

# LEADING INTO HEFUTUR

**MOHAMMAD DEHGHANI:** S&T'S NINTH CHANCELLOR



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# Our mascot personifies that spirit.

Always ready for work and never without the tools of his trade, Joe Miner represents the rugged individualism and frontier spirit that have guided Miners for nearly 150 years.

This holiday season, Joe and the Miner Alumni Association join Miners everywhere in celebrating that spirit by thanking you for sharing it.

mineralumni.com/give



### CORRECTION

On page 21 of the Summer 2019 issue, Paul Lang's degree information was listed incorrectly. It should be **Paul Lang**, MinE'83. We regret the error.

### **AROUND THE PUCK**

# Underground engineer

Nancy Matteoni is digging her way under St. Louis in her latest Parsons project.

#### What happens in Vegas ... may D appear in print

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**Eco-investigator** 9

Robin Verble leads the Ozark Research Field Station.



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S&T's ninth chancellor.

## **BEYOND THE PUCK**

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Hasselmann property to expand.

ŋ Class notes ป

Learn what your former classmates are up to.



#### Missouri governor honors Akers

Former astronaut Tom Akers received the Missouri National Guard Meritorious Service Medal Ribbon.

4<sup>:</sup>J Memorials

We remember our classmates and friends.



Investing in the intersection of technology, arts and sciences Mike, ME'67, and Linda Evans.



Missouri S&T's rank among Missouri colleges for alumni salary potential, according to **Payscale.com**. S&T is ranked No. 48 nationally for best universities for a bachelor's degree.

# **\$93**

Cost of a chemistry text using AutoAccess, an S&T Store program that allows students to use digital course material through Canvas, S&T's digital learning management system. The chemistry book used to cost \$330 and weigh almost 10 pounds.

# \$698,223

Record royalty income from patents on commercialized inventions and products S&T earned in fiscal year 2019 — a 32% increase over the previous year's income.

# MISSOURI S&T BY THE NUMBERS



Invitations S&T has received from the U.S. Department of Energy to compete in the Solar Decathlon more than any other university in the world.



3.95

Average GPA of this fall's first-year students at Missouri S&T. With an average ACT score of 28.8, this group is among the top 10% in the nation.

\$1.2

U.S. Department of Transportation grant to allow chemistry researcher **Phil Whitefield** to characterize aircraft emissions using conventional and sustainable alternative jet fuels in jet engines at cruising altitude.



Missouri S&T Magazine is written, edited and designed by the staff of the Missouri S&T Marketing and Communications Department and the Miner Alumni Association.

#### CHANCELLOR Mohammad Dehghani

VICE CHANCELLOR FOR UNIVERSITY ADVANCEMENT

MINER ALUMNI ASSOCIATION PRESIDENT

Stephen W. Rector, PetE'72, MS PetE'73

#### EDITORS

Nancy Hatch (Alumni) **Mary Helen Stoltz**, Engl'95 (News & Features)

#### ASSOCIATE NEWS

EDITORS Maridel Allinder Andrew Careaga Peter Ehrhard, MS TComm'18 Sarah Potter ASSOCIATE ALUMNI EDITOR Logan Campbell

DESIGN AND PRODUCTION

Jake Otto Lindsay Stanford Lishia Stevens

**STAFF PHOTOGRAPHER** Tom Wagner

#### CONTRIBUTORS

Terry Barner Nancy Bowles Delia Croessmann Mindy Limback Sam O'Keefe John Rodenberg Rudi Starek

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#### Send letters to:

Darlene Ramsay Miner Alumni Association 1100 N. Pine St. Rolla, MO 65409-0650 Phone: 800-JO-MINER Fax: 573-341-4706 Email: **alumni@mst.edu**  News & features:

Phone: 573-341-4328 Fax: 573-341-6157 Email: **news@mst.edu magazine.mst.edu** 

# Q&A

# Did you have a campus job?

As part of his research for the S&T 150th anniversary history book, **Larry Gragg**, Curators' Distinguished Teaching Professor emeritus of history and political science, asked if you had a job on campus, where you worked and what you learned from the experience. Here are a few of your answers:

### "I worked over two years in the Cloud Physics Research Lab. It was a fabulous job!

I learned so many things, from using machine tools to laying out circuit boards, silk-screening and etching them, and then populating the boards with parts to support the research projects. We made hundreds of temperature sensors using reverse-biased transistor base/emitter junctions which were then embedded in the walls of the cloud chambers. Our graduate student bosses were the best to work with."

**Robert Brandt**, EE'76 Garland, Texas

# "I was a charter member of the Campus Club, and was elected to a one-semester term as secretary-treasurer.

I learned to be a politician and to campaign. I endeavored to meet and befriend every member of the club, thus establishing a voter base to elect me to office. I also worked 20 hours per week at the campus police headquarters manning the dispatch microphone, logging events and duties, and contacting officers. I also answered the phone and serviced walk-in traffic. I learned respect and appreciation for campus security and how to be an intermediary between the public and the university."

**Russell J. Warchola**, GGph'67 Billings, Mont.

#### "I bartended for Chancellor **Merl Baker** when he had dinner parties and held receptions in his home.

Met many successful people (some graduates of MSM) and observed how successful folks interact in this type of social situation. The money was good and the education priceless."

**Rich Freeman**, CE'70, MS EMgt'75 Leland, N.C.

"I was the second station manager of MSM's first radio station, KMSM-FM 89.7 (now KMNR).

I worked on the staff of the radio station 1963–67. Though I had inclinations in broadcast radio in my high school days, actually running a real over-the-air radio station was valuable in my post-college days when I was general manager of KGNV-FM in Washington, Mo., and KGNN-AM/FM in Cuba, Mo., as well as the Christian radio consultant."

Ken Bowles, EE'66 Union, Mo.

# TO THE EDITOR

As usual, I enjoyed reading the Spring magazine, particularly the article on Dr. **Stephen Roberts**' CASB programs designed to "prepare students for sustainable careers in a rapidly changing world."

That article emphasized the importance of "soft skills" like critical thinking, effectively communicating, enthusiasm, commitment, problem solving and motivation. All of these are being taught, and taught well, in our outstanding Greek community.

With the recent spate of hand-wringing over enrollment drop, it would seem that we should recognize the soft skill set as no longer ancillary but an important component of the educational experience at S&T. If you buy that premise, then the bit of including the outstanding Greek experiences available at S&T as part of the promotional efforts of the university should follow. Yet, in that same publication (other than in the obits) there was but one mention of the fraternity experience, and that was not from the editorial staff.

There are opportunities here and, if you agree, then we can do better together.

**Michael Kearney**, EE'60 Kirkwood, Mo.

I wanted to thank the department behind *Missouri S&T Magazine* for the inspirational work communicated in the recent *Battle for the Brain* articles.

Thanks to my Rolla learning, I spent 20 years as a successful chemical engineer earning patents for designing new bottles for Gatorade and testing new packaging at Mallinckrodt, but brain trauma, sadly, suddenly became part of my life in 2018. During a vacation, I fell 30 feet down from a hiking trail at Shenandoah National Park on May 24 and suffered horrible brain, skull and bone injuries, so I am still unable to resume working due to many medical issues.

I still can read the magazine, however, and though I have never doubted great work is done at Rolla, until reading the newest magazine, I had never once realized ongoing meaningful work to prevent and protect human brains from brain trauma issues happened there. Thanks so much for the great work to those researchers and to those who assembled the interesting magazine articles.

Jeremy M. White, ChE'97 Clinton, Mo.

# BRINGING CLEAN WATER TO SOUTH AMERICA



ssessing water quality, surveying mountaintop locations and building systems to catch rainwater — that's how members of S&T's chapter of Engineers Without Borders spent their summer break.

Two teams of students traveled to Puerto Pando and Atahuallani in Bolivia, and to Agua Fria, Ecuador, to help provide clean water and sanitation to the areas.

In Puerto Pando, one group assessed a previously completed water system and fixed parts that were in disrepair. They also interviewed community leaders and tested water to evaluate the system's effectiveness and use.

"The community took a storage tank design that we had built on a previous trip and copied it to build their own tank, which they use for water storage," says **Cade Long**, one of the team leaders and a senior in engineering management. "This was amazing to see, as we didn't provide any guidance in this process, yet they learned from us by watching and studying our design. This felt like a 'proud teaching moment,' as seeing their success with no help from us was awe-inspiring and reassured us that our system would be left in good hands."

That same group then traveled to Atahuallani, Bolivia, a mountaintop community at over 12,000 feet in elevation. They surveyed various locations in topography and collected water samples from local sources. The students focused on gathering information and building relationships with the local community.

"Getting the community in Atahuallani to trust the team is the first hurdle to overcome," says Christi Luks, faculty advisor and a teaching professor of chemical and biochemical engineering at S&T. "The community has had a poor experience in the past with an external group, so the S&T team has to show how its work will benefit the community and how past experiences have helped other locations."

In Agua Fria, Ecuador, team members spent six days working with community members to build a rainwater catchment system and a basic filtration system at a local school. The catchment system will hold 7,500 liters and will give school children year-long access to safe water. The team also taught community members how to implement a similar system on individual homes.

#### 4 AROUND THE PUCK FALL/WINTER 2019

# GEOTHERMAL GOALS EXCEEDED

After five years of operation, Missouri S&T's geothermal energy system continues to outperform expectations.

S&T facilities operations staff originally predicted the geothermal system would reduce campus water usage by over 10% roughly 10 million gallons per year. The system, which went online in May 2014, cut actual water usage by 18 million to 20 million gallons a year.

They also expected the system to cut the university's annual energy use by 50%. At the end of its first year of operation, S&T saw a 57% reduction in energy use. The operation is trending at a savings of almost 60% per year.

Officials predicted a reduction of the university's carbon footprint by 25,000 tons per year, and S&T has met or exceeded that goal each year.

"We hope to be even more efficient in the future," says **Ted Ruth**, assistant vice chancellor of facilities services at Missouri S&T.

S&T's geothermal energy system allows energy to be stored in and reclaimed from well fields located throughout the campus. It provides heating and cooling to 18 buildings and chilled water to the majority of campus.

The system consists of 789 wells, each 400–440 feet deep. Those wells supply three regional plants, each with 500-ton capacity, plus a geothermal system for the Gale Bullman Building. The project required a complete reconstruction of the campus chilled water system as well as the placement — or replacement — of 125 miles of underground pipe.

"The numbers show the system running better than expected, and full project payback will be achieved after seven total years of operation," says Ruth. "We had no issues adding Bertelsmeyer Hall onto the project when it was constructed in 2014, and we hope to incorporate any future new structures into the system." Photo by David Torrence

# NANCY MATTEONI UNDERGROUND UNDERGROUND ENGINEER

If you have traveled through St. Louis in the past few years, chances are you have driven on or over a construction project that **Nancy Matteoni**, CE'90, has built.

As a principal engineer and project manager for Parsons, she coordinates large-scale projects in the greater St. Louis area.

Matteoni worked on the U.S. Highway 40/Interstate 64 expansion that was years in the making, and she was a part of the team that added a pedestrian bridge connecting the MetroLink East Riverfront Station to the Eads Bridge — a combined railroad and roadway that spans the Mississippi River.

"The Eads Bridge construction project was fun because I had the opportunity to become an expert in the history of this 145-year-old

bridge," says Matteoni. "I love history, so learning about the role it had played, its creation and expansion, and its one-time status as an engineering marvel was great."

Currently, Matteoni is leading a Parsons project for the Metropolitan St. Louis Sewer District known as the Deer Creek Tunnel Project. The 4-mile-long tunnel lies approximately 175 feet underground and will run from Shrewsbury, Mo., to Clayton, Mo. A portion runs underneath the parking lot of the Saint Louis Galleria shopping mall.

"Before 2017, all I had worked on in my career were bridges," says Matteoni. "Now suddenly I am working in an opposite direction, under the ground."

The tunnel, which will have a 19-foot-diameter interior, will collect and temporarily store water during heavy rains, alleviating potential flooding in the cities. The collected water will then be filtered to treatment plants and put back into the flow system. The tunnel will also help control sewage flows to a waste water treatment plant, eliminating an expensive proposed treatment plant expansion.

"I love being on the construction side of things during any project," says Matteoni. "It is different than the design end of the business that I am usually on. Here I can see issues as they arise and make changes to a project on the go — it makes a project much more agile."

# What happens in Vegas ...

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n his latest volume of Las Vegas lore, historian **Larry Gragg** says it was deliberate publicity strategies that changed the perception of Sin City from a regional tourist destination where one could legally gamble and access legalized prostitution just outside the city limits, to a family vacation spot filled with entertainment options and surrounded by scenic beauty.

"The rise in Las Vegas tourism from a million visitors in 1950 to 10 million in 1960 was no accident," says Gragg, a Curators' Distinguished Teaching Professor emeritus of history and political science at Missouri S&T.

Gragg's book, *Becoming America's Playground: Las Vegas in the 1950s*, offers a behind-the-scenes look at the development of tourism in Las Vegas. This is his ninth book and third about Vegas culture. It's also the first to exclusively focus on Las Vegas in the '50s.

Las Vegas and Clark County grew substantially during World War II because of job opportunities at the Las Vegas Air Force Base Aircraft Gunnery School and the Basic Magnesium Plant in nearby Henderson, Nev. But when the war ended, jobs were scarce, Gragg says.

"Las Vegas was searching for a way to provide continued employment for its residents and to grow the community," he says. "At the time, postwar Americans felt a need to escape, and the Las Vegas Chamber of Commerce saw a chance to capitalize on the town's reputation for leisure."

In the book, Gragg describes how the unconventional yet highly successful promotional strategies of Steve Hannagan, a well-known

publicist hired by the city of Las Vegas between 1948 and 1949, propelled the city's growth of tourism. By ignoring Vegas' image as a gambling resort and heavily promoting it as the hub of a scenic wonderland where families would want to vacation, Hannagan began to change the city's public perception.

HERE IT IS

Don English, a popular photographer at the time, previously worked for Hannagan and came to Las Vegas in 1949 to join the News Bureau. He recalled the daily morning "hometown run" where news staff photographed small-town couples in front of their hotels, then sent the photos to the subjects' hometown newspapers to publish so their friends and neighbors would be inspired to make the same trip.

Las Vegas publicity in this era also revolved around the Nevada Test Site, situated 65 miles outside the city. English's famous promotional photos include a striking black and white image of a nuclear detonation cloud framed by the iconic neon "Vegas Vic" and the Pioneer Club sign.

From 1950 to 1960, Las Vegas had the highest per capita income in the U.S., hotel building was thriving, and the city was deeply segregated. In an interview with platinum album recording star Johnny Mathis, Gragg learned that after his performances, Mathis was shuffled to the west side of Las Vegas, where most black residents lived, because African Americans were not welcome to stay in the same hotels with white guests. Mathis described his experience as "almost like watching a sad, sad movie."



# PREDICTING EARTHQUAKES BY ANALYZING THE PAST

This past summer's southern California earthquakes, one a 6.4 magnitude and another a 7.1 magnitude, make accurately predicting when and where the next one will occur more important than ever.

With funding from the National Science Foundation Geophysics Program, **Kelly Liu**, a professor of geosciences and geological and petroleum engineering at Missouri S&T, is doing just that. Liu is digging deeper into the earth's past data by analyzing shear-wave splitting.

Shear-wave splitting is when a wave originating from an earthquake travels through a directionally dependent area formed by plate motion, causing it to split into two waves.

"The relative movement of the tectonic plates against each other produces majestic mountains and deep ocean basins, but also causes earthquakes and volcanic eruptions," says Liu, who is working on the project with **Stephen Gao**, Curators' Distinguished Teaching Professor of geology and geophysics. "Improving our understanding of such processes is essential not only for understanding how the earth works, but also for achieving the ultimate goal of reliably predicting and mitigating natural hazards."

Liu is analyzing wave data from 1980 to present. She says that previous shear-wave splitting studies were mostly conducted under the assumption that there is only one layer of anisotropy and the tendency for waves to travel along certain areas, much like wood tends to split along the grain rather than against it.

"The recent dramatic increase in the number of seismic stations and recorded earthquakes suggests that the actual situation is more complicated than this single-layer assumption," says Liu. "This project will develop and test a set of sophisticated tools to systematically investigate complex anisotropy on a global scale, for the purpose of providing constraints on a number of hypotheses related to plate dynamics and plate motion."

Because the seismic processes that lead to tsunamis, earthquakes and volcanic activity happen deep in the earth's core, they can't be directly observed. That's where Liu's work comes in.

"Indirect tools, such as relying on computer analyses of a large amount of geophysical data collected at the earth's surface, are essential for accurate and useful predictions," she says.



# RECYCLE YOUR Solar Panels

The U.S. gets about 2.3% of its electricity from solar energy, and solar energy use is only expected to grow. By some estimates, nearly half a million solar panels are installed every day. But what happens to all those panels once they're no longer usable in 20–30 years?

Thomas Yarbrough (above right), CE'18, MS CE'18, a Ph.D. student in civil engineering, is working with assistant chair and associate professor **Stuart Baur** (left) to help modify state- and local-level recycling efforts by educating current owners about disposal options.

"People don't realize the sheer number of panels that are installed each year," Yarbrough says. "In just the past few years, the solar panel industry has averaged half a million panels being installed each day — eventually we will have piles of these things lying around."

By providing a better understanding of current salvaging options, they hope to improve recycling efforts and to establish a baseline measure for what solar panels are still usable. They also hope to create new public awareness programs focused on reusing and repurposing panels.

Working with the Ozark Rivers Solid Waste Management District, Baur will form potential guidelines and procedures that the industry and state could use to increase reuse.

"Unchecked, the current direction could lead to a crisis in waste management, where unprepared regions will see large amounts of under-utilized, discarded paneling," Baur says.

### TESTING THE ROAD

# BEFORE IT'S BUILT



wo recent Missouri S&T graduates used a driving simulator to help a civil engineering firm evaluate a new roadway design for the \$18.6 million Route 160 widening project from Springfield to Willard, Mo. During their final year at S&T, **David Doell**, EMgt'19, and **Matt DeMoss**, CE'19, worked with Crawford, Murphy and Tilly Inc. (CMT), a civil engineering firm with an office in Springfield, which designed the expansion of Route 160 to widen it from two lanes to four and replace some intersections with roundabouts. The company completed the design for the Missouri Department of Transportation (MoDOT).

CMT invested \$30,000 for S&T students to develop simulations of the existing and proposed roadway, using the driving simulator on campus, and test it with actual drivers. The firm decided to add the testing to establish a baseline of data on driver behavior for the existing roadway before and after the improvements.

"It's a high-crash area with numerous fatalities in the corridor," says Steve Prange, regional office manager for CMT in Springfield. "The corridor is a priority for MoDOT right now. There is a lot of traffic with younger drivers going from Springfield to Willard for high school. They're young and inexperienced drivers that are traveling on a two-lane highway with a lot of truck traffic and intersections that make it challenging."

Doell learned the technical side of running the driving simulator. He taught himself a coding language called Python to program the simulator

on campus. DeMoss prepared and converted the design drawings from CMT for Doell to input into the simulator's software.

Then they recruited 27 participants from ages 16 to 67 in the Rolla area to drive simulations of the current Route 160 and the proposed design of the roadway. They collected data about each volunteer's driving habits as well as their verbal comments while driving the two routes.

DeMoss and Doell say this sort of simulation research could benefit both engineers and departments of transportation.

"The simulator provides a viable option and a much cheaper way to evaluate the roadway and how it will interact with real drivers without having to spend millions of dollars to do so and having to go back and make changes afterwards," says DeMoss.

"Especially with new ideas," says Doell. "If they're building another intersection, engineers have done quite a few of those, and they have data. But for something like the roundabout that's new to this area, it helps a lot to have this simulation."

Prange says a great benefit to the testing was the investment in the young engineering talent coming from Missouri S&T and giving them experience in design work.

"The biggest benefit for us is the collaboration between the young students and our staff and our designers here and sharing the results with MoDOT," says Prange. "It's been a great project."



# STUDYING THE WIND

Less than 24 hours after tornadoes swept through communities across Missouri last May, **Guirong "Grace" Yan** was inspecting the damage in Jefferson City, one of the cities hit by the tornado outbreak.

Yan, an assistant professor of structural engineering at Missouri S&T, and three of her Ph.D. students visited the state capitol to assess the damage as part of her research on tornadic wind pressure. Her work could lead to the creation of new models for tornado-resistant building design. Ultimately, she hopes her research will be used to strengthen building codes for municipalities.

"Most of the building codes we see now design a structure to withstand straight-line winds," says Yan, who is also director of the Wind Hazards Mitigation Laboratory at S&T. "We need to design structures to resist tornadoes."

View a video about Yan's inspection of tornado damage at **rol.la/MoTornado**.

# 

# Tracking the state of the ecosystem by studying its forests, fires and insect population is what makes **Robin Verble** tick, and she uses her findings to help advance healthy and sustainable management of natural areas.

Verble joined S&T in summer 2018 as founding director of the Ozark Research Field Station and associate professor of biological sciences.

"I put a lot of value on finding ways to provide students with more hands-on experience," says Verble. "This opportunity not only increases their employability, but also helps them find their passion."

The field station's nine-acre biological resource site, made available to S&T through a partnership with the Missouri Department of Conservation, is located about 20 miles southwest of Rolla on land settled in the 1860s. The area contains ponds, streams, woods, wildlife and a historical house.

Verble hopes to extend S&T's academic offerings through the field station by adding courses in field ecology, organismal biology and field taxonomy, and other courses across various university departments. She's making the field station available S&T and the community through the public school system and organizations like the Girl Scouts, Missouri Master Naturalists and the Audubon Society.

"There's so much to be learned from our local ecology and land use history," says Verble. "As climates change, individual places change along with them — and place-based studies allow us to observe our impacts on these local systems. It's important to connect this knowledge to college students, the university, public school students and naturalist groups."

Verble's research focus is fire ecology. She studies the effects of wildland and prescribed fires on the insect community, a bio-diverse species group that is easy to find and identify.

"Insects are a barometer for ecosystem health," says Verble. "Especially after a fire, they're a ubiquitous, bottom-up indicator of what shape the environment is in."

#### "I put a lot of value on finding ways to provide students with more hands-on experience."

MISSOURI S&T MAGAZINE 9



Approximately 2.4 billion years ago, the Great Oxidation Event dramatically increased the oxygen content in Earth's atmosphere and paved the way for the rise of all lifeforms that use oxygen to break down nutrients for energy.

Scientists agree about when the event happened, but they are less certain about exactly how. **Marek Locmelis**, assistant professor of geosciences and geological and petroleum engineering, believes he's discovered that "how." He studies if and how oxygen bound in minerals and magmas in the interiors of planets can affect the composition of oceans and atmospheres and contribute to whether a planet is habitable.

"Without the Great Oxidation Event, there would be no plant and animal life on Earth or at least no life on Earth as we know it — including us," says Locmelis. "We provided really solid evidence that Archean mantle oxidation contributed to it, which was something that was ruled out for the past 20 or 30 years."

In the August 2019 issue of *American Mineralogist*, Locmelis describes how he used a technique known as laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS) analysis to study minerals that contain clues to how Earth's interior changed over time. This technique enables much more sensitive isotopic and elemental analysis of solid samples than earlier methods.

Locmelis studied samples of the mineral olivine in igneous rocks called komatiites that

were derived from Earth's mantle during the Archean Eon — a geologic time period 4 billion to 2.5 billion years ago.

Locmelis gathered samples of komatiites from cratons in southern Africa, Australia and Canada. A craton is an old, stable part of the Earth's topmost layers — the crust and upper mantle that range from 2.7 billion to 3.5 billion years old.

The researchers compared the trace element chemistry of olivine from komatiites that are 3.5 billion to 3.3 billion years old to ones that formed more recently — about 2.7 billion years ago. They found that Earth's mantle appears to have gradually become more oxidized between 3.5 billion and 2.7 billion years ago, Locmelis says. This oxidation, in turn, possibly triggered the Great Oxidation Event.

Locmelis says previous studies dismissed the Archean Eon mantle oxidation because they used different analytical techniques. Researchers used to crush and analyze whole rocks instead of isolating minerals, such as olivine, and analyzing them via modern techniques, such as the one used in this study.

"Take eating a sandwich. You take a bite and just want to taste a pickle, but sometimes the Locmelis with graduate students Bolorchimeg Nanzad (center) and Kaylin Tunnell (right).

"Without the Great Oxidation Event, there would be no plant and animal life on Earth or at least no life on Earth as we know it including us."

pickle is so small that you're overwhelmed by all the other flavors," says Locmelis. "That's the difference between whole rock studies and mineral studies. When you analyze minerals directly, you circumvent all the problems associated with bulk analysis, which really are just a mix of different flavors or geological processes. If you analyze minerals that crystallized early from the magma, you really have much more robust information, especially with all the modern techniques we have available today."

Locmelis says his study suggests that Archean mantle oxidation may have contributed to, or even triggered, the oxidation of the atmosphere, which led to the lifeforms on Earth today. He notes that a recent study submitted at the same time as his yielded similar results, but used a different analytical approach.

"If two studies come to the same conclusion, independently and with different techniques, it suggests that we are really on to something, and that we have to rethink our understanding of the redox evolution of our planet," says Locmelis.



# A 'BOLDLY REVISIONIST' LOOK AT **WORLD WAR II IN THE PACIFIC**

ohn C. McManus' 13th book of military history is his first to examine the U.S. Army's experience in the Pacific and East Asia during World War II.

*Fire and Fortitude: The US Army in the Pacific War, 1941–1943* is the first of a two-volume history of the struggle.

*"Fire and Fortitude* is an epic human story, one that I have wanted to tell for years," McManus says. *"I* discovered tremendous amounts of new, original source material and came to realize that the Pacific War set the tone for so much subsequent American history, such as the brutal nature of the fighting, the preeminence of Asia in American strategic thinking, the rise of post-colonial nationalism, the importance of cultural knowhow, particularly in counterinsurgent warfare, and the crucial role of leadership for any military force."

The 640-page book begins with an account of the Japanese attack on Pearl Harbor in December 1941 — the event that drew the U.S. into war with Japan — and concludes with the November 1943 Battle of Makin, a sliver of an island in the Pacific, where U.S. soldiers were tested by increasingly desperate Japanese forces.

In between, McManus tells the story of nearly two years of punishing combat in the Pacific as the U.S. Army "transformed, at times unsteadily, from an undertrained garrison force to an unstoppable juggernaut," McManus says. The war also transformed America from "an inward-looking nation into a global superpower," McManus says.

McManus delves into the actions and personalities of many of those military leaders. But as is typical with his previous military histories, he also gives life to the voices of the common soldiers on both sides, especially "the uncelebrated American grunts" who endured the hostile tropical climate and battled malaria and other diseases while they fought a formidable Japanese army.

McManus' research for *Fire and Fortitude*, as well as the second volume, which is expected to be published in 2021, was supported in part through a National Endowment for the Humanities Public Scholar award, which he received in 2015.

McManus spent the last academic year as a visiting professor at the U.S. Naval Academy in Annapolis, Md., where he held the Dr. Leo A. Shifrin Distinguished Chair of Military History. That experience with the Naval Academy helped further inform his research for *Fire and Fortitude*, he says.

# UM SYSTEM FUNDS FOUR NEW RESEARCH CENTERS

issouri S&T will soon establish four new research centers and laboratories that build on the university's strengths in materials science and engineering, civil infrastructure, and electrical power systems thanks to funding from a multicampus initiative of the University of Missouri System.

The projects are among 19 from the UM System's four universities selected to receive funding through the system's strategic investment program for research and creative works.

Through the program, Missouri S&T will receive funding for the following projects:

• The Center for Glass Science and Technology

(CGST), which will provide equipment and lab space to support research across the UM System related to the NextGen Precision Health Initiative and Institute. NextGen is expected to accelerate medical breakthroughs for patients in Missouri and beyond. The CGST builds on Missouri S&T's previous success in glass research, including the development of bioactive glasses to treat cancer and open wounds. Richard Brow, Curators' Distinguished Professor of materials science and engineering and interim deputy provost, will lead the center. Other faculty involved are Ming C. Leu, the Keith and Pat Bailey Professor of Integrated Product Manufacturing; Julia Medvedeva, professor of physics; Julie Semon, assistant

Students test infrastructure with a drone as part of the BIRDS (Bridge Inspection Robot Deployment Systems) program.



professor of biological sciences; and **Yezaz Ghouri**, assistant professor of clinical medicine at MU Health Care.

- The Center for Novel Carbon-Efficient 0 Binders for Sustainable Infrastructure. where researchers will develop more sustainable and efficient binding agents for concrete. The bonding agents hold promise as being stronger, more durable and longer lasting. Kamal Khayat, the Vernon and Maralee Jones Professor of Civil Engineering, will lead the center. Other faculty involved are Sajal K. Das, the Daniel St. Clair Chair of Computer Science; Aditya Kumar, assistant professor of materials science and engineering; Honyang Ma, assistant professor of civil engineering; and George A. Zsidisin, the John W. Barriger Professor of Supply Chain Management at the University of Missouri-St. Louis.
  - The Center for Infrastructure Preservation and Resilience, which will bring together experts in data analytics, robotics and artificial intelligence to develop new approaches to the design, inspection and maintenance of infrastructure — from roads, bridges, buildings and tunnels to electrical power grids. The center will be led by **Genda Chen**, the Robert W. Abbett Distinguished Professor of Civil Engineering, and will involve Jenny Liu, professor of civil engineering; **Suzanna** Long, Hist'84, Phys'84, MS EMgt'04, PhD EMgt'07, professor and chair of engineering management and systems engineering; Zhaozheng Yin, associate professor of computer science; and William G. Buttlar, the Glen Barton Chair of Flexible Pavement Technology at the University of Missouri-Columbia.

• A project titled "Energy Reliability and Resilience of Electrified Transportation Infrastructure" and the affiliated Electrified Transportation Distribution System Laboratory. The lab will be used

to demonstrate and test new devices and systems for electric transportation, including light rail, electric ships, renewable energy systems and electric vehicle charging stations. Mehdi Ferdowsi, professor of electrical and computer engineering, will lead the project. Joining him are Jonathan Kimball, professor of electrical and computer engineering; Robert Landers, Curators' Distinguished Professor of mechanical engineering; Ruwen Qin, associate professor of engineering management and systems engineering; Dan Lin, associate professor of electrical engineering and computer science at MU; and Jianli Pan, assistant professor of mathematics and computer science at UMSL.

In addition, Missouri S&T faculty are involved in two research efforts led by MU. Khayat is involved in a project to develop future urban infrastructure, and **Stephen S. Gao**, Curators' Distinguished Teaching Professor of geology and geophysics, is part of a team that will develop capacity for using geospatial-enabled data for a breadth of research across the fouruniversity UM System.

The winning projects were chosen because they either advance the systemwide NextGen Precision Health Initiative, support the core instrumentation and infrastructure of the NextGen Precision Health Institute on the Columbia campus, or serve other key priorities of the four universities.

# S&T AND ST. LOUIS College of Pharmacy Partner on Admissions

Aspiring pharmacists attending Missouri S&T can now participate in a new pathway to admission into St. Louis College of Pharmacy's Doctor of Pharmacy (Pharm.D.) program.

Qualified students can pursue one of two paths. An accelerated option, called the "three-year plus four-year" path, allows them to gain early admission to the college and transfer credits from their first year in the Pharm.D. program back to S&T to complete their bachelor's degree.

The traditional "four-year plus four-year" path allows students to complete their bachelor's degree at S&T before matriculating to STLCOP. Students in the accelerated path must complete all general education requirements and as many hours toward the biological sciences major as possible before matriculating to STLCOP.

"Approximately two-thirds of our 250 biological sciences majors are interested in continuing their post-baccalaureate education, and half are interested in professional programs in health care," says **David Duvernell**, chair and professor of biological sciences at S&T. In a 2018 survey of 143 S&T biological sciences majors, 12 were interested in pursuing a Pharm.D. after graduation, he adds.

# Nine Hereiter Fell Ferting

# **Miner Homecoming Fall Festival**





14 AROUND THE PUCK FALL/WINTER 2019





The Miner Alumni Association honored a select group of alumni during Homecoming for their accomplishments and their devotion to the association, the campus and its students.

Honorees, pictured at right, front row, from left:

- Janet Kavandi, MS Chem'82, Alumni Achievement Award
- **Stephanie Vogt**, EE'03, MS EMgt'05, Distinguished Young Alumni Award
- Nicole Galloway, Econ'04, Math'04, Distinguished Young Alumni Award
- **Dixie Finley**, Psyc'68, Robert V. Wolf Alumni Service Award
- **Gerald "Gerry" Stevenson**, ChE'59, MS ChE'63, Alumni Merit Award
- Back row, from left:
  - William "Bill" Hallett, MetE'55, Frank H. Mackaman Alumni Volunteer Service Award
  - **Steve Liu**, assistant professor of finance in business and information technology, Class of '42 Excellence in Teaching Award
- Steven Jung, CerE'05, MS CerE'07, PhD MSE'10, Alumni Achievement Award

Paul Lang, MinE'83, Alumni Merit Award

*Not pictured:* **Christopher G. Maples**, former interim chancellor of Missouri S&T, Honorary Life Member Award

- 1. Miners and friends visit during the Legends Luncheon at Hasselmann Alumni House.
- 2. Joe Miner welcomes alumni.
- 3. Retiring S&T athletic director **Mark Mullin** addresses alumni during lunch.
- Miner Alumni Association president Stephen Rector, PetE'72, MS PetE'73, presents Stephanie Vogt, EE'03, MS EMgt'05, and other awardees with custom jackets.





16 AROUND THE PUCK FALL/WINTER 2019

#### F ALLGOOD-BAILEY STADIUM - HOME OF THE MINERS MINER TOUG





- Jim, ChE'66, and Glenda Bertelsmeyer mingle with Miner Baja Design Team member Jackson Barry at the Silver and Gold Gathering.
- The crowd cheers on the Miners as they scratch out a Homecoming victory over the Quincy University Hawks.
- Homecoming King Jamon Peatross, a sophomore in mechanical engineering, and Queen Miriam Garcia, a junior in chemical engineering, visit with Ernie Banks, ChE'81, during Silver and Gold.
- 4. Gerry Stevenson, ChE'59, MS ChE'63, and Al Cawns, ME'59, MS CSci'84, visit during the tailgate party.
- 5. Chancellor **Mo Dehghani** tailgates with alumni before the game.
- 6. Guests feast on hamburgers, hot dogs and s'mores during the tailgate.
- 7. Helene Hardy Pierce, EMgt '83, chats with Mars Rover Design Team members Andrew Van Horn (left) and Ethan Arneson.



# ALUMNI TAKE Leadership Roles In Association

During their annual Homecoming meeting on Oct. 5, members of the Miner Alumni Association board of directors approved the following new and returning board members:

#### **New members**

**Jeremy Bylo**, EMgt'14, director-at-large (first term)

Kathryn Crinnian, EnvE'13, Area 3 director (first term)

**Paul Hirtz**, EMgt'95, MS EMgt'97, PhD EMgt'02, Areas 10–18 director (first term)

**Ted Kelly**, Econ'77, Areas 10–18 director (first term)

**Ian Lee**, EMgt'14, Area 22 director (first term)

**Dennis Leitterman**, EE'76, MS EE'77, Area 23 director (first term)

**Michael Party**, GGph'78, Area 20 director (first term)

Richard Szevery, MetE'02, Area 9 director (first term)

**Stephanie Vogt**, EE'03, MS EMgt'05, Areas 10–18 director (first term)

#### **Returning members**

David W. Heineck, ChE'79, Area 24 director Joshua Hoffman, MinE'07, Area 2 director Rhonda Pautler, MetE'87, Area 1 director Carl Schmitz, IST'10, Areas 10–18 director

#### **Departing members**

Many thanks to the departing members of the Miner Alumni Association board of directors for their dedication and loyalty to the association and Missouri S&T:

**Elizabeth Baumbach**, CerE'90, Areas 10–18 director

John Campbell, ChE'74, Area 20 director Michael Gross, MetE'88, MS MetE'94, Area 9 director

**Pete Heerboth**, CSci'03, Area 23 director **Kimberly Morrison**, GeoE'96, Area 22 director

Steven Puzach, CE'09, Areas 10–18 director Daniel Ryan, ME'12, Area 3 director George Schindler, EE'73, director-at-large Chad Vail, ChE'05, Areas 10–18 director



# **50 YEARS IN PHYSICS**

This past fall, the College of Arts, Sciences, and Business honored **Jerry Peacher**, associate chair and professor of physics, for 50 years of teaching excellence.

Peacher, who joined the faculty as an assistant professor in 1969, has taught generations of S&T students to understand the properties of general relativity, electricity and magnetism, engineering physics, and theoretical physics. He says his students have been a constant inspiration, and he wants to keep teaching as long as he's able.

"The nice thing about S&T is that the quality of the students has stayed consistent since I began here," says Peacher. "That's why I keep teaching — it's interesting. People who want to do physics are pretty good students and have to know a lot of math to succeed in physics."

# JOIN US FOR THE 112TH BEST EVER!

All alumni, friends and guests are invited to attend the 112th St. Pat's pre-parade party on Saturday, March 14, at Hasselmann Alumni House, located at 1100 N. Pine St.

Enjoy complimentary breakfast items and a cash bar serving beer, bloody marys and mimosas. Make plans now to travel to Rolla for St. Pat's or attend one of the section events in your area. Help make the 112th celebration the Best Ever!



# S&T GRAD CONTRIBUTES \$550,000 TO CLASSROOM LEARNING CENTER

The president and CEO of a company founded the same year classes were first held at S&T has donated \$550,000 to provide more classroom space for today's students.

Construction began in July on a new Classroom Learning Center at Missouri S&T. **Robert M. Williams Jr.**, ME'74, president and CEO of St. Louis-based Williams Patent Crusher and Pulverizer Co., contributed \$550,000 to the university in support of the project.

His gift will fund the learning center's largest space, a 300-seat lecture hall, as well as a major area in the center's main lobby.

The new Classroom Learning Center will add 15,900 square feet of space to the Computer Science Building. In addition to the 300-seat lecture hall, the learning center will include four 100-seat classrooms and three student learning commons.

The lecture hall and main lobby space will be named in recognition of Williams and his family: wife **Kathy**, son **Robert M. Williams III**, who works for the family business in information technology, and daughter **Ashley Williams**, ChE'09, who is a project and design engineer for the company.

"It is important to give back to the university that provided me with a world-class education," says Williams, a member of S&T's Academy of Mechanical and Aerospace Engineers who received an award of professional distinction from S&T in 2007. "We owe it to students to better the world however we can."

The new Classroom Learning Center is scheduled for completion by fall 2020. The \$7.6 million project will be funded by private charitable contributions and university reserves. For more information, contact **Rebecca Johnson**, executive director of development, at **johnsonnr@mst.edu** or 573-341-4743.

# SUMMER RESEARCH PROGRAM SUPPORTS UNDERREPRESENTED ENGINEERING STUDENTS

Six undergraduate students from Tennessee State University in Nashville and Tuskegee University in Tuskegee, Ala., spent two months this summer conducting engineering research at Missouri S&T as part of a new program designed to encourage underrepresented engineering students to consider pursuing graduate studies.

Missouri S&T's Summer Engineering Research Academy (SERA) is sponsored by S&T's College of Engineering and Computing (CEC).

"This was a new program, and it was a tremendous success," says **John Myers**, CEC associate dean and a professor of civil, architectural and environmental engineering. "We wanted to introduce more undergraduate students from underrepresented groups to the exciting research going on here at Missouri S&T, in hopes of generating interest in going on to graduate school after they finish their bachelor's degrees. We plan to continue to offer this program in the future."

"Each of the students worked with an S&T research group based on their expressed interest areas of metallurgical engineering, automation or advanced manufacturing," says **Kelley R. Wilkerson**, CerE'07, PhD CerE'12, assistant teaching professor of materials science and engineering and program director.

Each student spent about 30 hours a week on research and spent their remaining time exploring the university, touring labs, attending personal development workshops and participating in social activities. At the end of the two-month program, the students presented the results of their research.

Chris Buford II from Tennessee State University studies additive manufacturing as part of the Summer Engineering Research Academy (SERA).

# Pro 同日 **A SUMMER AT** Photo courtesy of Vanessa Mahan

# Biological sciences senior **Vanessa Mahan** thought she wanted to be a medical doctor.

But after a semester's coursework in cell biology, Mahan decided the profession was not for her. Further exploring her interests through a biodiversity course, Mahan found her passion — merging medicine with her love of animals.

And not just any animals. Mahan focuses on threatened or endangered species like whales, sharks, seals and turtles. This past summer, she interned as an education instructor at the Kansas City Zoo's Stingray Bay, a 20,000-gallon "touch tank" designed to let visitors easily touch two species of stingrays and the smallest species of sharks. The internship gave her just the marine mammal conservation experience she was looking for.

"I learned that sharks have iodine and iron deficiencies, and they can't eat unless you give them vitamins," says Mahan. "With 5,000 people a day coming through the exhibit, we saw that the stingrays and sharks were well taken care of."

The internship at Stingray Bay was one of four summer job offers Mahan received.

Her scientific job qualifications were fortified by the award-winning "Bionic Bowel" innovation project she and research partner **Catherine Pollman**, BSci '19, created as part of S&T's BioDesign and Innovation course taught by **Julie Semon**, assistant professor of biological sciences. Their invention uses bioactive glass to potentially change the pH level in the body of a Crohn's disease sufferer. By including the biomaterial in an oral medicine that dissolves and prevents scar tissue, the two realized they could implant the glass in the human body via a pill to repair the damaged area.

In April, they pitched the project in the University of Missouri System's Entrepreneur Quest Student Accelerator competition and won \$5,000. In May, they crossed the next step by winning a \$10,000 Blue Cross Blue Shield Healthcare Innovation Prize at the University of Missouri-Kansas City. With their winnings, Mahan and Pollman are starting animal trials for their proof-of-concept, and then will begin the patent application process.

"We wouldn't have been able to do what we've done without being at S&T," says Mahan. "There's nothing like it anywhere else. We definitely get a lot of practical training that other schools don't offer."

# LEADERSHIP CHANGES



#### **Stephen Roberts**, founding vice provost and

dean of the College of Arts, Sciences, and Business since 2014, became interim provost on July 1. He succeeds **Robert** 

**Marley**, who was provost July 14, 2014, through June 30, and is now part of the S&T engineering management and systems engineering faculty.



Richard Brow, Curators' Distinguished Professor of materials science and engineering, is interim deputy provost. A member of the faculty since 1998, he has served

as interim vice provost and dean of the College of Engineering and Computing and chair of materials science and engineering.



Kathleen (Kate) Drowne, associate dean of academic affairs in the College of Arts, Sciences, and Business (CASB), is interim vice provost and dean of CASB, effective

July 1. A faculty member since 2001, she is also a professor of English and technical communication and former director of the Center for Science, Technology, and Society.



Neil Outar, who served as interim chief diversity officer (CDO) at S&T since 2017, became CDO on July 1. Outar joined S&T in 2015 to establish the office of

institutional equity, diversity and inclusion, which investigates and adjudicates campus civil rights concerns.



Shobi Sivadasan, former associate vice president for graduate and international admissions at the University of New Haven in West Haven,

Conn., joined S&T on Oct. 1 as vice provost of enrollment management.



Kummer Student Design Center expansion donors were recognized at a groundbreaking ceremony in April. The expansion will add 8,000 square feet to the design center, home of S&T's student design teams.

# A MILESTONE YEAR FOR GIVING

Missouri S&T donors contributed \$24.3 million in charitable gifts and pledges during the 2019 fiscal year — a \$1.7 million increase over last year's benchmark of \$22.6 million. S&T also received nearly \$20.2 million in private grants, bringing total external funding for the fiscal year to \$44.5 million.

"This growth is a testament to many, but especially to the alumni who continue to prove that Miner pride is a powerhouse," says Vice Chancellor for University Advancement **Joan Nesbitt**. "Giving of this magnitude is a resounding vote of confidence in the university, but most of all in our students. Miners are giving back to Miners, just as they have for nearly 150 years."

Charitable giving to S&T has accelerated, with an increase of 7% over last year, 24% over two years ago and 129% over three years ago. This growth has provided a strong foundation for S&T's next comprehensive fundraising campaign.

Giving highlights for the year include a \$5 million planned gift to athletics from alumni John Gibson, EMgt'74, and Kristie (Capps) Gibson, EMgt'74; a \$3.8 million bequest in support of scholarships from alumnus Morton Deutch, MetE'50; a \$1 million gift from alumna and trustee Joan Woodard, Math'73, and her husband, James Woodard Jr., to establish the Woodard Associate Professorship for Excellence in Electrical and Computer Engineering; and a \$550,000 gift from alumnus Robert M. Williams Jr., ME'74, president and CEO of St. Louis-based Williams Patent Crusher and Pulverizer Co., to fund a 300-seat lecture hall in the university's new Classroom Learning Center (see story on page 18).

Scholarship support also increased thanks to 306 donors who contributed over \$6.5 million to the Miner Match, a scholarship program launched in response to the University of Missouri System's Missouri Promise and Opportunity initiative.

"The donors who give back to Missouri S&T ignite extraordinary possibilities in the lives of our students, in the potential for solution-inspired research and in the leadership essential for solving critical global challenges," said Chancellor **Mo Dehghani**. "This commitment is the cornerstone that drives excellence and defines Miner pride."

By Andrew Careaga, acareaga@mst.edu

# MOHAMMAD DEHGHANI: S&T'S NINTH CHANCELLOR

EADING INTO

#### Mohammad Dehghani was perplexed.

A project engineer at California's Lawrence Livermore National Laboratory (LLNL), he was assigned to work on a fusion reactor. One of the tasks of that complex project involved insulating a large stainless-steel chamber from the "thousands and thousands of volts of electricity" that would flow through it.

"We needed a massive ceramic ring to insulate the chamber and attach it to the rest of the system," Dehghani says. Finding a material that would withstand the metal

expansion that occurs at 800 degrees Centigrade was a challenge. Under such intense heat, the steel would expand more than the ceramic ring, causing the vacuum seal to fail.

So Dehghani consulted with experts, hoping to find the answer to this technical dilemma. He talked to others at Livermore, a \$1.8 billion, 7,000-employee national lab known for solving all kinds of complex engineering problems. He contacted material engineers at universities in the California Bay area. No one seemed to have an answer.

Finally, someone suggested he contact Missouri S&T's ceramic engineering department.

"We found a faculty member at Rolla" — Dehghani doesn't recall the name — "and during the very first conversation, he offered the simplest, most awesome solution.

"I vividly remember him saying, in our phone conversation, 'Why don't you assemble the system at mid-temperature range'?" That is, assemble the apparatus at 400 to 500 degrees, so that the ceramic ring will only experience the ramp-up and ramp-down within the tolerable degree range.

In retrospect, Dehghani calls the solution "a no-brainer" and wonders why he hadn't thought of it himself. But it also stumped other great minds at Livermore, Stanford and Berkeley, so he was not alone.

"We all were focused on either finding a novel material with expansion properties similar to those of steel or on redesigning the entire system," he says. "We were too close to the system and too much in the soup."

The Rolla faculty member's creative yet pragmatic approach to solving this technical problem typifies the character of Missouri S&T in Dehghani's mind. He calls it "solution-oriented research along with cutting-edge education to prepare S&T graduates who are career-ready engineers and scientists." It's one reason he was drawn to the chancellor's role here.

"Missouri S&T has always been a nationally recognized school focused on engineering and the sciences," Dehghani says. "In my mind, I always equated it to Michigan-Ann Arbor or Wisconsin-Madison. So, when I received the call to let me know that I was nominated for the position of chancellor, I was over the moon."



# A STRONG R&D BACKGROUND

On Aug. 1, Dehghani became the 22nd leader in S&T's 149-year history and the ninth to hold the title of chancellor. He comes with a strong background in research and development — the kind of applied research that S&T is known for.

A native of Tehran, Iran, he joins Missouri S&T from Stevens Institute of Technology in Hoboken, New Jersey, where he served as vice provost for research, innovation and entrepreneurship for six years. Dehghani succeeds **Christopher G. Maples**, who served as interim chancellor from May 2017 through July 31, 2019.

Dehghani earned three degrees in mechanical engineering from Louisiana State University then went to Massachusetts Institute of Technology on a postdoctoral fellowship from the National Science Foundation and the American Society of Engineering Education.

"Several of my high school friends in Tehran were Americans whose families lived in Iran for various work reasons or were children of mixed American-Iranian parents," he says. "Naturally, I was curious to see the places that my friends had come from and so I decided to pursue my college education in the U.S."

Over the past 22 years, Dehghani has taken on leadership responsibilities at two major research universities and two national laboratories, Livermore and the Johns Hopkins Applied Physics Laboratory (APL). Prior to joining Stevens, Dehghani was associate director for engineering, design and fabrication at APL and a member of the Johns Hopkins mechanical engineering faculty. He also served as founding director of the Johns Hopkins University Systems Institute (JHUSI), where he worked with the Department of Defense, the National Institutes of Health and other federal agencies.

"... we must also create new, modern programs in many areas for students who are interested in being a part of the solution to grand global challenges." Before joining Hopkins in 2008, Dehghani was at LLNL, most recently as the division leader of the research lab's New Technologies Engineering Division. He oversaw a staff of 450 involved in a wide array of disciplines, from biomedical and environmental engineering to mechanical, structural, nuclear and computational engineering to process systems.

He also spent a dozen years as a tenured faculty member in mechanical engineering at Ohio University and worked in private industry in Baton Rouge while pursuing his Ph.D.

# FOCUSING ON THE NEW "3 R'S"

Since joining S&T, Dehghani has set about learning as much as he can about the campus and the UM System. That's no surprise, given his approach to solving problems and his reputation as a team-builder and collaborator.

Dehghani sees Missouri S&T as an "ecosystem" in which success can thrive on many levels.







Top right: Chancellor Dehghani hosts a meal for members of the Chancellor's Leadership Academy, a program that helps secondsemester freshmen develop effective leadership skills.

Bottom right: Dehghani and other campus administrators served frozen treats and fist bumps to faculty, staff and students at S&T's annual ice cream social. "The essential elements of an excellent university are excellent students and excellent faculty and staff," he says. "A well-balanced academic ecosystem, where faculty and students are excited about their steady progress in research and academic endeavors, will become a destination of choice for the types of faculty, staff and students that will help us achieve our horizon goals. ... We need to focus all our efforts to create and maintain a thriving academic ecosystem and enhance S&T's well-deserved national and global standing of relevance and importance."

He plans to home in on growing the "3 R's" of recruitment, retention and research.

"It's important that we grow in all three areas," Dehghani says. "If we only recruit students but don't retain them, then we do a disservice to those students and to society. If we strengthen our research efforts, we will be able to recruit more graduate students as well as raise our profile nationally and internationally."

He's quick to add a fourth R to his list: reputation.

"With the right recruitment, retention and research strategies in place, we will be well-positioned to take S&T to a higher level of national recognition and relevance," Dehghani says. "To do that, we must also create new, modern programs in many areas for students who are interested in being a part of the solution to grand global challenges."

# EQUIPPING 'WORLDLY ENGINEERS AND SCIENTISTS'

It's an ideal time to start new programs that build on S&T's traditional STEM strengths by connecting with the university's exceptional humanities and liberal arts programs. Already, Dehghani is pushing for a new international engineering program that will combine engineering disciplines with languages such as French, German and Spanish, and he has asked a non-engineer, **Audra Merfeld-Langston**, chair of arts, languages and philosophy, to lead its development.



Above: Dehghani meets with Col. **Brent Unger**, commander of S&T's Air Force ROTC detachment 442 cadre and a professor of aerospace studies, following a campus memorial ceremony honoring the victims of the Sept. 11, 2001, terrorist attacks. That's the type of non-traditional approach you can expect from Dehghani. His background of addressing problems in complex systems — as he has done throughout his academic career — will come in handy at S&T.

S&T's job is to equip "worldly engineers and scientists to articulate their approach to solving the ever-morecomplicated global challenges and convince social, political and economic leaders of the urgency of such solutions," Dehghani says. These include headline-grabbing subjects like climate change, renewable energy and food security as well as medical and educational challenges and the everexpanding supply chain, logistics and transportation needs of a global economy.

"If they are equipped with a good level of awareness and understanding of history, philosophy, social sciences and liberal arts, our graduates will gain significant traction in selling their ideas and will be able to provide critical contributions to these global challenges." "I consider the opportunity to serve Missouri S&T as its chancellor a personal and professional honor as I recognize the recent and historic achievements of this great institution."

# A HISTORICAL CONTEXT

Dehghani has equipped himself with an understanding of these disciplines. In addition to enjoying the Persian poetry and history of his native Iran, he reads broadly about a range of historical topics, but three in particular: the history of technology and science, medieval history — "the incredible drama of wars and belief systems of the middle ages fascinates me," he says — and the American Civil War.

Among his favorite reads: *The Discoverers*, by the late Daniel Boorstin; Barbara Tuchman's *A Distant Mirror, March of Folly* and *The Bible and the Sword* ("great oldies," he calls them), and the writings of Henry Petroski, a civil engineer and historian at Duke University. "And any book on the Civil War will make you wonder about this perversion of logic called war," he says.

Reading history is more than a great pastime for Dehghani. He also studies history because — and here he draws from another liberal arts discipline by paraphrasing philosopher George Santayana — "I do not want to be doomed to repeat it."

A fitting perspective for a chancellor who joins Missouri S&T at a significant moment in its history. The campus will soon commemorate its 150th anniversary, and Dehghani — history buff that he is — is learning as much as he can about the university's past as he leads S&T into the future.

"I consider the opportunity to serve Missouri S&T as its chancellor a personal and professional honor as I recognize the recent and historic achievements of this great institution," Dehghani says. "Missouri S&T is at an exciting point in its evolution to enhance its national standing and achieve further prominence among top public, land-grant research universities."

# ABOUT MO DEHGHAND



Chancellor **Mo Dehghani**, wife **Mina** and son **Devon** prepare to lead the 2019 Celebration of Nations parade in Rolla, Mo. Over 80 countries were represented, celebrating the vibrant cultural diversity on campus and in the community. **BORN** 1955 in Tehran, Iran

**MARRIED TO** Dr. Mina (Saffari) Dehghani, a pharmacist and pharmacologist

**ONE SON**, Devon, age 13

**ONE DOG** (a Brittany spaniel named Ginger) and **TWO CATS** (an orange and white tabby named Masghati after the chancellor's favorite childhood dessert, and Asal, which means honey.)

**HOBBIES**: Flying

(licensed pilot), fly fishing, reading



EDUCATION: Louisiana State University, mechanical engineering (B.S. 1980, M.S. 1982, Ph.D. 1987)

POSTDOCTORAL EXPERIENCE: Massachusetts Institute of Technology (1988)

CAREER EXPERIENCE: Ohio University (1987–1996); Lawrence Livermore National Laboratory (1996–2008); Johns Hopkins University (2008–2013); Stevens Institute of Technology (2013–2019)

#### PROFESSIONAL AFFILIATIONS:

International Council on Systems Engineering; American Society of Mechanical Engineering; American Society for Engineering Education; Project Management Institute

# LEARNING BY LEADING By Sarah Potter, sarah, potter@mst.edu

issouri S&T students leave the university with more than a degree. They gain invaluable experience in leadership by bringing people together to solve issues on campus. Here's a look at what some organization presidents tell us they learned about leadership at S&T.

#### Q: What does it mean to be an effective leader?

**Alyssa Goldkamp**: To be an effective leader, you need to be part of the team and to lead by example. One thing I have learned over my three years at Missouri S&T is to lead with a big heart and a strong head on your shoulders.

**Ketul Patel**: Being an effective leader is leading from the front. You have to be true to your organization and its goals and make the best decisions for it. Being a good leader is about empowering the team and communicating its goals.

**Allegra Kerns**: Being an effective leader means identifying the strengths and weaknesses of individuals within a team and creating an atmosphere where those strengths can thrive and those weaknesses can be improved upon.

"Being an effective leader means identifying the strengths and weaknesses of individuals within a team and creating an atmosphere where those strengths can thrive and those weaknesses can be improved upon."

Allegra Kerns, president of the Association for Black Students, a senior in biological sciences from Columbia, Mo.



"Missouri S&T has not only provided me with countless opportunities to face larger issues and receive larger responsibilities, it also gave me a strong platform to grow outside of S&T and seek opportunities in the professional world."

Jonathan Thomas, president of the S&T Interfraternity Council (IFC) and a senior in aerospace engineering and mechanical engineering from Columbia, Mo.

#### Q: Have you ever had to rally your organization in the past through difficult projects/tasks? If so, how did you do it?

Aaron Harmon: As an organization that represents a broad group of marginalized identities, we are often affected by outside events related to experiences unique to these identities. Because of this, I most often find myself working with the group to foster an inclusive and supportive community, within the organization and throughout our campus.

Jonathan Thomas: I believe through difficult projects and tasks, a shared vision and clear jobs are most important. For a team to be effective at problem solving, everyone must know what the problem is and what its solution is. A team member then needs to know what he or she is responsible for to reach that solution.

**Goldkamp**: Being Panhellenic Council president entails dealing with difficult tasks and projects all the time. This past semester, the Greek community was faced with a financial challenge that impacted all of Greek life. My way of dealing with this was to bring the presidents of the sororities and the community together to have a safe space to discuss and develop solutions to the problem. We formed a counter offer and worked together to find a compromise in the decisions being made. I have learned that communication between all parties is the most valuable way to find solutions to a problem.



# Q: What is one characteristic that you believe every leader should possess and why is it critical?

Thomas: Humility. A great leader should know they aren't the smartest person in the room. The leader's job should be to use his team members' skills effectively to the advantage of the team. This means being able to lean on the team for ways to solve a problem or perform a task.

**Kerns:** Every leader should possess the ability to listen and observe. I think this is critical for anyone wanting to work with people because it allows you to be more compassionate and better informed on the context of your conversations.

Harmon: Compassion. Compassion lets us accept an individual's shortcomings and cherish their strengths. When things are not going well, it's easy to start placing blame on others, but in the end, this doesn't progress the leader or the team toward the common goal. Through compassion and understanding, a leader can start to unpack why things are not going well and readjust the plan moving forward, keeping the team in mind.



"Through compassion and understanding, a leader can start to unpack why things are not going well and readjust the plan moving forward, keeping the team in mind."

**Aaron Harmon**, CpE'18, president of Spectrum — a campus organization for LGBTQ students and their allies — and a Ph.D. student in computer engineering from Saint Charles, Mo.



# Q: What are you doing to ensure you continue to grow as a leader? How is S&T supporting you?

**Goldkamp**: I seek opportunities to network and to grow my organization. S&T has given me resources to meet the university's senior leadership along with outside resources. They take time out of their day to listen to students and push their ideas forward.

Kerns: I try to give myself as many opportunities to learn as much as I possibly can. S&T supports a strong group of student-led organizations and an active studentinvolvement program.

Thomas: This past semester, I was appointed to the National Board of Directors for Sigma Nu Fraternity. I believe the best way to grow is by learning on the job. Missouri S&T has not only provided me with countless opportunities to face larger issues and receive larger responsibilities, it also gave me a strong platform to grow outside of S&T and seek opportunities in the professional world.

# Q: How have your personal experiences helped you to become a good leader?

Harmon: My experience with the residential life department and associate organizations, Residence Hall Association (RHA) and National Residence Hall Honorary (NRHH), has helped me to become a better leader. This experience has taught me how to better lead others and how to put my leadership philosophy into words. I have learned how to foster leadership in others and better embrace aspects of other philosophies that differ from mine. "Having leadership be open to listening to new ideas has made S&T an amazing place for me to grow into myself, not only as a leader, but also as a person."

Alyssa Goldkamp, Panhellenic Council president and a senior in chemical engineering from St. Louis

Kerns: I think being a woman of color attending predominantly white educational institutions taught me a lot about being a leader. I was often expected to speak on behalf of my race, and I quickly learned how to present myself confidently and communicate my thoughts clearly and effectively.

#### Q: What do you want the Missouri S&T leadership to know?

**Kerns**: That I am optimistic about their ability to implement changes and new policies based on what our growing and diversifying campus needs.

"We are easily the most diverse club on campus. We have members from 40-plus countries varying from freshmen to Ph.D. We are a mini world."

Ketul Patel, former president of the International Students Club and a senior in information technology from St. Louis

**Patel**: The leadership of S&T should know about International Students Club and how active we are. We are easily the most diverse club on campus. We have members from 40-plus countries varying from freshmen to Ph.D. We are a mini world.

Harmon: Student leaders want to see more of leadership. Some of the best leaders I know on our campus are the most passionate ones.

**Thomas**: That the opportunities and responsibilities they provide for students are invaluable. There are not many other places where I could participate in the conversations and meetings that I do. These opportunities have taught me an incredible amount about leadership.

**Goldkamp**: I want to tell the leadership how thankful I am for the opportunities I have been given. Having open communication between faculty and students has created a relationship that will help the community grow. Having leadership be open to listening to new ideas has made S&T an amazing place for me to grow into myself, not only as a leader, but also as a person.

# Q: How will you continue to lead when you leave S&T?

**Kerns**: By continuing my education at medical school and eventually leading a team of healthcare professionals in providing the best care possible to patients.

Harmon: When I leave S&T, I will continue to seek out and solve the complex interdisciplinary challenges that I have worked on throughout my time in industry thus far. It doesn't matter whether you are leading a team of students toward a more inclusive campus or leading a team of engineers toward solving tomorrow's biggest challenge; the fundamentals of leadership don't change.

**Patel**: I will continue to represent S&T when I leave and be a proud alumnus. ■



# **CELEBRATING** 150VEARS

150

Please join us as we honor the university's past, celebrate its present and envision its future, from October 2020 to November 2021.

# MISSOURI SET. 150

PP

Join us Homecoming weekend (Oct. 16–18, 2020) for festivities that will kick off the yearlong celebration. Be on the lookout for more details as our 150th anniversary nears.

# CALL AND SHARE YOUR STORY

As part of the university's 150th anniversary, we're asking the Miner community to tell us their fondest memories and personal anecdotes. When you're ready to add your voice to our story collector, call **833-Miner150** (833-646-3715).

Please note your call will be recorded and we will include selected stories on **150.mst.edu**.

COMMEMORATIVE HISTORY BOOK

Larry Gragg, Curators' Distinguished Teaching Professor emeritus of history and political science, tells the Missouri S&T story from its founding in 1870 to today in a commemorative history book that will be available by Homecoming 2020. (Read a summary and see details on page 35.) Pre-order the book at a discount now for delivery in October 2020.



We're grateful to our 150th Advisory Committee for guiding the celebration planning. The committee includes alumni, faculty, staff and community members. Recipients of mini-grants to help fund projects and activities that meet the goals of celebrating this milestone anniversary will be announced in December.







In the 1870s, Rolla seemed an unlikely location for a new college. There were only about 1,400 residents in a community with more saloons than houses of worship. There were no paved streets, sewers or water mains. To visitors, there seemed to be as many dogs, hogs, horses, ducks and geese as humans walking the dusty streets.

Yet, Rolla became the home of the University of Missouri School of Mines and Metallurgy in 1871. Over the following 150 years, the university evolved from a "country academy" to a respected technological research university. Despite two name changes and the growth of academic programming beyond mining and metallurgical engineering, graduates continue to identify with their school's heritage and proudly call themselves Miners.

Forged in Gold: The Story of Missouri S&T's First 150 Years is fundamentally the story of the campus's commitment to its land grant mission. Most of the students were Missourians of modest means. They were the young people who U.S. Rep. Justin S. Morrill of Vermont had in mind when he promoted the Land Grant College Act of 1862. Morrill was a passionate advocate of providing access to higher education for the "working classes," specifically in the study of "agriculture and the mechanic arts."

The best of the staff and faculty always knew why they were at MSM, UMR and S&T. Whether they worked in an academic department, in the administration, in student affairs or in physical facilities, their job was to help students be successful. They not only understood that mandate, they embraced it.

Forged in Gold is also about how the campus's rigorous curriculum and the necessity of many to have part-time jobs left precious little time for relaxation, reflection and recreation. However, regardless of the era, Miner students created a world of social organizations, fraternities and sororities,



... *Forged in Gold* details some of the campus scandals and pranks, influential faculty and staff, the roles Miners played in America's wars, athletics, and the Miners who have had an impact on the world.

department clubs, and intramural sports that afforded breaks, however brief, from their studies.

One of the biggest challenges for the Miner campus was how to make it more welcoming to underrepresented groups. *Forged in Gold* describes how difficult it was for African Americans, women and the LGBTQ (lesbian, gay, bisexual, transgender, and queer or questioning) community to become accepted as Miners.

Along the way, *Forged in Gold* details some of the campus scandals and pranks, influential faculty and staff, the roles Miners played in America's wars, athletics, and the Miners who have had an impact on the world.



#### Be among the first to dig deep into the university's history and save 20 percent off your purchase.

Get \$10 off the regular retail price of \$49.99 when you pre-order the comprehensive coffee-table style history book. *Forged in Gold* won't be in stores until October 2020 but when you pre-order, you'll be among the first to receive it and will also be entered to win prizes.

#### Go to thesandtstore.com to pre-order your copy today!





# ALUMNI ASSOCIATION TO EXPAND EVENT SPACE

Alumni and friends who attend events at Hasselmann Alumni House will soon have more space to socialize outside — and more parking near the building.

In September, the Miner Alumni Association closed on the purchase of the property at 1104 N. Pine St. — Hasselmann House's next-door neighbor. In the short term, the association plans to raze the structure on the property and create additional parking spaces for visitors. Future plans include several options for Miner Alumni Association expansion.

The association is taking bids for demolition and is working with officials from the city of Rolla on zoning. After that, they will begin soliciting plans for the garden expansion.

# COMPLETE OUR READER SURVEY

Please take a few moments to complete this 15-question survey to help *Missouri S&T Magazine* continue to improve with every issue.



> magazine.mst.edu/survey19

# LET YOUR VOICE **Beheard**

Your opinion matters to the Miner Alumni Association, which represents nearly 60,000 alumni. If you have comments, questions or ideas, please share them with your elected representatives listed below.

#### PRESIDENT Stephen W. Rector '72

PRESIDENT-ELECT Michael McEvilly '80

#### VICE PRESIDENTS

Daniel Bailey '03 Ernest K. Banks '81 Kurt Haslag '07 Delores Hinkle '75 Ronald W. Jagels '86 Christopher Ramsay '83

SECRETARY William Brune '73

TREASURER W. Keith Wedge '70

#### DIRECTORS-AT-LARGE

Robert "R.J." Agee '03 Tessa C. Baughman '04 Brian Bradley '86 Jeremy Bylo '14 Daniel Dziedzic '83 Michael Emanuel '87

#### AREA DIRECTORS

Area 1: Rhonda Pautler '87 Area 2: Joshua Hoffman '07 Area 3: Kathryn Crinnian '13 Area 4: John Burgess '85 Area 5: John Stutsman '77 Area 6: Gary Hines '95 Area 7: Tamra Scheiblhofer '95 Area 8: Richard Berning '69 Area 9: Richard Szevery '02

#### Areas 10–18.

Kenneth Bandelier '97 Julie Hawkins '06 Paul Hirtz '95 Rachel Jung '09 Ted Kelly '77 William McAllister III '76 Carl Schmitz '10 Robert Telker '82 Stephanie Vogt '03 Area 19: Jennifer Marshall '96 Area 20: Michael Party '78 Area 21: Hugh Cole '72 Area 22: Ian Lee '14 Area 23: Dennis Leitterman '76 Area 24: David W. Heineck '79

#### PAST PRESIDENTS

Robert D. Bay '49 Robert T. Berry '72 James E. Bertelsmeyer '66 Robert M. Brackbill '42 Matteo A. Coco '66 John Eash '79 Richard W. Eimer Jr. '71 Helene Hardy Pierce '83 Larry L. Hendren '73 Zebulun Nash '72 James R. Patterson '54 Darlene (Meloy) Ramsay '84 Perrin R. Roller '80 Susan Hadley Rothschild '74 Gerald L. Stevenson '59

To contact your representatives, go to **mineralumni.com.** 

# **CLASS** NOTES

Petroleum Co., Gulf Oil

years with Farmland

authored 35 technical

wrote professionally

The Holidays live in

Overland Park, Kan.,

Kurt Keller, CE, was

mentioned in a June

article about the

history of St. Louis'

Poplar Street Bridge.

Keller became one of

the primary resident

project after joining the

Missouri Department of

Transportation in 1966.

engineers on the

2019 St. Louis Magazine

and have three children.

Industries. He

publications and

for McGraw Hill.

1957

Corp., and the Nofsinger Co., and then spent 30

# SHARE A CLASS NOTE

Let your classmates know what you've been doing. Send us information about your professional and personal accomplishments — career changes or promotions, weddings, births and other news — and we will publish it in an upcoming issue. Email your update and a high-resolution photo (if available) to **alumni@mst.edu**. Deadline:

Summer issue — March 15

# PUBLICATION POLICY

We publish information submitted by alumni, news submitted by employers of alumni, and selected news stories that mention alumni and their affiliation with Missouri S&T. We are happy to announce weddings, births, promotions and other special occasions after they have occurred. We will print addresses if specifically requested to do so by the alumnus/alumna submitting the note and will mention a spouse's name if it is specifically included in the submission. We reserve the right to edit alumni notes and will use submitted printquality photos as space permits. Due to the production time required for each issue, submissions may take up to six months to appear. Your patience is appreciated.

\_\_\_\_\_

# 1951

Gerry Bellis, CE: "Mary, my beloved wife for 69 years, died on July 2, 2019. She was the cashier at MSM while I was there."

# 1954

Bob Patterson, CE: "Martha and I are still doing well."

# 1955

Allan Holiday, ChE, worked for Phillips Petroleum Co. before joining the U.S. Navy, where he attended the U.S. Naval Intelligence School. He was deployed aboard the USS *Princeton* in the Far East and married his wife, Lyn, while in the Navy. After discharge, he worked for Phillips

# 1958

Robert Sucher, ChE: "I'm enjoying my 21st year in the Ozarks, living in Osage Beach, Mo. I still follow Miner swimming as well as my granddaughter, who swam for Georgia Tech. Well, old swimmers never die, they just float away."

# 1960

#### Paul Medley, EE:

"Betty and I remain in east Tennessee in Sevier County near the Smoky Mountains and Dollywood. I enjoy the area, riding two wheels nearly 400,000 miles. I'm fortunate to enjoy good health and our first greatgranddaughter, Adalynn."

# 1961

James Lester, ME: "My wife and best friend of 60 years passed away Oct. 21, 2018."

#### Morris Worley,

MS MinE: "After the death of my wife, Sue, in January 2018, I began a transition that has led me to My Father's Retirement Ranch in Wickenburg, Ariz. I have not retired from mining, however. I continue to manage the Arizona Zeolite Operations for Honeywell UOP. We have two active pits near Bowie, Ariz., and an inactive site near Kingman. Once a Miner, always a Miner."

1962

Baldev K. Bhatia, MS ChE: "My grandson,

### DIGGING INTO MISSOURI'S GEOLOGIC PAST

**Arthur Hebrank**, GGph'67, was a guest presenter in the Summer Speaker Series at the Fredericktown branch of the Ozark Regional Library. Hebrank has worked as a site administrator at the Missouri Mines State Historic Site in Park Hills, Mo., for the past 26 years. Prior to joining the site, he was a geologist at the Missouri Geological Survey in Rolla for 26 years.

Hebrank's program, "Missouri's Oldest History: Her Geologic History," is an overview of Missouri's geology that includes a chronological review of the seven geologic events that generated the rocks and relationships seen today in the Show-Me State.

Hebrank has worked on numerous publications and books, including 10 field guides for the Geological Society of America Centennial Guidebook.



# CAMPBELL SETS BIG TARGETS AS NEW MODOT DISTRICT ENGINEER

Steve Campbell, CE'93, was named district engineer for the Missouri Department of Transportation's Southwest District. Campbell has worked for MoDOT since 1993, and his previous appointment was the district's construction and materials engineer. He now oversees a district that covers 21 counties and two metropolitan areas, Joplin and Springfield.

Campbell's current large projects include an interstate connection to Arkansas, commonly known as the Bella Vista Bypass, and tackling the number of bridges that are in need of repair — several along Interstate 44 between Jasper County and Lawrence County.





# MISSOURI GOVERNOR HONORS AKERS

Missouri Gov. Mike Parson presented the Missouri National Guard Meritorious Service Medal Ribbon to **Thomas Akers**, AMath'73, MS AMath'75, a retired U.S. Air Force colonel, retired instructor of mathematics and statistics at S&T, and retired NASA astronaut. The award is given to present and former guard members who perform valorous or meritorious service in support of the state.

Akers taught and served as principal of Eminence (Mo.) High School before joining the Air Force in 1979. He was selected into the NASA astronaut training program in 1987. He later served as commander of the Air Force ROTC program at Missouri S&T.

A veteran of four space flights, Akers has logged more than 29 hours of spacewalking experience. His shuttle missions include the December 1993 mission that successfully grappled and repaired the Hubble Space Telescope.

#### Andrew Dunn, AE'19,

graduated in 2019 from Missouri S&T in aerospace engineering. I am proud of him. My daughter, **Anita Bhatia**, Math'87, and her husband, **James Dunn**, EMgt'86, both graduated from Missouri S&T. I am proud of this legacy!"

# 1964

Gary Dyhouse, CE,

MS CE'66, MS EMgt'74: "Diane and I celebrated our 50th anniversary in September 2018 with a dinner for 40 friends and relatives. We did a Trans-Atlantic cruise this year from Florida to Great Britain and are planning to take the Rocky Mountaineer train in Western Canada next year. I have been retired from the Corps of Engineers, St. Louis District, for almost 20 years, but still do occasional consulting and trial work. I spend much time reading and playing computer games, cards and golf. I got my first holein-one last year."

# 1965

Nolan Sullivan, MS Tch Math: "I lost my

Tch Math: "I lost my wife April 1, 2016, and my older son on April 24, 2018."

# 1966

David L. Smith, ME, was appointed to the Missouri Board of Architects, Professional Engineers, Professional Land Surveyors and Professional Landscape Architects.

# 1971

Raymond Prenger, ChE, published a leadership development program for American industry titled *No Limit Leader*, which is available at Amazon.com.

# 1975

Bob Wonish, ME, was featured in an April 2019 Stockwatch article. He is senior vice president of engineering at Petrodome Energy.

# 1976

Gary Terschluse, MS CE, was featured in a June 2019 Washington Missourian article about Washington Engineering & Architecture, which he co-founded.

# 1979

#### Lewis Wayne Isaacs,

MinE, was appointed to the board of directors of Drummond Co. Inc.

# 1980

Max A. Guinn, ME, was appointed to the Titan International board of directors.

Scott Wehner, GeoE: "After 37 years in the oil and gas industry, I retired at the young age of 59 a couple of years ago. Business was getting in the way of my hobbies. We moved back to Missouri from Texas, but to the Kansas City area instead of our Ozark ranch. I have a plane and routinely jaunt between locations. Traci and I have two sons and one granddaughter. I do some consulting when I find it interesting. Anyone passing through, please look us up."

#### Keith Wesselschmidt, CE, was named chief financial officer for O'Fallon Brewery.

# 1982

#### Janet Kavandi,

MS Chem, was named to the Embry-Riddle Aeronautical University Board of Trustees. She reflected on her career as a NASA astronaut for a *Joplin Globe* article about the 50th anniversary of the moon landing.



Paul Stricker, LSci, received the 2019 Dr. Charles Bertram Alumni Award of Distinction from the Great Lakes Valley Conference.

# 1983

#### Mark Grossenbacher,

CE, joined HNTB Corp's St. Louis office as practice leader. He previously worked for HNTB from 2001 to 2007.

# 1984

#### Dwight Viehland,

CerE, Chem, MS CerE'87, professor of materials science and engineering at Virginia Tech, was reappointed as the Jack E. Cowling Professor of Engineering. He has held the Cowling Professorship since 2014.

# 1985

#### Mike Himmelberg,

EMgt, vice president of NAPA Auto Tire and Parts, was featured in a July 2019 *Southeast Missourian* article about the impact of Procter & Gamble on the Cape Girardeau, Mo., area. Himmelberg began his career with Procter & Gamble.

# 1986

#### Elaine Raterman,

EE, MS EE'92, was promoted to IT manager for Bitrode Corp.

#### David Salyers,

GeoE, MS GeoE, commissioner of the Tennessee Department of Environment and Conservation, was the commencement speaker at Bethel University in McKenzie, Ky.

# 1987

Keith Morton, EE, was named vice president of worldwide sales for proteanTecs.

# 1988

Jeff Jackson, ME, joined Navigant as a managing director supporting payer solution development and account growth.

#### Ramona Tumblin-

Rucker, PetE, was named director of design/build and construction management for M Property Services.

# 1989

Michael Montgomery, CE, was promoted to senior counsel and director of regulatory affairs for Doe Run.

# 1990

Ryne Raffaelle, PhD Phys, was appointed vice president for research and associate provost at Rochester Institute of Technology.



Incoming USAES Commandant Col. Mark Quander (left) takes the colors from Maj. Gen. Donna Martin, MSCoE commanding general, during a ceremony held July 2 on MSCoE Plaza. (Photo Credit: Ms. Dawn M. Arden, Fort Leonard Wood)

#### QUANDER TAKES COMMAND OF U.S. ARMY ENGINEER SCHOOL

Col. **Mark Quander**, MS EMgt'00, recently became the 98th commandant of the U.S. Army Engineer School at Fort Leonard Wood, Mo. Quander was also promoted to brigadier general. In a press release announcing the promotion, Quander said he looked forward to continuing the unit's traditions and moving forward on the path set by his predecessor.

Quander was previously commander and division engineer of the U.S. Army Corps of Engineers' Transatlantic Division in Winchester, Va. He earned a bachelor of science degree in civil engineering from the U.S. Military Academy at West Point in 1995. He also holds master's degrees from Georgetown University in public policy and from the U.S. Army War College in strategic studies.

#### Bob Rickard, EE: "I spent 27 years in

the U.S. Air Force and U.S. Air Force Reserves flying F-16s and F-22s. In my military retired life, I lead two companies, one of which, WigL, is the license authority for a utility patent concerning far-field wireless power transmission."



Michael Thomas, EE, Harness Dickey

principal, was recognized as one of the nation's top attorneys in the BTI Client Service All-Stars 2019 report. All-Stars are nominated exclusively by their clients for service, thought leadership and legal skill. Thomas is one of 23 attorneys chosen for the award.



Colin Young, GeoE, was named senior project manager and project lead for Freese

and Nichols Inc.'s dam-related work across Oklahoma.

# 1991

LaWanda Jones, CE, was named to the 2019 Missouri S&T Women's Hall of Fame by S&T's student diversity initiatives office. Awardees are recognized because of their success, influence and ability to inspire and impact students, the S&T community and beyond.

#### Judy Wagner, CE,

retired area engineer for the Missouri Department of Transportation, was



Col. Eric Noe (right) returns the Army Corps of Engineers flag to Craig Pierce, Deputy District Engineer for programs and project management of the Corps' Little Rock District, during the district change of command ceremony. Noe assumed command from the outgoing commander Col. Robert Dixon. The event was held July 9 at the Witt Stephens Jr. Central Arkansas Nature Center in downtown Little Rock. (Photo courtesy of the Army Corps of Engineers)

#### NOE ASSUMES COMMAND OF CORPS' LITTLE ROCK DISTRICT

Col. **Eric M. Noe**, MS EMgt'01, assumed command of the U.S. Army Corps of Engineers Little Rock district in Arkansas in July. The Little Rock district is responsible for a \$500 million program that includes civil works, military construction, Army and Air Force Medical Service support, environmental stewardship, emergency management, and support to other government agencies throughout Arkansas, southern Missouri and across the nation.

Noe came to the Little Rock district from the National Military Command Center in Washington, D.C., where he served on the Joint Staff as a deputy director of operations and presidential strike advisor. He earned a bachelor of science degree in environmental engineering from the U.S. Military Academy at West Point in 1996. He also holds a master's degree in national resource strategy from the Dwight D. Eisenhower School for National Security and Resource Strategy. Noe has deployed to Macedonia, Kosovo and Iraq in support of operational and combat missions.

named public works director for the city of Arnold, Mo.

# 1992

Don Mayhew, CE,

Missouri State Representative of the 121st district, was named floor whip on the Majority Whip Team in the Missouri House.

## 1993

Beth Dare, CE, database and stewardship manager for Phelps Health Foundation in Rolla, Mo., received a scholarship to attend bbcon 2019 in Nashville, an annual conference for nonprofit software company Blackbaud.

#### Bill Jolly, ChE, former Miner basketball player, was inducted into the Mid-America Intercollegiate Athletics Association's Hall of Fame as part of its 2019 class.

### 1994

Robin Lasey, Chem, associate professor of chemistry at Arkansas Tech University, received the 2019 Arkansas Tech Faculty Award of Excellence in the service category.

## 1995

#### Marsha Rana Wayman,

EMgt, interim executive director for Phelps Health Foundation, was awarded the Elizabeth Luna Mourning Fund to attend the Association for Healthcare Philanthropy Madison Institute.

## 1996

Craig Magerkurth, MS EMgt, was named senior associate on the project management team for Sensory Interactive.

**Ozgur Tort**, MS EMgt, CEO of Migros business development for the aviation and aerospace market.

# 1998

Jason Kelly, MS EMgt, a colonel with the U.S. Army Corps of Engineers serving as commander in the Transatlantic Afghanistan district, was honored with the Professional Achievement in Government Award.

#### Keith Mandachit,

EE, an engineering manager with Huffman Engineering Inc., is now a licensed professional engineer in Nebraska.

1999

David Canady, EE, deputy division chief for Operations, Directorate of Cyberspace and Information Dominance, was a featured panelist for the Potomac Officers Club's 2019 Cybersecurity Summit. Canady is a lieutenant colonel in the U.S. Air Force.

## 2001

Ticaret, was named to

the board of directors

Forum. He chairs

the retailer college.

Tort is also co-chair

Association and a

of the Food Retailers

member of the board of

the Turkish Federation

and Retailers in Turkey.

of Shopping Centers

Jason Kirk, MS EMgt,

retired as a colonel in

Jacksonville district of

the U.S. Army Corps

of Engineers. He now

works for The Haskell

Co. as director of

service leading the

the U.S. Army following

1997

of the Consumer Goods

#### Robert Hilliard,

MS EMgt, a colonel in the U.S. Army Corps of Engineers, assumed the duties of commander of the Vicksburg Engineer District in June 2019.

Patrick Schlotzhauer, ME, chief mechanicalprocess engineer and solution lead for Black & Veatch's water business, was one of three industry experts to present a webinar on smart water.

#### Timothy Vail,

MS EnvE, a colonel in the U.S. Army Corps of Engineers, took command of the Galveston Engineer District in July 2019. He replaced Col. Lars Zetterstrom, MS CE'99.

# 2002

William Hannan Jr.,

MS EMgt, a colonel in the U.S. Army Corps of Engineers, took command of the Kansas City District in July 2019.

Karen Hogan, EMgt, a member of Turner Construction Co. for 16 years, is now leading the New York-based builder's Kansas City office.

# 2004

Nathan Branham,

CE, MS CE'06, was promoted to program and department manager for Burns & McDonnell's Global Facilities Group in Kansas City.

# 2006

#### Darryl Piasecki,

MS SysE, a partner with McKinsey & Co. since 2008, now leads the company's new St. Louis office.

Todd Shelton, ME, who works for NAPA Auto Tire and Parts in Cape Girardeau, Mo., was featured in a July 2019 *Southeast Missourian* article about the impact of Procter & Gamble on the Cape Girardeau area. Shelton worked at Procter & Gamble for 10 years.

# 2007

Brandt Genz, CE, and his wife, Nicole, EMgt'07, MS SysE'11, expanded their handmade furniture business, RF Home Co. The new location in Kirkwood, Mo.,



# BROOKS GIVEN TRYOUT WITH CLEVELAND BROWNS

**Bo Brooks**, PetE'19, who earned All-America honors for the Miner football team as a linebacker during the 2018 season, was given the opportunity to participate in two rookie tryout camps during May and June with teams in the National Football League.

Brooks took part in the rookie camp held by the Cleveland Browns. He was also invited to train with the Cincinnati Bengals, but was unable to participate due to an injury sustained during training with the Browns.

Brooks earned three All-America awards and Google Cloud Academic All-America honors. He was a first-team all-conference selection and was the Great Lakes Valley Conference Scholar-Athlete of the Year. He is the second player in school history with at least 20 stops behind the line of scrimmage and 10 sacks in the same season and the fourth player in school history to earn All-America and Academic All-America honors in the same season. He was nominated for the Cliff Harris Award, which is given to the top small-college defensive player in the nation.



# SCHARF NAMED TO PROFESSIONAL INDOOR SOCCER TEAM

The St. Louis Ambush, a professional indoor soccer team, signed **Mike Scharf**, MBA'17, to a two-year contract as a defender on May 14. His college career was split between Rhodes College, Maryville University in St. Louis and S&T.

Scharf's Major Arena Soccer League career began with the Cedar Rapids Rampage in 2017. Scharf started the 2018–19 season with the Tacoma Stars, appearing in two games before he was traded to the Ambush, his hometown team, in February 2019.

"It's great to have the opportunity to represent my hometown again," said Scharf in an announcement about his move. "I am looking forward to building on what we did last season. We have a great organization and great fans, and we are ready to push for a championship."

features furniture, clothing, home décor and other products for around 45 craftspeople who rent space in the 19,000-squarefoot building.

# 2009

**Brent Portell**, ArchE, was named operations manager for Del Rey Avocado in Vista, Calif.

## 2010

#### Alan Windhausen,

Chem, joined the Brewers Association Basics of Beer Quality Workshop team as quality trainer.

# 2012

#### Sean Sullivan,

ChE, is lead project engineer for process simulation at Emerson in Chesterfield, Mo.

# 2013

Kevin Creighton, BSci, serves as principal of Dent-Phelps R3 school district. He previously taught seventh- and eighth-grade science.

# 2014

#### Tejaswi Materla,

MS EMgt, PhD EMgt, was awarded the Dell'Anna Doctoral **Dissertation Prize** from the International Academy for Quality for her dissertation, "Analyzing factors affecting patient satisfaction using the Kano model." She joined the Penn State Abington faculty in fall 2019 as a tenure-track assistant professor of management.

# FUTURE MINERS



 Jarred Crouch, ME'01, MS ME'03, and his wife, Jessica (Marshall) Crouch, EMgt'99, had a girl, Juliette Marie, on Sept. 19, 2018. She joins big brother Jonah, 5.

 Chester J. Grohs IV, ME'08, and his wife, Elizabeth (Politte) Grohs, BSci'09, had a girl, Hannah Evelyn, on Oct. 3, 2018.

3. Zane Voss, MetE'07, MS EMgt'17, and his wife, Anna, had a boy, Zeke Timothy, on April 5, 2018.

# 2015

#### Keelin Benedicto,

EMgt, joined Sedia Systems as a project manager to support the company's sales in its Chicago headquarters.

A 2014 research project by **Nathan Rohrbaugh**, GeoE, MS GeoE, was featured in a May 2019 "Answer Man" article in the Springfield News-Leader. Readers wrote in to ask why there were white globes stuck in the ground along Ozark Mountain Highroad where it ends at Highway 76. The globes, white Styrofoam balls attached to rebar, were part of a study using LIDAR to study erosion concerns.

#### Gregory M. Stipes,

EMgt, a U.S. Air Force airman, graduated from basic military training at Joint Base San Antonio-Lackland in San Antonio, Texas.

# 2018

**Caleb Strickland**, ArchE, joined his family's business, Strickland Engineering, in Jackson, Mo., making the company a threegeneration company.

# 2019

Anna Ramirez, PetE, spoke about the value of International Association of Drilling Contractors (IADC) student chapter involvement and offered insights into millennials' perspectives, needs and ambitions during the IADC World Drilling Conference in Milan in June 2019.

# **NINERS** REMEMBERED

Convair Aircraft and

EaglePicher before

earning a master's

degree from MIT. Mr.

Cole joined Reynolds

Metals in 1952 and held

positions of increasing

elected vice president

responsibility until

1971, when he was

and member of the

board of directors. He then served as

head of the primary

Reynolds Headquarters,

metals division at

retiring in 1980. Mr.

Cole was a member

of the Missouri S&T

Academy of Mines

and Metallurgy and

Golden Shillelagh.

the Order of the

(March 6, 2019)

of deaths that have occurred more than two years before the date of publication will not be published unless a special request is made by a family member. Yearbook photos, if available, will be included for alumni when families submit obituary information. Due to the production time required for each issue, submissions may take up to six months to appear. Your patience is appreciated.

Missouri S&T Magazine will announce deaths when information is submitted by an immediate

family member or published in a newspaper obituary. Notification

### 1942 Walter E. Doelling,

MetE (April 26, 2019)



Richard E. Cole, MetE, attended South Dakota School of Mines before enlisting in the U.S. Navy. After discharge, he completed his degree in Rolla. He held positions at

# 1948

**John V. Leahy,** EE (May 8, 2019)

**John W. Lewis Jr.,** CerE (May 25, 2019)

**Robert C. Pletz**, ME (Jan. 3, 2019)

## 1949

**James D. Blankenship**, EE (June 4, 2019)

Gordon E. Raymer, CE (April 26, 2019)

Norbert Schalk, EE (May 25, 2018)

Otto L. VanMaerssen, ChE (May 21, 2019)

Charles K. Wissel, ME (May 24, 2019)

**Louis H. Carl**, EE (May 19, 2019)

1950

**Donald P. Dampf**, PetE (June 24, 2019)

Robert H. Erskine, MetE (May 9, 2019)

**Arthur G. Gore**, CE (Jan. 7, 2019)

**Bruce F. Miller,** CE (Feb. 28, 2019)

William F. Ricketts, MetE (April 24, 2019)

**Jerry D. Ryan**, ChE (April 12, 2019)

**R. Milton Terry**, CE (Jan. 10, 2019)

Arthur E. Tuegel, ME (Dec. 14, 2018) 1951

William E. Chiles, ME (Feb. 21, 2019)



Neal B. Dowling, EE, was on the Miner track and field team and was a member of Triangle fraternity, Blue Key, Student Council and Army ROTC. He was an active member of the Miner Alumni Association. (March 27, 2019)



Robert J. Morris, MetE, was a member of Lambda Chi Alpha fraternity, Blue Key and Tau Beta Pi. He served four years in the U.S. Army, finishing as first lieutenant in the 11th Airborne Division. Mr. Morris later worked as a metallurgist for several companies, including a 12-year stint with International Nickel Co. (March 25, 2019)

Martin S. Oudenhoven,

MinE, MS MinE'62 (June 6, 2019)

Richard A. Thurston, ChE (Nov. 2, 2018)



**Cornelius H. Buersmeyer**, ChE (March 13, 2019)

**Eugene J. Laytham**, CE (May 20, 2019)



### DR. DAVID RAY CUNNINGHAM

Dr. **David Ray Cunningham**, professor emeritus of electrical engineering, died July 24, 2019. He joined the S&T faculty in 1969 and for the next 30 years taught electrical courses. During his tenure, he co-authored a textbook, *Circuit Analysis*, now in its second edition, which continues to be used in the United States and internationally. While at S&T, he served as advisor to Eta Kappa Nu, the national electrical engineering honorary fraternity. His awards include being named Advisor of the Year and earning several faculty teaching awards. Dr. Cunningham earned a bachelor of science degree and a Ph.D., both in electrical engineering, from Oklahoma State University, and a master of science degree in electrical engineering from the University of Idaho. Before joining academia, he was employed by General Electric, first at the Hanford Nuclear Reservation and later in Syracuse, N.Y. There, he was instrumental in developing the first imaging machine, which led to the development of Xerox copiers. Early in his university career he worked during summer breaks for Conoco in Ponca City, Okla. He received an honorable discharge from his service in the National Guard Reserves (Oklahoma) from 1954 to 1956, where he rose to the rank of sergeant.



PetE, was a member

of Theta Xi fraternity.

He had an extensive

industry as owner of

McBrayer Oil Corp. Mr.

McBrayer served as a

reserve deputy sheriff

Rockport, Texas, and

was named reserve

officer of the year by

the Aransas County

Earl E. Pape, PetE,

MS PetE'58, was a

member of Kappa

Alpha fraternity. He

from Illinois Power

30 years of service.

General Delegation

of Independents. He

worked as an engineer

for Martin-Marietta and

estimating department

retired as head of the

at Lockheed Martin

Corp. (April 6, 2019)

(March 30, 2019)

Co. in 1989 following

in Longview, Texas, and

career in the oil and gas

1955 Richard L. Kaiser, EE (May 30, 2019)

# 956

Kenneth W. Enslow, ME (April 11, 2019)

Gilbert G. Jurenka, PetE (June 4, 2019)





Sheriff's Department in 2004. (March 19, 2019) Frederick J. Dietrich, EE, was a member of Delta Sigma Phi fraternity, Blue Key, the Newman Center, choir and orchestra, Radio Club, and Tau Beta Pi. After earning a master's degree from Purdue and a Ph.D. from Ohio State University, Dr. Dietrich joined Ford Aerospace where he worked in served as a corporal in the satellite division. the U.S. Army Corps of He later worked at Engineers in Korea from Space Systems Loral 1952 to 1954 and retired before retiring in 2001. For many years, Dr. Dietrich owned F.D. Engineering consulting firm. He held several Donald G. Shaner, ME, patents related to was a member of the antennas and antenna

1958

Joseph R. Aid, ChE, MS ChE'60 (April 14, 2019)

design. (Jan. 1, 2019)

Ronald G. Alberter, EE (April 5, 2019)

1954

Donald L. Tooloose, ChE (Jan. 19, 2019)

# 1959



J. Gerald Hofer, ChE, was a member of Phi Kappa Theta fraternity, Blue Key, Independents, Newman Center, Alpha Chi Sigma, band and Army ROTC and worked on the *Rollamo* staff. He retired from Laclede Gas Co. after 37 years of service. (Feb. 26, 2019)

### 1960



MetE, MS MetE'62, PhD MetE'66, was a member of Kappa Sigma fraternity, the American Society of Metals, the American Foundry Society, Independents and the Honors Association. He later served on the S&T Corporate Development Council. Dr. Bramfitt was a senior research consultant for Bethlehem Steel and then International Steel Group Inc. and retired as a senior metallurgical consultant from ArcelorMittal Steel in

William H. Stocklin, ME, MS ME'61 (May 24, 2019)

2014. (March 4, 2019)

Jerry D. Walker, ME (April 19, 2019)



### DAVID C. WANG

David C. Wang, MS EE'77, retired president of Boeing China, died June 2, 2019. A member of the S&T Academy of Electrical and Computer Engineering and a former member of the Chancellor's Leadership Academy, he received S&T's Award of Professional Distinction in 2009. Born in Nanping, China, he earned a bachelor of science degree in electrical engineering from Saint Louis University in 1967. He served as a manager of business development for General Electric, as well as chairman and CEO of GE China, then served as a senior counselor and vice president of Boeing China before being named president of the company in 2002. He retired in 2011.

# 1961

Billy D. Hawkins, ChE (April 19, 2019)

Jimmy C. Lemon III, EE (April 20, 2018)

James T. Odom, EE (April 5, 2019)



Joseph L. Perkins, CE, MS CE'66, was a member of the Independents, the American Society of Civil Engineers and the Society of American Military Engineers. He was commissioned in the U.S. Army and served in Vietnam, Korea and the Dominican Republic,

where he earned two Legion of Merit awards and two Bronze Stars among numerous other medals. After retiring from the Army, Mr. Perkins worked for Frank Moolin and Associates, the Texas Department of Transportation, and the Alaska Department of Transportation and Public Facilities, and founded Perkins Consulting. (March 25, 2019)

Bruce G. Weetman, GGph (Feb. 22, 2019)





Floyd H. Hahn, CE,

was a member of the American Society of Civil Engineers, the Independents and the Residence Hall Association. He served in the U.S. Air Force during the Korean Conflict and retired from Busch Entertainment Inc. as a senior project manager in 1997. He was a member of the Order of the Golden Shillelagh. (Feb. 28, 2019)

Gerald R. Helgeson, EE (May 1, 2019)

Vijay Rastogi, MS ME (May 12, 2019)

Kenneth W. Steele, EE (April 14, 2019)

Donald L. Willyard, EE, MS EE'65 (Feb. 28, 2019)



Edmund O. Koch, MinE (April 26, 2019)



# REMEMBERING 'MR. MINER,' JERRY BAYLESS

Jerry Bayless, CE'59, MS CE'62, retired associate professor of civil engineering, died July 2, 2019, at age 81. He taught thousands of students in a career that spanned seven decades and three different names for the same university. Known by students and alumni as "Mr. MSM," "Mr. UMR" or "Mr. S&T," depending on the era, or simply as "Mr. Miner" to many, he is also remembered as a dedicated professor who was the "heart and soul" of Missouri S&T.

After earning his bachelor's degree, he joined the civil engineering faculty while pursuing a

master's degree in that discipline. He remained on the faculty and held various administrative positions until his retirement 58 years later in February 2017.

Bayless served as an assistant chair of engineering, an assistant dean of engineering and an associate dean of engineering, and in 2004, the university presented him with the Chancellor Medal in recognition of his service. Bayless was an Honorary Knight of St. Patrick, and in 2004 he was named Honorary St. Pat and parade marshal. A member of the Academy of Civil Engineers and former treasurer of the Miner Alumni Association, he was a recipient of the Alumni Merit Award and in 2011, was named to the inaugural class of Missouri S&T's Alumni of Influence. He also was a member of Lambda Chi Alpha fraternity and served as its academic advisor for many years. An avid sports fan, Bayless could often be found cheering the Missouri S&T Miners at various events.

## 1965

Thomas E. Austin III, EE (April 9, 2019)

Samuel J. LaPresta, MetE, MS EMgt'71 (May 9, 2019)

Robert F. Mitchell, EE (May 2, 2019)



Bing-Wen Jong, ChE (March 12, 2019)



John W. Mohr, EE, MS EE'67, was a member of the Independents, the Radio Club, the Newman Center, the American Society of Civil Engineers and the Institute of Electrical and Electronics Engineers. He served 30 years in the U.S. Marine Corps., retiring as a colonel. After his service, Mr. Mohr worked in business development for Northrup Grumman Corp., where he retired in 2003. (Jan. 5, 2019)



Lowell B. Patterson, CE, was a member of Chi Epsilon, Tau Beta Pi and Phi Kappa Phi. He worked for the city of Willow Springs, Mo., as the director of public works and city administrator, and retired in 2005. (April 11, 2019)

Ronald E. Reinke, ME (April 11, 2019)

**Randall L. Vest**, CE (Feb. 28, 2019)

### 1967

Robert C. Duncan, EE, was a member of Pi Kappa Alpha fraternity, Tau Beta Pi and the Institute of Electrical and Electronics Engineers. He achieved the rank of lieutenant JG in the U.S. Naval Civil Engineer Corps and then began his career as an electrical engineer. (May 21, 2019)

**Donald C. Scarpero**, Phys (March 16, 2019)

# 1968

Joseph G. Hoeg, MS EMch, PhD EMch'71 (March 10, 2019)



Michael P. O'Malley, ME, was a member of

Phi Kappa Theta, the American Society of Mechanical Engineers, the Society of Automotive Engineers, the American Institute of Chemical Engineers and the Newman Center, and worked on the staff of the Rollamo and the Missouri Miner. He worked for Olin, Trane and Sub-Zero Freezer, where he retired as operations manager in 2006. (Feb. 15, 2019)

**Chester L. Moutrie**, CSci (May 1, 2019)

## 1969

John R. Betzold, ME (March 9, 2019)

John F. McGrath, CSci, was a member of Sigma Phi Epsilon fraternity and the St. Pat's Board. He served as vice president of administration for Peoples Gas System then moved to the city of Tampa, Fla., where he served as operations improvement administrator and retired as chief information officer in 2009. (April 19, 2019)



**Jerry F. Meyers**, MS EMgt (June 11, 2019)

#### William B. Millis,

MS EMgt, earned a bachelor's degree in mechanical engineering from Auburn University and then served in the U.S. Air Force. In 1963, he joined McDonnell Aircraft Co. then moved to Phillips Petroleum where he worked for over 30 years, retiring in 1994. He is a past president of the Oklahoma Society of Professional Engineers and served on the Oklahoma Board of Registration for Professional Engineers and Land Surveyors. (April 7, 2019)

Donald Viland, MetE (Feb. 27, 2019)

# 1971

1972

**Kenneth B. Arnold,** AE (Feb. 25, 2019)

Kasi V. Bendapudi, MS CE (Feb. 17, 2019)

Michael M. Cook, EE (Dec. 3, 2017)

Robert D. Walls, MS EMgt (Jan. 18, 2018)



Lyle W. Hill, ME, was a pilot in the U.S. Air Force. Prior to retirement, he worked in nuclear power plant construction as a pipe hanger specialist for Bechtel Corp., ITT Grinnell Corp. and Wright Schuchart Harbor Co. (March 22, 2019)

Robert Al Moody, EE (May 1, 2019)

**Chester K. Vance**, ME (March 4, 2010)

Nelson Williams, MS CSci (May 2, 2019)

|974 Phillip W. Hay

**Phillip W. Hansen**, MetE (April 11, 2019)

Craig H. Ortwerth, CE (March 16, 2019)

## 1975

Raymond F. Powell, MS EMgt (June 23, 2019)

976

Michael W. McGavock, CE, MS CE'78 (March 17, 2019)

**Thomas C. Miller**, CE (May 28, 2019)

# 1978

Gary S. Miloradovich, EE (April 14, 2019)

## 1979

Kermit A. Sparks, NDD, retired mechanical trades specialistrefrigeration in the Missouri S&T physical facilities department (May 16, 2019)

Ann E. Whitty, EE, was a member of the

Independents, Tau Beta Pi, the Newman Center, Residence Hall Association, Alpha Phi Omega and Phi Kappa Phi. An emerita member of the Missouri S&T Board of Trustees, she served on the Corporate Development Council and was a member of the Order of the Golden Shillelagh. Ms. Whitty



46 BEYOND THE PUCK FALL/WINTER 2019

#### LEN KIRBERG

Len Kirberg, CE'66, died June 19, 2019. Following graduation, he began his career with McDonnell Douglas Corp., and in 1967 he joined Horner & Shifrin Inc., where he spent the next 38 years of his career. Mr. Kirberg retired as chairman, CEO and president of the company in 2004. A licensed professional engineer in Missouri and Illinois, Mr. Kirberg was active in numerous professional organizations and served as past president of the Engineers' Club of St. Louis, the St. Louis Section of the American Society of Professional Engineers, the St. Louis Chapter of the Missouri Society of Professional Engineers and the Consulting Engineers Council of Missouri. A member and past president of the Missouri S&T Academy of Civil Engineers, Mr. Kirberg was a member of the Order of the Golden Shillelagh and was an active member of the Miner Alumni Association. In 1978, he was awarded a professional development degree in engineering management, and in 1986 he received an Award of Professional Distinction in civil engineering. retired from Alcoa Inc. in 2010 as president of Alcoa Rolled Products and founded Ann Whitty Consulting. (March 2, 2019)

### 1980



Kenton L. Eiffert, EE, was a member of the Tech Engine Club and played on the Miner baseball team. He worked as a systems analyst for Shell Oil Co. and an applications analyst for Aera Energy. (Jan. 6, 2019)



James R. Hanf, EE (April 28, 2019)



Stephen E. Zeboski, GGph, was a member of Triangle fraternity and served on the Geology

and Geophysics Development Board. He was a geophysicist who partnered with several successful oil and gas exploration companies, including Maverick Resources, Black Pearl Exploration, Calico Jack Holdings, AEC Exploration of Houston, Monarch Oil and Gas, and Challenger Exploration. (May 29, 2019)

# 1983

Dean Louis Nebrig, CSci (March 15, 2019)

# 986

David Lawrence Cornell, CSci (May 27, 2019)

1995



Joseph Emanuel O'Flaherty, EMgt, was a member of the Tae Kwon Do Club as a student. The president of the St. Kitts-Nevis Trades and Labor Union, he served on the board of St. Kitts Electricity Co., was past general secretary of the St. Kitts Farmers' Cooperative Society and a past acting national secretary of the St. Kitts-Nevis Labor Party, and was a member of the St. Kitts and Nevis Association of Professional Engineers. (May 6, 2019)

# 1997

Lionel Cureau, NDD (July 13, 2018)

# 2004

Ketan Bhupendra Patel, ME (April 21, 2019)

### 2011

Craig Robert King, Bus (May 28, 2019)

# FRIENDS

Carol Babcock, wife of Daniel Babcock, professor emeritus of engineering management at Missouri S&T (May 10, 2019)

#### Pamela Brandhorst,

wife of Lynn Brandhorst, EMgt'69 (March 8, 2019) Catherine Busch, wife of the late William D. Busch, ME'42 (Jan. 15, 2018)

Carl Campbell (April 20, 2019)

Ray Derryberry (Nov. 16, 2017)

Dorrit I. "Iean"

Drallmeier, mother of James A. Drallmeier, Curators' Distinguished Teaching Professor of mechanical engineering at Missouri S&T (May 22, 2019)

**Walter Earls** (March 18, 2019)

Suzanne Alise Fairman (May 9, 2019)

**Billy F. Farrar Sr.,** (April 18, 2019)

#### Marsha Grayer,

senior secretary in civil, architectural and environmental engineering and wife of Ernest W. Grayer, PetE'83, CSci'00 (June 15, 2019)

#### Sharron Haynes,

wife of Wilson Lynn Haynes, EE'69, MS CE'74 (May 21, 2019)

#### Kathleen Heady, wife of Wendell J. Heady, EE'71 (June 19, 2019)

Daniel W. Hickey, retired Missouri S&T police officer (March 24, 2019)

Waylon Humphrey (May 12, 2019)

Caroline Rose Hunt (Nov. 13, 2018)

Natalie Caroline James (March 16, 2019)

Sheri K. (Gieselman) Kaplan, wife of Alard Kaplan, CE'72 (April 2, 2019)

**Carl Kirk** (April 12, 2019)

H. Karl Kost (March 27, 2019)

Barbara Koval, wife of Leslie R. Koval.

professor emeritus of mechanical and aerospace engineering at Missouri S&T (June 19, 2019)

#### Josephine Lambeth,

wife of the late Jennings Lambeth, ChE'41 (July 25, 2018)

Marie Loughridge (April 18, 2019)

Marjorie McClary, wife of Lee R. McClary, EE'48 (June 18, 2019)

Anne Miller (April 12, 2019)

**Cynthia Moder**, wife of Thomas R. Moder, EE'78 (May 16, 2019)

Saul Palmer, retired maintenance

staff member at Missouri S&T (June 25, 2019)

Carol Plassman, wife of John Frederick Plassman, Math'62 (April 19, 2019)

Gerry Ricketts, wife of the late William F.

Ricketts Jr., MetE'50 (April 26, 2019)

**Dwight L. Robinson** (June 17, 2019)

Barbara Schillinger, wife of Dale J. Schillinger, ChE'56 (May 7, 2019)

Justin Eric Tieman,

sophomore in physics at Missouri S&T (May 19, 2019)

Patricia Turner, wife of Charles R. Turner, CE'66 (March 20, 2019)

John C. Vaughn, retired director of resource and development planning at Missouri S&T (May 13, 2019)

**Ruby Webb**, wife of the late William H. Webb, ChE'39 (June 9, 2019)

Susan Wiemann (May 7, 2019)

Sue Worley,

wife of Morris T. Worley, MS MinE'61 (June 10, 2019) □



### DR. WILLIAM TRANTER

Dr. William Tranter, professor emeritus of electrical engineering at Missouri S&T and a pioneer in the field of communications and simulation, died May 5, 2019. He earned bachelor of science, master of science and Ph.D. degrees in electrical engineering from the University of Alabama in 1964, 1965 and 1970, respectively. In 1969, he joined the S&T faculty, where he served as an assistant and associate dean of engineering from 1980 to 1985. He was named Schlumberger Professor in 1985. In 1997, he joined the Virginia Tech faculty as the Bradley Professor of Electrical and Computer Engineering, and a member of the Mobile and Radio Research Group (now Wireless@ VT.) He served as a program director in the Computer and Information Science and Engineering (CISE) Directorate with the National Science Foundation from 2009 to 2011. He was active in the Institute of Electronics and Electrical Engineers (IEEE) and was named Fellow in 1985 and Life Fellow in 2005. He served an 11-year term as editor-inchief of the IEEE *Journal on Selected Areas in Communications*. He received an IEEE Centennial Medal in 1984, a Millennium Medal in 2000, the Donald McLellan Meritorious Service Award from the IEEE Communications Society in 2000 and the Publications Exemplary Service Award in 2001.

# MIKE AND LINDA EVANS Investing in the intersection of technology, arts and sciences

# **Mike Evans**, ME'67, remembers late nights working on the *Rollamo*, float trips on the Gasconade River — and Saturday mornings that were anything but leisurely.

"I have many good memories of my Rolla days," says Evans, who served as editor and business manager of the *Rollamo* and a columnist for the *Missouri Miner.* "But then there were those mechanical engineering power plant labs at 7:30 on Saturday mornings."

After graduating, Evans worked for AT&T before completing four years of military service in the U.S. Navy's nuclear submarine program. Following active duty, Evans joined Combustion Engineering and then Kansas City Power and Light Co., where he served as senior vice president and chief operating officer before joining Consolidated Edison of New York. "The pinnacle of my career was serving as president and COO of Con Edison, one of the largest utilities in the world," says Evans, who also holds an MBA from Rockhurst University. "Running an electric, gas and steam utility in New York City had its challenges, frustrations and rewards."

After nine years at the helm of Con Edison, Evans served as president and CEO of the Institute of Nuclear Power Operations before retiring in 2004. He subsequently served as a board member and chair of Midcontinent Independent System Operator, a wholesale electric transmission service provider. A member of S&T's Academy of Mechanical and Aerospace Engineers, Evans received an Award of Professional Distinction in 2004. He and his wife, **Linda**, who holds a bachelor of science degree in elementary education from Central Connecticut University, are members of the Order of the Golden Shillelagh. This past year, they established the Mike and Linda Evans Dean's Endowed Scholarship Fund in the College of Arts, Sciences, and Business (CASB). The scholarship supports Missouri students with financial need, as well as students with dual majors in CASB and the College of Engineering and Computing.

"Early in my career, I had to let someone go," says Evans. "He was a really bright engineer who just couldn't communicate. I've thought a lot about him over the years, and how too often we educate students in silos. Our scholarship is an investment in the intersection of technology, arts and sciences."

To learn more about the Evans CASB Dean's Scholarship program, contact **Kristen Gallagher** at 573-341-6050 or **gallagherkr@mst.edu**.

# PHOTO FINISH On Oct. 12, the Miner football team recorded its fifth straight win of the season against NCAA Division I opponent Texas Southern University. The 23-20 victory was the Miners' first win over a Division I team in 13 years. The win earned national media coverage and put Missouri S&T's name in headlines in the Washington Post, the Houston Chronicle and USAToday. The Miners ended the season with a 7-4 record.



Miner Alumni Association 1100 N. Pine St. Rolla, MO 65409-0650

Parents: If this issue of Missouri S&T Magazine is addressed to your son or daughter who has established a separate permanent address, please notify us of the new address: 800-JO-MINER or alumni@mst.edu. Nonprofit Org. U.S. Postage Paid Liberty, MO Permit #143 A PUBLICATION OF THE MINER ALUMNI ASSOCIATION REPRESENTING AND SERVING ALUMNI OF MSM, UMR AND MISSOURI S&T

HAVENER

#### LEADING INTO The future

FALL/WINTER 2019 Vol. 93 No. 3 Magazine.mst.edu

# WITH GRATITUDE

Thank you to the alumni and friends who honored Missouri S&T with \$24.3 million in charitable gifts and pledges this past year. Your generosity in support of scholarships, learning centers, athletics and so much more promises to deliver a lifetime of dividends to proud Miners.

> "The donors who give back ignite extraordinary possibilities in the lives of our students, in the potential for solution-inspired research and in the leadership essential for solving critical global challenges."

> > - Chancellor Mo Dehghani