of TU’s College of Engineering and Natural Sciences Hall of Fame.

“I have continued to follow Calvin’s advice for the past 50 years,” Russell said. “Following his rules made my life much easier, and I’ve passed them on to my kids and many employees with the same results.”

McKee served with distinction as a combat paratrooper and master sergeant in the U.S. Army’s 18th Airborne Corps during World War II and as an Army intelligence officer during the Korean War. He received a degree in petroleum engineering and climbed the engineering ranks in gas plant design. McKee traveled internationally as an employee of Warren Petroleum and Gulf Oil Corp., retiring as president of Warren Petroleum in 1983.

He became an avid supporter of Tulsa nonprofit organizations and served as a TU trustee from 1982 to 1991. McKee is a member of the TU Chemical Engineering Advisory Board and was named a TU Distinguished Alumnus in 2014. He was inducted into TU’s College of Engineering and Natural Sciences Hall of Fame and has been active in the TU Circle Society and President’s Council.

Russell’s philanthropy in honor of McKee officially was announced at a special ceremony in May 2017 as the Calvin C. McKee Endowed Funds for Student Veterans. In recognition of McKee’s service to his country, TU President Gerard Clancy delivered two proclamations on May 5, 2017 from the city and state: one from Tulsa Mayor G.T. Bynum declaring it “Calvin C. McKee Day” in Tulsa and another from Gov. Mary Fallin for “Calvin C. McKee Veterans’ Leadership Day” in Oklahoma. Clancy also announced the renaming of TU’s student veterans’ house to the Cal McKee Student Veterans’ Center.

More than 80 veterans currently attend TU and are active in its growing Student Veterans Association.

Clancy, who served in the U.S. Air Force, is one of only two military veterans currently serving as president at national universities. Clancy’s Air Force job titles have included base psychiatrist, flight surgeon and Ellsworth Base assistant surgeon general. He thanked Russell and McKee for their dedication to their country and their support of the university.

McKee awarded French Legion of Honor medal

Calvin McKee was appointed to the rank of Chevalier (Knight) in the Legion of Honor by the Republic of France at a special ceremony August 19 at the Helmerich Center for American Research. McKee (BS ’48) was recognized for his bravery and contributions to the liberation of France during World War II as a member of the U.S. Army 18th Airborne Corps.

Joining the French National Order of the Legion of Honor is the highest civilian honor granted by the Republic of France and the country’s most prestigious award for two centuries.
Wiley Cox named 2017 Distinguished Alumnus

Wiley Cox (BS ’65) was honored as a 2017 Distinguished Alumnus during TU Homecoming Week, October 12-15. Cox is a Tulsa native who grew up in the shadow of The University of Tulsa. His grandmother lived a block away from campus, and after graduating from Will Rogers High School, he started TU with the help of a scholarship from the Will Rogers Rotary Club.

“That $500 scholarship got me the leg up I needed,” he said. “I knew that I could continue to work for Bordens Cafeterias, live at home and with some scholarships along the way, I might make it to graduation.”

TU and the chemical engineering program quickly proved to be the right choice for Cox. Small classes and opportunities to interact with students were encouraging as he navigated the financial road to a college degree. After his sophomore year, Cox worked as a night shift janitor at the Jersey Production Research Co., now TU’s North Campus facility. At $2 an hour, he couldn’t believe his good fortune. Cox decided to marry his high school sweetheart and fellow TU student, Diane Krumme (BS ’65), who majored in mathematics.

“Semester after semester, I would go to the administration office and ask for any financial help they could find,” he said. “That financial aid kept me in school, and I have never forgotten that. At a larger school, I am not sure that I would have survived.”

After graduation, Cox continued his education with a master’s degree in chemical engineering. His first job was at Celanese Chemicals in Bay City, Texas, where he worked on the plant’s process control computer.

“In 1967, it was just the beginning of data processing, or information technology as it’s known today,” he said. “We developed applications for maintenance, warehouse inventory control and plant unit operations.”

Cox returned to Tulsa in 1977 where he worked for Amerada Hess. In 1983, he went to work for his father-in-law, Harlan Krumme, at Krumme Oil Co. in Bristow, Oklahoma. Ten years later, he and Krumme branched off on their own to establish Falcon Oil Properties. Cox’s son-in-law came aboard after the death of Krumme in 1998, and the company continues its conservative, local style of business.

“There is no doubt I feel I have a debt to TU for the help I received, and I know firsthand what scholarship money can mean for these kids,” he said.

Memories of TU students and faculty made an impression on him as a student, and those relationships have inspired several generous gifts. He and his wife have supported the College of Engineering and Natural Sciences, Gilcrease Museum, the Golden Hurricane Club, the Reynolds Center construction, the Chapman Stadium remodel and the Keplinger Hall renovation. Other TU financial contributions include the Edward and Charlotte Howard Memorial Endowment for Mathematics and the Professor Paul Buthod Scholarship Fund.

“I’m honored to be named a Distinguished Alumnus, and it’s a privilege to represent the class of 1965,” Cox said. “We had some great classmates, and I will always treasure my time at TU.”

Grateful for the educational opportunities he received, Cox has been focused on making college accessible to students who can’t attend for lack of financial resources. He helped establish a college scholarship at the Bristow Rotary Club and later set up a similar program at Falcon Oil Properties. Through the years, the Cox family has helped many first-generation students achieve their dreams of a college degree.
Kirk P. Smith (BS ’17) was awarded a 2017 Rhodes Scholarship – one of only 32 recipients in the nation. Smith, who is TU’s first Rhodes Scholar since 1988, received two years of full financial support to pursue a degree at the University of Oxford in the United Kingdom.

A St. Louis, Missouri, native, Smith was a captain of the Golden Hurricane cross country team, a TU Presidential Scholar, an inaugural member of TU’s Global Scholars program and a National Merit Scholar.

“We are proud of Kirk’s accomplishments thus far and look forward to seeing what the future brings. His research holds great promise for the energy industry and long-term renewable energy efforts,” said Jim Sorem, dean of TU’s College of Engineering and Natural Sciences.

Doug York (left) and Don Green

The TU Engineering Hall of Fame honored alumni Don Green (BS ’55) and Doug York (BS ’83) as its 2017 inductees during a special ceremony in April.

Green is Emeritus Distinguished Professor of Chemical and Petroleum Engineering at The University of Kansas. He earned a bachelor’s degree in petroleum engineering from TU and master’s and doctoral degrees in chemical engineering from the University of Oklahoma. Green has authored or coauthored 65 refereed publications along with the Society of Petroleum Engineers textbook *Enhanced Oil Recovery.*

York, who is a founder and managing director of Sequel Energy Group LLC, has served in many managerial and executive roles during his tenure in the exploration and production sector. He earned a bachelor’s degree in petroleum engineering from TU and previously served on the TU Petroleum Engineering Advisory Board. He currently serves on the board of KLR Energy Acquisition Corp.

The TU McDougall School of Petroleum Engineering is the top program in the world according to 2017 *CEOWORLD* Magazine’s university rankings.

TU’s petroleum engineering program is the largest department on campus with more than 370 students, 14 faculty and seven research consortia supported by the world’s leading oil companies. Students receive an education in the three principal subdisciplines of petroleum engineering: reservoir, production and drilling.
TU introduces biomedical and supercomputing minors

TU is introducing an interdisciplinary minor in biomedical engineering to provide training for opportunities in a rapidly growing field. The minor is a combination of the engineering and medicine curriculums blended through applications in materials science, electronics, software development and health equipment. Students will complete courses in biology, computer science, chemistry, chemical engineering, electrical engineering, mathematics, mechanical engineering and engineering physics.

“The next few decades are likely to see intense efforts and spectacular engineering improvements in this area similar to previous eras that witnessed advancements in steam power, transportation and electronic devices,” said John Henshaw, the Harry H. Rogers Professor of Engineering and mechanical engineering department chair.

A growing number of prospective TU students have expressed an interest in biomedical engineering. The new minor offers students the chance to obtain a credential in the discipline while pursuing their major field of study. The program requires a minimum of 20 hours in selected courses currently taught in the TU College of Engineering and Natural Sciences.

The Tandy School of Computer Science is introducing a supercomputing minor to prepare students for careers in the supercomputing field.

High-performance computing is applied in many disciplines including physics, geophysics, geology, petroleum engineering, mechanical engineering, electrical engineering, computer engineering, mathematics, chemistry, chemical engineering and biology. Supercomputers often are used to solve multidisciplinary topics, and teams of engineers at the professional level prefer members skilled in computer programming, hardware and web domains.

“There is a national shortage of university graduates knowledgeable in the high-performance supercomputing field,” said Associate Professor of Electrical and Computer Engineering Peter Hawrylak. “Supercomputers are used to solve a breadth of problems that work across many disciplines.”

The objective of the minor track is to help students develop a core set of competencies and solve problems that require large processing capabilities beyond those found in mainstream computers. Students must take 15 credit hours in foundational mathematics, foundational programming, high-performance computing core and electives.

Marshall Brewing partnership to offer certificate program

TU is creating a Beer Brewing Certificate in brewing science through a partnership with Tulsa’s Marshall Brewing Co. The new program will begin in spring 2018 and is facilitated by chemistry instructor Keith Symcox. Collaboration with Marshall Brewing also involves internship opportunities for students in the College of Engineering and Natural Sciences. Interns learn the basic operations of brewing science, receive insight into local entrepreneurship opportunities and are challenged to help develop new quality control systems.

Marshall Brewing Co.’s collaboration with TU is supported by its founder and brewmaster Eric Marshall (BSIBL ’04).
Kinzer earns Fulbright to study in Lesotho

Bryan Kinzer (BS ’17) has received a U.S. Student Fulbright Award for his academic achievements, personal qualifications and research proposal. The Fulbright Student Program is the largest U.S. exchange program providing grants for individually designed research projects or for English Teaching Assistant programs.

The Fulbright program facilitates cultural exchange through direct interaction on an individual basis in the classroom, field and home. Kinzer’s research will benefit the off-the-grid villages of Lesotho in southern Africa where all electricity is provided by renewables. He currently lives and works in the area to create an electricity usage database and build a prototype involving a smart meter system. The project is an extension of TU’s Sustainable Engineering for Needy and Emerging Areas organization and studies how electricity demand changes over a given day or season for houses, schools, mills and other buildings.

“Electric utilities can know how many solar panels and how much battery storage is needed to provide power even when the sun is not shining,” Kinzer said.

His research will attempt to determine whether electricity building profiles are consistent across villages and predictable among income levels. Kinzer also will collaborate with the renewable energy research and development firm STG International to build rural micro-grids.

“There are very few renewable driven electric grids in the United States, so having an opportunity to help develop one is ahead of its time,” he said.

Cyber Defense team finishes second at nationals

TU placed second in the National Collegiate Cyber Defense Competition April 13-15 in Texas. This year marks TU’s best finish to date in the event. TU advanced to the national championship in San Antonio after winning the Southwest Regional CCDC in March. More than 230 colleges and universities participated at 10 regional events nationally; eight schools competed at the 2017 southwest regional held at TU.

The NCCDC tests the ability of college students to operate and manage a network infrastructure similar to networks found in the commercial sector. The 2017 competition challenged teams to secure a multi-site retail corporation with 160 employees, point of sale systems and inventory infrastructure.

Team members included graduate student and co-captain Kyle Cook, co-captain Michael Frohlich (BS ’17), graduate student J.T. Hamrick, Michael Kinealy (BS ’17), Jenna Waters (BS ’17), Ashley Etter (BS ’17), Thomas Shaw (BS ’17) and sophomore Shay Taylor. Faculty adviser is Tyler Moore, Tandy Assistant Professor of Cybersecurity.
Sarah and John Graves commit funding to cybersecurity initiatives

John Graves (BS '74), founder of Cyclonic Valve Co., is interested in strengthening national security through advancements in law enforcement and cyber defense technology. He and wife, Sarah, are longtime supporters of projects and endeavors campuswide.

In 2016, the couple made a generous three-year commitment to support several multidisciplinary initiatives that develop cybersecurity professionals, drive innovation and inspire research.

“TU has been at the forefront in both academic and applied computer science initiatives, and it’s an honor to be a part of the exciting things taking place there,” John said.

Their connection to cybersecurity is rooted in John’s background in criminal justice as well as his company’s efforts to develop a proprietary line of control valves, receive patents and commercialize products.

The following initiatives reflect John and Sarah’s personal mission to support research and advancements in cybersecurity.

Cybersecurity Fellowship
The fellowship provides funding for a dedicated master of science computer science student who can perform systems and software support for research, classes and outreach programs for cybersecurity projects.

TU Cyber Defense Center (TU CDC)
The TU CDC improves cybersecurity by addressing the global presence of cybercrime. The center helps counter threats through hands-on initiatives that span teaching, research and service such as the nonprofit anti-malware organization StopBadware. Funding also supports competitive learning at the Collegiate Cyber Defense Capture the Flag competitions.

Multidisciplinary Security Innovation Initiative
The project creates structure and funding to foster and develop innovative ideas regarding the design and commercialization of security-related products and services.

Cybersecurity Research Project Enhancement Fund
The fund allows for the purchase of preliminary data to serve as a foundation for attracting external research support from federal agencies and industrial sponsors.

Cybersecurity Network/Technology Lab Support and Infrastructure Enhancement Fund
The allotment provides funding for a part-time network infrastructure technician to oversee the management of TU’s cybersecurity technology platforms.

Cybersecurity Research Travel Award
The award assists undergraduate and graduate students involved in cybersecurity research.

Cybersecurity Distinguished Lecture Series
The series invites leading experts to campus to discuss current cybersecurity topics.
Derek Hill (BS ’15) is a U.S. Army veteran who recovered from a traumatic brain injury and later attended TU to begin the journey to medical school.

Hill had one year of college experience when he joined the military in 2006. At 19 years old, he was assigned to the 101st Airborne infantry and stationed at Fort Campbell in Tennessee. Earlier than expected, his division received orders to prepare for a tour in Iraq; and in 2007, Hill left for the front lines of war.

While in Iraq, the truck Hill was driving was hit by a roadside bomb, and he sustained a traumatic brain injury. He completed his deployment and returned to the states where he transferred to a unit in Washington, D.C., and received occupational therapy at Walter Reed National Military Medical Center. There, he regained aspects of his speech and relearned how to compartmentalize information.

“I was forgetting my memory instantly,” Hill said. “I had to retrain my brain to hold on to information that I was just given.”

Regaining full mental capacity was difficult, but Hill said it sparked the idea of pursuing medical school. He was curious about the possibilities of college and began taking classes to earn an emergency medical technician license.

“My service and the interaction with a lot of the physicians who worked with me were a big driving force in considering a career in medicine,” he said.

Hill and his wife, Samantha, returned home to Tulsa to be near family at the end of his rehabilitation. He wanted to find a college that would challenge him more than a state institution — a university known for its rigorous academic education and successful medical school applicants.

“I felt like TU was probably the best place to get that experience, and I definitely did,” he said.

Hill majored in biology/pre-med, taking as many courses as possible in areas such as virology, comparative physiology and parasitology. He completed his bachelor’s degree in three years while conducting research with a doctoral student and working full time. Hill experienced culture shock navigating the transition from the military to college. He was older than most of his peers, had lived through combat and was new to the science discipline. Although his adjustment period was challenging, his regimented study strategy and careful alignment of life priorities helped him overcome the obstacles.

Hill didn’t walk alone through his days at TU. In addition to his supportive family, he was mentored by caring faculty and staff who guided him through college.

“They were incredible as far as taking care of a lot of the work that I didn’t know had to be done,” Hill said. “I never had to worry about anything because they were on top of it.”

He advises fellow veterans to take advantage of the GI Bill and TU’s accommodations.

The window to access the GI Bill is limited after service, and there’s no better time than the present to earn a TU degree. utulsa.edu/veterans

“I would tell veterans to save their GI Bill and eligibility for TU,” Hill said. “My entire time at TU was 100 percent covered.”

Currently, Hill is a second-year medical student at Oklahoma State University. His experiences in combat continue to inspire his career goals. He is on track to become a successful physician, but he won’t forget how TU paved the way. Hill returns to campus often to speak at Pre-Med Club meetings and mentor students.
Ali Moshiri retires from Chevron, continues TU partnership

During the past three decades, petroleum engineer Ali Moshiri (BS ’76, MS ’78) has been the catalyst for a productive friendship between The University of Tulsa and his long-time employer, Chevron.

Moshiri was hired by Chevron Corp. in 1978 as a TU student and began his distinguished career as a reservoir engineer. For the past nine years, he has served as president of Chevron Africa and Latin America Exploration and Production Company.

Through the University Partnership Program, Moshiri facilitated Chevron’s contributions to scholarships, student organizations and department grants. Just since 2014, Chevron has invested in the college and gifted $1 million to establish the Chevron Learning Center as part of an ongoing, multiphase renovation project in Keplinger Hall. An additional significant donation was awarded to TU in 2015 for creation of the Chevron Multicultural Center, which supports mentoring and training for students and families from diverse and marginalized backgrounds. More than 120 TU alumni currently are employed at Chevron.

Moshiri retired in April 2017, but his involvement at TU and in oil and gas production is far from over. He plans to serve as an advocate for the industry and TU. Mark Hatfield (BS ’82), Chevron vice president of the Greater Gulf of Mexico Business Unit, will replace Moshiri as the company’s official executive liaison for TU.

Somporn Vongvuthipornchai leads Thailand exploration company

Somporn Vongvuthipornchai (BS ’80, MS ’82, PhD ’85) is CEO and president of the national petroleum exploration and production company PTTEP based in Bangkok, Thailand. He was named to the leadership role in 2015 at a time when the corporation was navigating one of the most critical oil price crises in its 30-year history.

Vongvuthipornchai joined PTTEP in 1991 and was involved in managing PTTEP’s international portfolios from 2006 to 2014.

“We saw our international investments grow from a domestic Thailand and Myanmar-dominated portfolio to a more international one with development and production assets in Australia, Africa and Canada,” Vongvuthipornchai said.

The reservoir and production engineering education he obtained at TU was invaluable to his success. Supportive faculty members including James Brill, Kermit Brown, John Day, Mohan Kelkar, Rajagopal Raghavan and Zelimir Schmidt mentored Vongvuthipornchai through his classes as well as research in the Tulsa University Fluid Flow Project consortium at North Campus.

“Even more important was how TU trained me in systematic thinking and problem solving, which I use every day in tackling operational and business challenges,” he said.

Vongvuthipornchai often networks with TU alumni who also have contributed to the McDougall School of Petroleum Engineering’s respected reputation.

“From high-ranking officials in other countries to corporate executives, I’ve met many alumni who share my love for the university,” he said.
Keplinger Hall namesake was world leader in oil and gas

Thousands of international students and every undergraduate student walk through the doors of Keplinger Hall year after year on the TU campus. Since its completion in 1983, the facility has become known as a landmark of knowledge and innovation in the engineering disciplines. However, many are unfamiliar with the man and legacy of Charles Henry Keplinger (BS ’31) for whom the building is named.

Keplinger majored in physics and graduated magna cum laude at TU. He was nominated for a Rhodes Scholarship and participated in the English Club, Honor Society and Student Council. Keplinger played trumpet in a band to work his way through college. He received a graduate fellowship in physics to George Washington University and studied abroad in Germany.

“I think he always had a plan,” said his daughter Karen Keplinger Mildren. “He loved traveling and made many friends abroad.”

Keplinger completed his master’s degree at George Washington University in 1933 and quickly found success in the oil and gas industry as a member of the engineering corps at Shell Oil Co. He worked as a production engineer and later division engineer. In 1944, he resigned from Shell to establish the partnership Keplinger and Wanenmacher, which became a leader in the industry. Keplinger visited countries such as Saudi Arabia and Japan. He became fluent in German, Spanish and French. Keplinger lobbied in Washington, D.C., and testified multiple times in Congress, opposing price controls and additional taxes on petroleum and gas.

“He was a cheerleader for not only the oil business but also the United States,” Keplinger Mildren said. “His biggest joy was helping people, and he mentored many.”

She remembers her father and mother entertaining international guests at nightly dinner parties. He carried pocket dictionaries of different languages and had his business cards printed in separate languages to accommodate other nationalities.

“He respected them and wanted to honor them by learning their culture,” she said.

Today, many international students attend class and conduct research in Keplinger Hall, which Mildren said is fitting for its namesake.

“If they knew my dad had been to their country, it would make them feel more at home, more connected,” she said. “He was sincere, gracious and full of hospitality.”

One of Keplinger’s final major trips abroad before his death in 1981 was at the invitation of oil and gas leaders in China. He was among the first U.S. oilmen to visit the country in the late 1970s. After his passing, Mildren’s brother, Henry F. Keplinger, (MS ’65) led Keplinger and Associates until it ceased operations.

Mildren said her father was known as “Kep” to friends and family, and she’s happy to hear TU students refer to Keplinger Hall by that same nickname.

“That was the essence of my dad,” she said. “It was purely about how he could help the oil business in the nation and world.”

Keplinger remodel continues

TU is appreciative of the many corporations, organizations and individual donors who have contributed to the Keplinger Hall multiphase renovation. Fundraising continues for an additional $11 million to complete the project.

Renovated features include a new heating, ventilation and air conditioning system along with remodeled classrooms, advising offices, laboratories and academic wings. To learn more, contact Natalie Adams at 918-631-3287.

Laboratories have been updated with new lighting and equipment.
Kurt Mueller made a special trip to Tulsa earlier this year to honor Frank Manning, the A. Paul Buthod Professor of Chemical Engineering, with a gift to the College of Engineering and Natural Sciences. Manning has devoted the past 50 years of his career to engineering education and is well-loved among students and alumni, including Mueller. In 1972, Mueller was a young Vietnam veteran with a wife and baby on the way, and he needed to finish his degree as soon as possible. Manning, who served as department chairman at the time, helped Mueller obtain a scholarship and then a job. Mueller said he’ll never forget Manning’s kindness and easy-going attitude.

“He allowed me to take practical classes I could use like finance and accounting,” he said. “The goal was to get a job as quickly as I could.”

A few years earlier, Mueller had studied architecture at Oklahoma State University before transferring to TU and majoring in chemical engineering. But in 1968, he set aside school and work after watching news reports of one of the largest military campaigns of the Vietnam War, the Tet Offensive.

“Seeing what was going on with our soldiers over there, I thought I’m quitting and going into the service,” Mueller said. “My dad (a Pearl Harbor survivor) teared up when I told him, because he knew exactly what I was facing. You feel invincible at 22 years old.”

As a helicopter pilot with two U.S. Army air cavalry units in Vietnam, his unit’s mission was to seek out the enemy and gather intelligence. He had only been in country 25 days when his best friend was killed in action. He was assigned to escort his friend’s body back to the states — one of the worst experiences Mueller had in the Army. From flight to flight on the journey home, he witnessed the disrespect many showed to the soldier’s remains.

“There was no support whatsoever,” Mueller said. “It was such an unpopular war you had to compartmentalize the experience, put it away and stay focused.”

He returned to Vietnam for a year of service in country and spent four years total on active duty as a commissioned officer. Mueller was determined to pick back up where he had left off at TU, and when he began to apply for jobs he was advised to not disclose his status as a veteran.

“No one knew about it, and no one talked about it,” he said. “We were told whatever you do, don’t tell anyone you were in the war, and especially in combat.”

With Manning’s help, Mueller became a design engineer at C-E Natco in Tulsa. He advanced quickly within the company and left four years later for a position at George Fischer Corp. Mueller’s other career ventures included running a Miller Beer distributorship as well as management positions at Häagen-Dazs Ice Cream, Crystal Springs Bottled Water Co., Skanska USA and Gilbane Building Co.

Now retired, the Georgia resident has reconnected with the men he flew with in Vietnam while joining the Atlanta Vietnam Veterans Business Association and the Vietnam Helicopter Pilots Association. He volunteers with the United Service Organizations (USO) and has served on the Small Business Administration Advisory Committee on Veterans Business Affairs in Washington, D.C., “The involvement in this committee led me to looking at legislative policies that affect the veteran business community,” Mueller said.

Through Hire Heroes USA he supports men and women transitioning from the military to school or searching for a job by assisting with résumés, business plans and mock job interviews. Mueller said his drive to mentor and coach fellow veterans is rooted in the memories he carries as a veteran returning to civilian life.

“It’s entirely different today than when I was in school,” he said. “It’s about giving back to the veteran community any way we can.”

His support for veterans also involves honoring those of his era who missed out on the chance to be recognized for their devotion and discipline. Mueller said student-veterans are valuable to any college campus including TU where new programs have been developed to welcome their unique life experiences.
Natasha (BS ’99) and Matt (BS ’99) Bray are accomplished professionals who built their careers with TU degrees. The couple met while attending the Oklahoma School of Science and Mathematics and married as undergraduates in the TU College of Engineering and Natural Sciences. Matt is a native of Muldrow, Oklahoma, and earned his bachelor’s in mechanical engineering. Natasha, the daughter of a family physician in Enid, has always loved science, math and physics. She merged her interests into a biology/pre-med degree while participating in the Honors Program with Matt.

“I was pushed to read and explore outside the science field,” Natasha said. “TU’s classic liberal arts education offered opportunities for the arts, reading, history and interaction with people beyond my scope of study.”

Natasha graduated from the Oklahoma State University College of Osteopathic Medicine in 2003 and completed an internship in Philadelphia. She served as the chief intern physician at the Philadelphia College of Osteopathic Medicine. Matt worked in telecommunications at Williams but decided to transition into a new career. He attended Harvard Law School while Natasha joined the Cambridge Health Alliance and completed a residency in internal medicine, performing critical care rotations at Massachusetts General Hospital.

“Our patients were from different neighborhoods and ethnic groups,” she said. “It was a good place to train and learn.”

In 2006, the Brays moved to south Florida where Matt began practicing law with the international firm Hogan Lovells. Natasha accepted a teaching position at Nova Southeastern University and worked as a hospitalist, seeing patients every three to four weeks in the Broward Health System. Natasha was named director of medical education at Broward Health and worked to expand the system’s 16 residency programs, which included orthopedic surgery, pediatrics and cardiology. She also earned a master of science in medical education while at Nova. The work was a fun and challenging assignment, but she and Matt wanted to return to their home state.

In 2014, Natasha was asked to help launch an osteopathic program for the Arkansas College of Osteopathic Medicine. As associate dean, she assisted in structuring the program’s curriculum, developing clinical rotations and consulting on accreditation and building design. Her office in western Arkansas allowed Natasha, Matt and their two sons to relocate to Sequoyah County, Oklahoma.

“We worked really hard to get our boys into an environment centered on health and family,” Natasha said. “We want them to experience nature, our values and a service mentality.”

In late 2016, Natasha lived up to her community mission by returning to the OSU College of Osteopathic Medicine as a clinical associate professor in rural health based in Tahlequah. She also practices osteopathic internal medicine at a clinic in Muldrow while making sure OSU’s curriculum translates from its main campus in Tulsa to outlying, rural areas.

“I focus on training physicians for rural environments and to work within the tribal healthcare systems across the state,” Natasha said. “Medical education presents an opportunity to support patient care while ensuring we are developing critically needed healthcare professionals to address the health disparities within the state.”

Matt also has adapted his legal career at a large firm to small town life by opening his own practice in Muldrow. Matt and Natasha share a deep commitment to service within the community.
Corporate engagement benefits TU, industry

Joe Reeble (MEM ’86) is a long-time member of the TU Mechanical Engineering Industry Advisory Board and a dedicated supporter of TU students and alumni. As chief executive officer of GasTech Engineering in Sapulpa, he welcomes cooperation with his alma mater any way and as often as he can.

“I’m passionate about our relationship with TU from top to bottom of this organization,” he said. “Supporting TU is an easy thing to do, because much of our story is embodied in TU’s story.”

Through the years, Reeble has taught as an instructor in the Department of Mechanical Engineering. He has witnessed the program’s transition from a purely scholastic setting to a more industrial and practical environment. This approach facilitates a smoother jump from college to industry for the students and their employers. Students finish the program with knowledge and experience to properly present a design review, understand the multiple stages of product development and defend the concept in front of executives, clients and peers.

“It pays forward to a company like mine that hires these individuals,” Reeble said. “Students have to know what to expect when they arrive on the job.”

Nine TU alumni with backgrounds in mechanical, chemical, finance and computer science currently work at GasTech, an oil and gas engineering, design, manufacturing and service company. Much of GasTech’s history was shaped by TU mentors, instructors and experiences that influenced its employees.

“TU grads are stellar. Well-trained and versatile, they tend to move more rapidly into management and the higher technical ranks,” Reeble said. “That’s why I keep hiring them.”

McQueen gives back as petroleum engineering mentor

In the final days of the spring 2017 semester, petroleum engineering seniors stood in front of their peers and advisers to present the findings of their semester-long research projects. For one team, mentor Ken McQueen (BS ’82) flew to Tulsa to watch the students’ presentation on data he provided from a set of southeastern New Mexico wells drilled before World War II. A member of the McDougall School of Petroleum Engineering’s Industry Advisory Board, McQueen continues to invest in his alma mater and the future of young petroleum engineering graduates.

“The economic evaluation of this project is exactly what petroleum engineers do in their daily work,” he said.

The seniors digitized 250,000 feet of logs for their analysis and met weekly with McQueen via Skype to discuss progress and strategies. They asked questions, solved problems and determined the remaining potential of the New Mexico water injection sites. Students also learned how to use the industry’s commercial software and directly apply skills required in the real world.

“Southeastern New Mexico’s Delaware Basin has become the hot spot for today’s oil and gas industry, and I expect to see many TU grads working in this area,” McQueen said.

McQueen retired as vice president of WPX Energy in 2016 and was appointed cabinet secretary of the New Mexico Energy, Minerals and Natural Resources Department. His office oversees five divisions and 415 employees of New Mexico state government.

Throughout his career, McQueen has relied on his involvement at TU to effectively recruit skilled professionals. He also served as an adjunct petroleum engineering professor at TU from 2002 to 2013.
Fifty years of TUDRP

Many professionals in today’s drilling engineering industry can trace their careers back to a historic research facility in Tulsa, Oklahoma. One of the oldest drilling consortia in the world, The University of Tulsa Drilling Research Project, TUDRP, is celebrating 50 years and is poised to continue its tradition for another five decades.

TUDRP is the vision of legendary TU Professor Kermit Brown who initially established the consortium. A nonprofit cooperative between industry partners and university associates, TUDRP conducts basic and applied research to advance drilling technology. Students gain experience in the industry while partners benefit from the research developed. Professor B.J. Livesay was the group’s first director and welcomed a small group of industry partners. Livesay left the program in 1972, and John Day served as interim director until J.J. Azar accepted the permanent role. Azar arrived at TU in 1965 as an assistant professor in aerospace engineering. As director, he reached out to major oil corporations, independents, contractors and suppliers.

“We were the only existing cooperative research program in petroleum engineering that specialized in drilling while also promoting academics,” Azar said.

TUDRP grew to more than a dozen members with worldwide recognition, and by the late 1980s, more than 25 companies were involved.

Azar led TUDRP for 22 years while teaching drilling courses to hundreds of students and helping them publish technical papers as a direct result of the research at TUDRP.

Professor Stefan Miska, who initially taught at New Mexico Tech, joined TU in 1992 and succeeded Azar as TUDRP director in 1996. Miska continued to focus on Azar’s priorities while also expanding the research. The development of a flow loop system by Azar provided a location for new experiments, and Miska was eager to implement additional applications.

“I wanted to do more for the drilling industry,” he said. “I wanted to develop something that would be unique and useful.”

TUDRP began looking at all aspects of drilling mechanics and introduced new tools such as the Rock Mechanics Facility to better understand factors affecting the drilling rate and ultimately drilling costs. Current TUDRP resources include a Low Pressure Flow Loop, Advanced Cuttings Transport Facility, Drill Pipe/Coiled Tubing Buckling Facility, Full Scale Testing Rig, Drill Pipe Fatigue Testing Facility, Fluids Characterization Lab, Small and Large Indoor Flow Loops, Shale-Fluid Interaction Test Cell, Tri-axial Rock Mechanics Testing Facility and others. The consortium team includes eight TU faculty members as well as research technicians, several consultants and research assistants. To date, 170 projects have been completed, and 14 are in progress.

“We can call on mechanical engineering, electrical engineering or other departments from TU’s College of Engineering when we need help,” Miska said. “We’re not just by ourselves, and we have full support around the campus.”

TUDRP membership currently includes 15 oil and service companies from the United States and abroad. Members visit TU’s North Campus biannually for advisory board meetings. Updates on current projects are presented, and members provide valuable feedback and suggestions.

“We listen to our members, and we act accordingly,” Miska said. “We’re focused on optimization and automation. We are aiming for the future of the drilling industry.”

As of July 1, 2017, Evren Ozbayoglu is the new director of TUDRP. Miska retired from the directorship but will continue teaching. Ozbayoglu received his doctorate from TU in 2002. After teaching in Turkey for a few years, he returned to TUDRP in 2009.

“We focus on developing projects that are applicable in the field to answer questions in industry,” Ozbayoglu said. “That’s what made our past successful. That’s what will direct our future.” See a longer version of this article in the October issue of the Journal of Petroleum Technology. www.spe.org/jpt.
The TU Student Experience for Heavy Vehicle Cyber Assurance, also known as the Cyber Truck Research Experience, provides students an opportunity to develop skills that address potential cybersecurity issues in the heavy vehicle industry.

The program was established by TU in 2016 after the National Motor Freight Traffic Association, Geotab Telematics and PeopleNet Telematics identified potential security issues of information systems running on the trucks of today’s highways. TU was recruited to help fill the talent pipeline needed to solve cybersecurity problems of the future. Engineering students participate in project-based learning activities related to vehicle networking and learn how truck data elements and acquisition are used in fleet management systems.

“We recruit students who are passionate about transportation to learn cybersecurity,” said Jeremy Daily, program director and associate professor of mechanical engineering. “We now have mechanical engineering students getting minors in cybersecurity with the idea they can directly plug into the transportation industry.”

The students acquire skills they normally would not obtain in a classroom setting while experiencing multi-disciplinary learning.

“Students who finish this program are well-positioned to be competitive in the job industry for this type of research,” Daily said.
The anti-malware organization StopBadware was created in 2006 at Harvard University and moved its operations to TU in 2015. Originally established to identify malicious software online, StopBadware quickly became a service for website managers desperate to remove malware from their sites. Tandy Endowed Assistant Professor of Cybersecurity and Information Assurance Tyler Moore (BS ’04) is the organization’s director.

When a website is attacked by users with harmful intent, the hackers attach extra code to the site and attempt to automatically download software to the computer without consent. Moore said websites with a vulnerability or weakness are the typical targets.

“At any given time, there are literally tens of thousands of these sites out there, and they get compromised all of the time,” he said.

Google and other web services check for malware as part of their monitoring process when crawling the Internet. If malware is detected, the site is placed on a blacklist that protects users by displaying a red screen warning the site has been attacked. The warnings provided by Google Chrome and Firefox link to services that explain the warning and how to resolve the problem. One of the sites listed is TU’s StopBadware.

Google, ThreatTrack Security and NSFOCUS provide StopBadware with real-time feeds of all sites currently blacklisted. Moore and a group of TU undergraduate and graduate students post the information to StopBadware’s site.

Large companies with an internal web security staff have the resources to investigate and fix an issue themselves, or they can hire private firms to remove the malware. However, for smaller organizations that don’t have the luxury of handling a problem themselves, webmasters can contact StopBadware or Google directly for assistance.

“A webmaster can submit a request for a review, and we’ll give them resources and suggest common things to check to determine if they’ve been compromised,” Moore said.

Two undergraduate TU computer science students, Steven Diaz and Chloe Lu, are trained malware masters. They answer incoming requests by viewing the questionable sites using a special virtual machine environment that is self-contained to prevent the malware from spreading. The students monitor the network traffic, collect data, take notes and send their findings back to the website’s operator. StopBadware initiates a rescan back to Google to remove the site from the blacklist.

StopBadware is active in external collaborations with other researchers around the country to reinforce its service mission and help those who can’t afford to pay an expert to fix their malware problem.

“It allows us to keep our ear to the ground about what’s happening and provides us with a good source of data on cyber-criminal activity that helps us develop new capabilities to assist webmasters and further our research,” Moore said.

In addition to Moore’s efforts at StopBadware, he is the recipient of a 2017 National Science Foundation Faculty Early CAREER Award. The five-year NSF grant is one of the most prestigious awards distributed in support of early-career faculty who are role models in research and education.

Other grants Moore and his team have received include a $220,000 data sharing grant from the U.S. Department of Homeland Security Science and Technology Directorate to study the incentives for researchers to produce and share cybersecurity datasets. He also is involved in a three-year National Science Foundation grant that investigates the effects of security shocks on cryptocurrency platforms such as Bitcoin. Moore received a Marshall Scholarship while at TU and earned his doctorate in computer science from the University of Cambridge in 2008.
Bioinformatics
Toolsmith Lab awarded OCAST funding

A TU professor and his Bioinformatics Toolsmith Research Laboratory of undergraduate researchers have earned a second place funding award from the Oklahoma Center for the Advancement of Science & Technology (OCAST). Assistant Professor of Computer Science Hani Girgis received recognition in the competitive plant science category.

The two-year grant supports TU’s bioinformatics objective to develop intelligent tools that analyze plant genomes, or DNA sequences in a species.

“Studying plant genomes is important because of Oklahoma’s dependency on agriculture,” he said. “Our analyses can enhance crop productivity.”

Girgis established the Bioinformatics Toolsmith Lab in the Tandy School of Computer Science as a new TU faculty member in 2014. He mentors a group of students involved in the newly funded OCAST project along with several other large-scale initiatives that involve artificial intelligence, machine learning, advanced algorithms and data structures.

“Our goal is to build intelligent, efficient tools to help biologists mine enormous amounts of DNA, RNA and proteins,” Girgis said.

The Bioinformatics Toolsmith Lab includes undergraduate students who have varied experience in computer science coursework. Girgis said the skills and knowledge students obtain are helpful in publishing their research.

“I see potential for all of these students not only to become good engineers but also to become good scientists and publish in well-respected, high-impact journals that thousands of scientists will find useful,” he said.

MADE at TU projects

TU students from the College of Engineering and Natural Sciences are active participants in the Make A Difference Engineering (MADE at TU) program, addressing the special needs of local residents with physical and developmental disabilities. Pictured below are two examples of recent projects designed and built by TU students or Tulsa Undergraduate Research Challenge junior participants. Learn more and see videos about the projects at engineering.utulsa.edu.

Mechanical engineering students Emily Tran, Alyssa Hernandez and Kayla Eiland (Jenks High School, not pictured) created a custom melodica that operates off a foot pump for children at Little Light House.

Senior mechanical engineering students built a bench press machine for clients at the Center for Individuals with Physical Challenges.
For the past four years, the College of Engineering and Natural Sciences has participated in solar research with support from the Advanced Research Projects Agency-Energy.

Associate Professor of Mechanical Engineering Todd Otanicar initially received funding in 2014 to design a hybrid solar collector that could produce high temperature thermal energy and electricity simultaneously. Otanicar and Parameswar Hari, associate professor of physics, and Kenneth Roberts, associate professor of chemistry and biochemistry, led a team of graduate researchers, undergraduate students and postdoctoral scholars to perform the task with a nanoparticle-based fluid to absorb solar energy not utilized by photovoltaic cells.

“The goal was a collector that could produce energy at costs similar to photovoltaic energy but also have easily storable thermal energy,” Otanicar said.

The group partnered with the research and development firm nanoComposix and the solar energy equipment supplier Cogenra. The project concluded in February and developed technology related to the collector and nanoparticle stability at high temperature. To date, six journal articles have been generated from the research along with an e-book and one pending patent application.

Otanicar received a follow-up award from ARPA-E worth $922,000 in November 2016 to continue working on the hybrid system. Funding runs until May 2018 and supports three graduate students and one research scientist.

The ARPA-E research Otanicar and his colleagues have conducted involves the help of a solar panel setup at TU’s North Campus research facility. TU is the only university in Oklahoma to receive an ARPA-E award.

The TU Oklahoma Photovoltaic Institute has received $750,000 of funding for a three-year project sponsored by the NASA-Experimental Program to Stimulate Competitive Research (EPSCoR). Associate Professor of Physics Parameswar Hari is partnering with the University of Oklahoma’s Ian Sellers, associate professor in the Department of Physics and Astronomy; Oklahoma State University’s Nick Materer, professor of chemistry; and Khalid Hossain, a scientist from Amethyst Research Inc., to design and test the next generation of high-efficiency solar cells.

Other TU members including Hari, Todd Otanicar, associate professor of mechanical engineering, Peter Hawrylak, associate professor of electrical engineering, and Gabriel LeBlanc, Wellspring Assistant Professor of Chemistry and Biochemistry, established the Oklahoma PV Institute in 2015 to design, model and fabricate a new generation of cost-effective photovoltaic cells. The organization fosters interdisciplinary research between faculty and students in several engineering disciplines at TU as well as OSU and OU.

The following papers are a few of the many research articles published by faculty each semester.

“Evidence for complex life cycle constraints on salamander body form diversification” in *Proceedings of the National Academy of Sciences*, Associate Professor of Biology Ron Bonett and Andrea Blair (BS ’13).

“First Report of Maize dwarf mosaic virus in Johnsongrass in Oklahoma” in *Plant Disease* journal, Associate Professor of Biology Akhtar Ali and D. Wijayasekara.

“Rapid detection of fifteen known soybean viruses by dot-immunobinding assay” in *Journal of Virological Methods* by Associate Professor of Biology Akhtar Ali.

New lab to train next generation of power engineers

The Department of Electrical and Computer Engineering has received a generous donation from longtime university friends Andy and Helen MacKay to install a new Power Lab in Rayzor Hall. Students and faculty have debuted the modernized electric power laboratory to boost TU’s nationwide visibility as a leader in electrical engineering.

Electricity flows through the system’s three-phase AC and DC electric motors, alternators and generators, demonstrating the intrinsic properties of each device before the numbers automatically are recorded and made available for analysis in a Microsoft Excel file.

“What used to take 20 hours now takes 20 minutes,” said Kyle Mann (BS ’17). “We can spend time understanding, analyzing and learning rather than writing everything down by hand.”

The new Power Lab eliminates tedious tasks of recording data while introducing students to what it takes to drive each kind of device by making manual connections for parameters such as field excitation current.

The dated equipment previously used to measure torque resembled a kitchen scale, but the new Power Lab is sleek, digital, accurate and powerful. Faculty in the Department of Electrical and Computer Engineering have developed a Power Lab course and two additional lab opportunities based on this equipment and software.

“It’s a remarkable step up for us, and I’m very proud of the students’ efforts,” said Douglas Jussaume, applied associate professor of electrical and computer engineering.

MacKay is cofounder and president of MACCOR, Inc., and Unicorp Systems, Inc., Tulsa-based companies specializing in sophisticated battery test systems and aircraft equipment repair. He also serves as a TU trustee.

TURC project studies girls in STEM

Electrical engineering students Anna Findley and Jennifer Fox participated in a Tulsa Undergraduate Research Challenge (TURC) project that explored why few middle school girls choose to study STEM (science, technology, engineering and mathematics) fields. Their research was based on activities held during Tech Trek Tulsa 2017, an annual week-long STEM camp for eighth-grade girls at TU.

The research showed that hands-on activities and positive female role models can break through the stereotypes of engineering and encourage girls to remain interested or discover new opportunities in STEM. Watch a video and learn more at engineering.utulsa.edu/news/girls-stem-turc/.

Local eighth-grade girls attend Tech Trek 2017 at TU.
Longtime mentor sees value in TU interns

When Dan Houston retired from Ford Motor Co. in 2016, he celebrated his 37-year career with a party in Detroit attended by many TU alumni and friends from states as far away as New Mexico, Texas and California. The polymer composite tech expert didn’t graduate from TU, but he has a longtime connection with the university and has influenced the lives of many mechanical engineering students.

“That's what I'm most proud of — preparing the next generation of young people who have done well in their lives,” Houston said.

He mentored TU students at Ford for 25 years and currently is a materials and processing engineer for the Institute for Advanced Composites Manufacturing Innovation, a startup facility managed by Michigan State University. Early in their careers, Houston and TU's John Henshaw, the Harry H. Rogers Professor of Engineering, partnered to develop a Ford internship program for TU students. Many have participated and benefited from the summer experience.

“An internship is the longest job interview they’ll ever have. In that period of time, you really get to know someone, and who they are becomes apparent.”

In addition to the advantages internships provide students and employers, TU also reaps the rewards as a respected university of motivated students.

“If you build up a person to help them succeed, that’s a good feeling,” Houston said.

TU reaffirms partnership with China University of Petroleum

TU representatives traveled to China in May 2017 to visit the China University of Petroleum-Beijing for reaffirmation of an agreement that promotes joint education and research between the two universities.

TU President Gerard Clancy, Yale National Initiative (YNI) Director Elizabeth Smith, College of Engineering and Natural Sciences Dean Jim Sorem and Professor of Petroleum Engineering Holden Zhang met with leadership from CUPB to establish a partnership with the institution’s main site in Beijing and the Karamay satellite campus in western China’s Gobi Desert.

TU reaffirmed its mutual commitment for a 2+2 degree program for students to attend CUPB for two years before completing their degrees at TU. The exchange program allows students to earn two degrees from two top petroleum engineering programs in four years.

Britt signs MOU with petroleum engineering

Larry K. Britt has donated laboratory equipment to the TU McDougall School of Petroleum Engineering that will advance student research opportunities. Britt signed a memorandum of understanding with petroleum engineering faculty members in 2017 to affirm the partnership.

Britt has been a longtime supporter and collaborator with TU’s petroleum engineering program and hopes to expand his mentorship and technical support.

Britt is a consultant at NSI Fracturing LLC in Tulsa and previously served as the fracturing team leader at Amoco’s Technology Center. He specializes in rock mechanics related to hydraulic fracturing of shales and unconventional resources.
Alternative energy students visit France

The TU alternative energy engineering class offers insight into how nations around the globe are embracing cleaner, more sustainable forms of energy. The course is led by Professor of Chemical Engineering Daniel Crunkleton and examines resources in solar power, biofuels and biomass.

“Students are demanding more courses in alternative energy, and we’re trying to respond to that need,” he said.

During the 2017 spring break, the class traveled abroad to the southern region of France to learn about Font-Romeu-Odeillo-Via, one of the largest solar concentrators in the world.

Crunkleton said development of the alternative energy engineering course continues. He plans to partner with TU’s departments of mechanical engineering and electrical engineering to offer the same international experience to all students in the College of Engineering and Natural Sciences.

New faculty

The College of Engineering and Natural Sciences welcomed the following new faculty in 2017:

- Steven Roche, associate professor of geosciences
- Akram Taghavi-Burris, instructor in computer science
- Edward J. Butterworth, visiting assistant professor of physics and engineering physics
- Thomas Rendon, lab instructor in mechanical engineering
- Hongyang Zhu, visiting assistant professor of physics and engineering physics

Bender attends Fulbright Summer Institute

TU student Conner Bender attended the Fulbright Summer Institute and studied abroad in the United Kingdom during summer 2017. Bender is a TU Presidential Scholar and junior majoring in computer science and mathematics. As a Fulbright Summer Institute participant, he spent three weeks studying at the University of Strathclyde and the Glasgow School of Art in Glasgow, Scotland.

Alumnus Josh Rodriguez awarded NSF Bridge to Doctorate fellowship

Alumnus Josh Rodriguez (BS, BA ’16) has received research funding through the National Science Foundation Bridge to the Doctorate Program. The initiative is supported by the Louis Stokes Alliances for Minority Participation. Rodriguez currently is a graduate student at the University of Arizona studying optical science and engineering.

The two-year NSF fellowship is designed to help minorities pursue doctoral degrees in the science, technology, engineering and mathematics disciplines and increase workforce diversity. Rodriguez is of Mexican descent and is the first in his late father’s family lineage to attend graduate school. He hopes to be the first in his father’s family to obtain a Ph.D. degree.

Geosciences receives equipment donation

The Department of Geosciences has received an equipment donation from Samson Resources for graduate and undergraduate research. Samson representatives delivered the XL3950 GOLDD+ portable X-ray fluorescence spectrometer in 2017. The device measures the elemental concentrations of solid materials and powders, including all types of rock.
Biochemistry alum earns NSF support

Matthew Tierney (BS ’16) received a graduate research fellowship from the National Science Foundation in 2017 valued at $138,000. The NSF graduate research fellowship program recognizes and supports outstanding graduate students in science, technology, engineering and mathematics who are participating in research-based master’s and doctoral degrees.

Tierney studied biochemistry at TU and currently is pursuing a doctorate in organic chemistry at the University of North Carolina.

Adams honored with teaching award

Mathematics instructor Kimberly Adams has been awarded the Kermit E. Brown Award for Teaching Excellence. The accolade is the highest recognition of teaching excellence granted by the TU College of Engineering and Natural Sciences. Adams serves as a coordinator for the Julia Robinson Math Festival and often facilitates Tulsa Math Teacher Circle activities.

The Tulsa Math Teachers Circle hosted its fourth annual summer immersion workshop in July for 37 middle school teachers. The organization is a professional community of K-12 math teachers and mathematicians. Members meet regularly to work math problems, enrich their math knowledge and experience, and build partnerships.

New course partners with Tulsa Coding Club

The Tandy School of Computer Science is partnering with a new club in Tulsa that encourages elementary students to learn about computer coding. TU’s computer gaming and early education course was created in 2017 to support the development of Coding Club, an after-school computer gaming program established in January 2016 for TPS students.

By the spring 2017 semester, approximately 100 students from six Tulsa Public Schools (Eliot, Emerson, Kendall-Whittier, Lanier, Lee and Mayo) participated in Coding Club. TU students joined the effort by visiting the schools once a week to help the elementary students design and build games that were featured at Heartland Gaming Expo in April on TU’s campus.

The gaming and early education course currently includes eight students who assist Coding Club by visiting seven TPS schools.

Coding Club was created by Daniel Mooney, CEO and founder of the Tulsa-based semantic data company Moomat. Mooney previously served as lead rendering engineer for video game giant Electronic Arts.

Drone competition demonstrates unmanned aircraft innovation

The Department of Electrical and Computer Engineering hosted TU’s first Green Country Unmanned Aircraft System Competition in August.

Fourteen high school and college teams from Oklahoma and Texas competed in a package delivery event requiring drones to fly a package from its source over obstacles to a destination where the package was delivered before returning to the starting line. Teams could build their own drones or program one purchased off the shelf. Total scores were based on safety, round trip travel and teamwork.

“Industry, tech companies and research institutes are investing in unmanned aerial vehicles” said electrical and computer engineering doctoral student Niki Maleki. “Even the governor of Oklahoma has supported UAV initiatives, and this technology will continue to grow.”
Students attend Research Day at the Capitol

Electrical engineering senior Wesley Liao and biochemistry/Spanish senior Camden Schinnerer represented TU at Research Day at the Capitol in spring 2017. They were among 25 of the state’s top undergraduate student researchers from 19 colleges and universities.

Schinnerer is a Tulsa Undergraduate Research Challenge and a Chemistry Summer Undergraduate Research Program participant. His research investigates the use of electrochemistry to model the degradation of neuromelanin in the brain as seen in patients with Parkinson’s Disease.

The goal of Liao’s research is to provide insight on how treatments can be improved for clinicians and patients.

TU receives Harmon Foundation gift

The Tandy School of Computer Science has received a gift from the Harmon Foundation to establish the Open Source Software Development Educational Initiative at TU. The funding supports a two-year project to enrich and transform the department’s curriculum with the implementation of open source software programs.

“Major software groups like Mozilla produce and maintain open source software that consumers use and companies embed in their own software projects,” said John Hale, the Tandy Professor of Bioinformatics and Computational Biology. “It has become a major paradigm in the way large software projects are undertaken, yet most colleges don’t expose students to that way of doing things.”

Students challenged in supercomputing

TU hosted the second annual Oklahoma High-Performance Supercomputing Competition in April. More than 40 students from local high schools, community colleges, technical schools and universities participated in high-performance computing activities.
Cybersecurity C-Suite Forums

Join corporate leaders in conversation about the increasing occurrence of cyberattacks and data breaches. No longer an exclusive problem entrusted only to corporate Information Technology departments, information security now demands the attention of C-suite executives, general counsel and other company advisers.

The CESE series of conversations help answer questions and address concerns while emphasizing what a leader needs to know about key cybersecurity issues and management. The forums look beyond the latest buzzwords and security products and focus on the impact of cybersecurity on organizations, vendors and customers. The talks are practical discussions from various perspectives on what you need to know to make sure your organization is meeting expectations and addressing regulatory requirements. Check the CESE website (cese.utulsa.edu) for forums and seminars upcoming soon.

Online Course: From Rocks to Drill Bits

CESE is offering the online training course “From Rocks to Drill Bits: The Essentials of the Oil Field.” The course includes recorded lectures and videos to reinforce the material, which introduces the technical language, tools and techniques used by geologists and geophysicists in oil and gas exploration and production.

The information is presented in a nontechnical manner by instructor Kristie Luchtel Ferguson. The course is best used to help interns and new hires acquire an overall perspective of the petroleum industry. The class also is ideal for:

- Attorneys
- Administrative assistants
- Exhibit booth personnel
- Lease analysts
- Accountants
- Marketing/sales personnel
- Geotechs
- Finance personnel
- Managers
- Computer programmers
- Human Resources personnel

The 14-hour class requires six quizzes of 10 questions each inserted throughout the online material. Topics include where oil comes from, hydrocarbon sources, well drilling basics, mineral rights and leases and more.

Accreditation is 14 professional development hours and 1.4 continuing education credits. To register, visit cese.utulsa.edu.

CESE at SPE 2017

Thank you to all who stopped by the TU CESE booth at the 2017 Society of Petroleum Engineers Annual Technical Conference and Exhibition in San Antonio, October 9-11. The conference allowed us to meet personally with many TU alumni and industry professionals from leading exploration and production companies.
HURRICANE TRACKER

The forecast for the next generation of alumni

The Alumni Association and Office of Admission would like you to share the name and contact information of a student you feel would make a great member of the TU family. The Office of Admission will then contact the student directly to give him/her the option of registering as a prospective student, and, because of your referral, waive the $50 application fee.

We also urge you to contact the prospective student to share your TU experience and express your encouragement and excitement at the possibility of him/her joining the TU family. After all, there are no better advocates for TU than enthusiastic alumni and friends.

If you have any questions, please contact the Office of Admission at 918-631-2307 or admission@utulsa.edu.