

THE BRIDGE

Missouri S&T
Winter 2020 | Vol. 45

Civil, Architectural and Environmental Engineering



**Kummers give largest single gift
in the history of Missouri higher
education** page 4

**Transforming how
we design and
build our future**
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CLAYCO
ADVANCED CONSTRUCTION
AND MATERIALS LABORATORY



Academy inducts new members page 10

Butler-Carlton expansion complete, ACML open for business!

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FROM THE CHAIR: Joel G. Burken, Ph.D., P.E., BCEE, F.AEESP

Wow, what a difference a year can make!

“Going into the 2019-20 academic year, we have substantial anticipation of great things in our future, built upon the continuing advancement of the CArEE department and new S&T-wide bold goals and vision to advance the S&T campus.”

— Dr. Joel Burken, *The Bridge*, Nov. 2019



Remembering that quote and letter from fall 2019, we were looking forward to 2020 and our upcoming 150th anniversary for the S&T campus and for civil engineering as well as the grand opening of the ACML expansion of Butler-Carlton Civil Engineering Hall, and we were celebrating expanding enrollments and research programs.

Our expectations were exceedingly high. Little did we know that the COVID-19 pandemic was just around the corner. The pandemic impacts have been and are still profound among our efforts and have also weighed on us individually as students, staff and faculty. While the negative aspects are clear, our team’s strength and fortitude has certainly shone during the challenges in many ways. We have maintained an extremely high standard for educating “street-ready engineers,” but with a new flexibility of delivery and ways to assess learning.

During these tough times, we have looked to our core values and our team has pushed on to meet our vision as a “Destination of Choice” for students and scholars alike, and our alumni in particular have propelled us toward that vision. Most notably, we see the recent \$300M record contribution from **Fred and June Kummer** (pg. 4) as a transformational gift for our university with new educational and research

approaches. The new Kummer Institute will include a school of innovation and entrepreneurship and research pillars to elevate our capabilities as a department and university. This endeavor certainly fits with our motto to **Change the World** for generations of alumni to come.

We also enjoyed the opportunity to dedicate the Clayco Advanced Construction and Material Lab (pg. 7), completing the \$7.5M expansion to Butler-Carlton Civil Engineering Hall. We enjoyed more than 150 alumni, students and partners joining us for the virtual event and look forward to a grand opening in person.

Many of our incredible alumni also increased engagement, making an extra effort to speak to organizations and teams (pg. 8). Notably, our members of the Academy stepped up, and students have looked to these legacy builders as examples and mentors. We’ve had attendance of more than 100 students for some online events, and our organizations appreciate the in-person visitors that demonstrate the dedication and commitment we have come to enjoy and expect from Miner alumni, current and future.

Alumni, faculty and student excellence is always something we celebrate. Our 11 new Academy of Civil Engineers members (pg. 10) are definitely worth celebration, and their remarkable accomplishments merit more than the online initiation held back in September. New members are already demonstrating leadership, giving talks and mentoring students.

We also celebrate a number of accolades for faculty and students (pgs. 15-18), and we are proud that the current team in Rolla is living up to the expectations built during the first 150 years of civil engineering at S&T. Our strong team of Miners will weather the current storm, and we shall not sit back, but will look forward and continue to make advancements and lead the way in working toward changing the world. Do not hesitate to reach out with questions or ideas.

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DEPARTMENT ADMINISTRATION

Department Chair

Joel Burken, Ph.D., P.E., BCEE, F.AEESP

Assistant Chairs

Civil: Eric Showalter, Ph.D., P.E.

Architectural: Stuart Baur, Ph.D., A.I.A.

Environmental: Mark Fitch, Ph.D.

Graduate Programs: Cesar Mendoza, Ph.D.

LAWANDA JONES: MAKING AN IMPACT

LaWanda Jones, CE'91, corporate marketing manager for ABNA Engineering Inc. in St. Louis, gave a talk titled, "How will you impact the world?" to our senior seminar class in October via Zoom.



Jones's engineering career began with an internship at Consolidation Coal Co. (CONSOL) followed by project experiences throughout Missouri, Illinois, Kentucky, Ohio, West Virginia and Pennsylvania. She holds professional engineering licensure

in most of these states. Jones's career continued at ABNA Engineering Inc., providing project management and civil designs in site design, complex utility projects, planning, environmental and historical compliance, water and wastewater resources, and community engagement.

Jones is a very active alumna. She has served as a keynote speaker for Honor, Hurdles and Heroes, chaired the Chancellor Advisory Committee on African American Recruitment and Retention (CACARR), endowed two S&T scholarships, and is a 2015 Miner Legend, a 2019 Women Hall of Fame Inductee, and a member of the Academy of Civil Engineers.

NEW CERTIFICATES

Missouri S&T will offer three new certificate programs in civil engineering beginning fall 2021 that will be great for working professionals who want to stay ahead in their field.

The new certificates being offered are:

- **Advanced Materials for Sustainable Infrastructure**
- **Building Systems Engineering**
- **Surface Water Resources**

We have a full listing of existing certificates and course offerings online. The courses are delivered over the internet via live streaming video, then archived for review and easy access.

For more information and details on all our certificates and courses for fall, visit: distance.mst.edu/care/.

THE BRIDGE



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Kummer gift

A \$300 million gift from **Fred**, CE'55, and **June Kummer** will create new scholarships and fellowships for students, new research centers, a new school focused on innovation and entrepreneurship, and new economic development and outreach opportunities.

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Miner alumni step up

This semester, amidst the upheaval of a global pandemic, CAR EE alumni have stepped up to the challenge to serve our current students. They have given generously of their time and talent. We are grateful!

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El-adaway studies factors affecting renewable energy adoption

Funding from NSF will help researchers study how utility customers use electricity, how utility companies distribute power, and how consumer acceptance levels and economic factors affect the adoption of renewable energy, specifically solar power.

10 Academy of Civil Engineers Inductees

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Photo by Terry Barner/Missouri S&T

Missouri S&T receives \$300 million gift from June and Fred Kummer

by Andrew Careaga

In the largest single gift in the history of Missouri higher education, St. Louis businessman **Fred Kummer** and his wife **June** have donated \$300 million to a foundation that will support Missouri S&T.

This new gift will enable S&T to establish a new school of innovation and entrepreneurship, develop new areas for research, provide numerous scholarships and fellowships for students, and bolster the Rolla region's economy.

"This gift is transformative for S&T, the Rolla region and our state," said **Dr. Mo Deghani**, Missouri S&T chancellor. "For nearly 150 years, Missouri S&T has been known as the state's premier technological university. Now, thanks to June and

Fred, S&T will have the opportunity to become one of the nation's leading universities for innovation. At the same time, this gift will make our school a center for entrepreneurship, thereby energizing the economy of the Rolla area and the entire state of Missouri.

"With this gift, we expect to be able to dramatically increase the size of our student body, recruit outstanding new faculty, establish powerful new centers of research, and engage with the community in new and exciting ways," Deghani said.

"I owe much of my success to the education I received at Rolla," Fred Kummer said. "My Rolla experience taught me how to think, how to work hard and how to manage my own career. June and I believe in

the mission of this great university, and that's why we have chosen to invest in S&T's future success. We believe that Missouri S&T's best days are ahead."

Fred Kummer, 91, is the founder and chairman of St. Louis-based HBE Corp., which he established in 1960 and built into the world's leading design-build firm for health care. He is a 1955 civil engineering graduate of Missouri S&T, which was then known as the Missouri School of Mines and Metallurgy. He and his wife have been major donors to Missouri S&T for decades.

To learn more about the Kummer Institute, visit the website at: kummerinstitute.mst.edu

“I owe much of my success to the education I received at Rolla.”

— Fred Kummer, CE'55

Kummer Institute Foundation

The Kummers' gift will be channeled into a new not-for-profit foundation, The Kummer Institute Foundation. Funds from the foundation will support several new initiatives at Missouri S&T, including:

• A new research entity

A new, independent research and development entity. Four new research centers – focused on infrastructure, advanced manufacturing, artificial intelligence and autonomous systems, and environmental and resource sustainability – will stand at the heart of this entity, which will be supported by research space in the Rolla area.

• The Kummer School

The Kummer School of Innovation, Entrepreneurship and Economic Development, a new school within the university that will combine business-related academic programs with new programs related to innovation and entrepreneurship at the bachelor's, master's and Ph.D. levels.

• Scholarships, fellowships and other enhancements

Numerous other new programs and enhancements, including scholarships and fellowships for high-achieving undergraduate and graduate students; expansion of Missouri S&T's online degree programs; new research faculty positions; expansion and renovation of existing structures; construction of new buildings and labs; and greater community outreach through new initiatives in student-community engagement, a lecture series, and a shuttle service between S&T and St. Louis to bring students from the metropolitan area to Rolla for camps, campus visits and other activities.

The Kummer Institute Foundation is expected to generate \$250 million in gross domestic product to the Missouri economy during its first five years of operation and more than \$2 billion over 25 years, according to an economic impact analysis conducted by the University of Missouri-Columbia. This impact does not include the potential of spin-off corporations and subsequent job creation that the initial \$300 million gift is expected to produce, or the research and development activities to be conducted by the institute's four research centers.

ASCE Region 7 award winners

Civil, architectural, and environmental engineering had a great showing at the American Society of Civil Engineers (ASCE) section/regional awards. Missouri S&T competes in Region 7, which includes Kansas, Colorado, Wyoming, South Dakota, Nebraska, Iowa and Missouri.



ASCE
ST. LOUIS SECTION

Saint Louis Section Scholarship
Elizabeth Sanders
Missouri University of Science & Technology

Hometown
• Lake Waukomis, Missouri

Interests/activities
• I love listening to classic rock albums, learning trivia facts, and making postcards of the towns I visit.

Goals
• Starting full-time in the construction industry as a Project Engineer upon graduation. I am currently studying to take my PE as well so I can earn my PE license. I also plan to one day visit all the National Parks!



2020 ST. LOUIS SECTION SCHOLARSHIP

• **Elizabeth Sanders**, senior, civil engineering



ASCE
ST. LOUIS SECTION

YOUNG ENGINEER AWARD

JEREMIAH KING, P.E.

➤ BS in Civil Engineering, University of Missouri-Rolla, 2006
➤ Began at Brinkmann Constructors as a Project Engineer and was subsequently promoted to Project Manager
➤ Jeremiah believes in giving back to both his profession and institutions that have contributed to his growth. He currently serves as President of the Engineers' Club of St. Louis as well as the National Board of Directors of Sigma Tau Gamma Fraternity, Inc.
➤ past roles have been as a Chapter Director for the St. Louis Chapter of MSPE, a Trustee for S&T's Board of Trustees, Chair of S&T's Corporate Development Council, and Area Director for the Miner Alumni Association.



2020 YOUNG ENGINEER AWARD, ST. LOUIS SECTION

• **Jeremiah King**, CE'06, P.E., St. Louis, Brinkmann Constructors

2020 THOMAS FITCH ROWLAND PRIZE

• **Dr. Islam El-adaway**, Ph.D., P.E., F.ASCE, Missouri S&T

REGION 7 OUTSTANDING FACULTY ADVISOR

• **Dr. Joel Burken**, Ph.D., P.E., BCCE, F.AEESP, Missouri S&T



Missouri S&T receives \$1 million gift from the Sunderland Foundation to complete new lab

by Maridel Allinder

Missouri S&T received a \$1 million gift from the Sunderland Foundation to complete the construction of the Clayco Advanced Construction and Materials Laboratory in Butler-Carlton Civil Engineering Hall. The foundation also supported the project with a \$100,000 gift in 2016.

“We are deeply grateful for the Sunderland Foundation’s investment in this research and teaching lab,” says S&T **Chancellor Mo Deghani**. “The foundation’s partnership has made a difference on our campus for many years. This gift will support research on next-generation construction materials and methods with the potential to transform how we design and build our future as a nation.”

The Sunderland Foundation was established in 1945 by Lester T. Sunderland, who served as president of the Ash Grove Cement Co. for 33 years. The foundation’s focus on funding brick and mortar projects reflects the heritage of the cement company.

“Since its inception, the foundation has focused on supporting projects in higher education, health care, youth-serving organizations, and civic and cultural areas of interest,” said President and Chief Operating Officer Randy Vance. “By supporting these types of construction and special interest projects, the Foundation fosters a stronger, safer and more vibrant future for the communities we serve. The Advanced Construction and Materials Laboratory project is an important undertaking that we are pleased to support.”

The lab expands the existing high bay structures lab in Butler-Carlton Civil Engineering Hall with 16,000 square feet of new space for research on sustainable, cost-effective, and green solutions to our nation’s infrastructure challenges. More than 35 pieces of Center for Infrastructure Engineering Studies (CIES) testing equipment previously located in buildings across campus have been consolidated at the new research lab.

Naming donor Clayco Inc. and ARCO Construction Co. are also major donors to the lab, along with the University of Missouri System, S&T’s College of Engineering and Computing, and private charitable gifts including a bequest from civil engineering alumnus James A. Heidman.



OPENING CELEBRATION Clayco Advanced Construction and Materials Laboratory (ACML)

Please take the opportunity to watch the ACML dedication and ribbon cutting from Oct. 16, 2020. The virtual celebration in no way can take the place of celebrating in person, (which we will certainly do in the future), but the virtual event did gather more than 150 Miner alumni during 2020 Homecoming activities. We encourage all to watch the dedication, with specific focus on the words of our alumni and partners, starting at the 12-minute mark. Those words of our proud Miner alumni ring true and exemplify the legacy we enjoy today and the future we look to embrace.

Video link: youtu.be/yL85CctxbZk

MINER ALUMNI STEP UP



Bob Brinkmann, CE'71

This semester, amidst the upheaval of a global pandemic, CAEE alumni have stepped up to the challenge to serve our current students. In senior seminar class, we are limited to about 27 seats for 162 students. We've been fortunate to have alumni be there in person and virtually. Just to name few, **Bob Brinkmann**, CE'71, presented on creativity and leadership and challenged our students to not just think outside the box, but to question the box itself!



Allen Minks, CE'81, MS CE'83

LaWanda Jones, CE'91, challenged students to impact the world in a positive way (pg. 3). We've also had many alumni and academy members talk with student societies, including **Allen Minks**, CE'81, MS CE'83, on the ASCE St. Louis project of the year, which drew over 100 in virtual attendance. **Marsia Geldert Murphey**, MS CE'97, is a trifecta speaker, joining ASCE and Chi Epsilon meetings and the fall networking and leadership event on behalf of the Academy.



Marsia Geldert-Murphey, MS CE'97

We've also increased our reach, as during one of Chi Epsilon's meetings, **Dr. Tom Wolff**, CE'70, spoke from Lansing, Mich., to our students — one in the Philippines and one in Germany!

While there is no space to acknowledge all of those that have contributed, the dedication and commitment has meant a lot to our students and set an example of what it truly means to be a proud Miner.

PROGRAM OPTIONS A NEW MINOR FOR MINERS

Construction Engineering and Management (CEM)

This minor will provide students the opportunity to gain broad and in-depth knowledge within the CEM specialty area. With insight and input from the member companies of the Missouri Consortium for Construction Innovation (MoCCI), this new minor better equips Miners and is aligned to meet the needs of today's construction industry.



Krista Haslag, CE'16, ArchE'16,
project engineer, Brinkmann Constructors



mo-cci.mst.edu

Professor studies factors affecting renewable energy adoption

by Nancy Bowles



Dr. Islam El-adaway

Researchers at Missouri S&T have received \$250,000 from the National Science Foundation (NSF) to study how utility customers use electricity, how utility companies distribute power, and how consumer acceptance levels and economic factors affect the adoption of renewable energy, specifically solar power.

“We want to understand the factors that affect electricity use and adoption of solar energy,” says **Dr. Islam El-adaway**, Hurst-McCarthy Professor of Civil Engineering at S&T, who is conducting the research with Ph.D. student **Gasser Ali**. “This is one of multiple steps we hope to take. Once we understand more about economic factors and customers’ attitudes, we can take it to the next level.”

El-adaway says solar power can offer several benefits to consumers, including lower costs and greater reliability and power quality as traditional power plants age and may be taken offline.

The researchers will collect and analyze electricity usage and transmission data to forecast how communities are changing through consumer behavior and utility company needs.

With their collaborators at the University of Tennessee in Knoxville (UTK), El-adaway and Ali are working closely with the southeastern electric grid of the Tennessee Valley Authority (TVA) to gather information about the physical components of TVA’s electric grid: transmission lines, the AC transmission grid and generating units. The researchers will use customer surveys to determine how residential electric consumers use power and how motivated they are to participate in programs that allow them to reduce power consumption during periods of higher prices. Researchers will also gather information from commercial power users about their experience and concerns with solar power.

Ultimately, the research findings will be incorporated into courses at Missouri S&T and will be used to raise public awareness of the benefits of solar power by offering panel sessions and exercises at national conferences, regional workshops, and local meetings with consumers, business leaders and utility operators.

For more information about this research, contact Dr. Islam El-adaway at eladaway@mst.edu.

Academy of Civil Engineer

Eleven professionals with ties to Missouri S&T were inducted into the Missouri S&T Academy of Civil Engineers during a virtual induction ceremony held Friday, Sept. 18.

The academy recognizes outstanding alumni for their professional achievement and success, and it provides support and experience to help the civil, architectural and environmental engineering department at Missouri S&T to reach its collective mission and vision.



Ronald Colas

Ronald Colas, of Miami, Florida, vice president of WSP USA Inc. and managing executive for south Florida and the Caribbean, earned a bachelor of science degree in civil engineering from Missouri S&T in 1987. He has managed and completed engineering projects in California, Florida, and the Caribbean working in both the public and private sector for more than 32 years. His list of projects runs the spectrum of transportation-related engineering, ranging from highways to waterway ports to airport projects. Colas is an active member of several technical societies, including Florida Engineering Society, American Council of Engineering Companies, American Society of Civil Engineers, International Society of Soils Mechanics

and Foundation Engineers, International Bridge Tunnel and Turnpike Enterprise Association, and the National Society of Professional Engineers. He is also active in community service and philanthropic organizations such as the Transportation and Expressway Authority of Florida, Florida Airport Council and Engineers without Borders (EWB), and he has volunteered in Haiti to rebuild after an earthquake. He also coaches youth soccer. Colas, a registered professional engineer in seven states, has received accolades and awards for his contributions to the field of engineering including Florida Engineering Society's Engineer of the Year award. He and his wife, Gaye, have three children — Isabelle, who works in global public health, is married and lives in Los Angeles; Reginald, who works in the pharmaceutical industry and lives in Boston; and Richard, who will be a freshman in college this fall, studying to become an occupational therapist and an attorney. Colas is fluent in several languages, enjoys traveling with family, flies radio-controlled scale helicopter models and plays golf.



Jason Dohrmann

Jason Dohrmann of St. Louis, vice president and regional director for H.R. Green's transportation group, earned a bachelor of science degree in civil engineering from Missouri S&T in 1999. He began his career at Parsons Brinckerhoff, then left in 2003 to help HR Green start up an office in St. Louis. His career has included the technical design, planning, project management and construction management of many significant transportation and infrastructure projects across the Midwest. Dohrmann has served as chapter vice president, secretary and treasurer for the St. Louis chapter of the Missouri Society of Professional Engineers (MSPE) and serves on the Civil, Architectural and

Environmental Engineering Advisory Council. He is also a director and past chairman of the engineering excellence, Missouri Department of Transportation (MoDOT) and St. Louis County liaison committees for the American Council of Engineering Companies-Missouri. He has served on the national awards committee for the National Society of Professional Engineers (NSPE) and chaired the American Public Works Association (APWA) National Awards Committee. He is also an active member of the Engineer's Club of St. Louis. Dohrmann has been active in community organizations, including the United Way of St. Louis, St. Alban Roe Catholic Church and Archdiocese of St. Louis Annual Catholic Appeal Council. He is a member of Sigma Pi fraternity's alumni board, which recently raised funds for the design and construction of a new fraternity house. Dohrmann has received numerous accolades, including St. Louis Business Journal's 30 under 30, St. Louis Chapter's MSPE Young Engineer of the Year, MSPE's State Young Engineer of the Year, the Civil, Architectural and Environmental Engineering

s inducts 11 new members

Department's Exemplary Young Alumni Award, MSPE's Outstanding Service Award and the APWA Public Works Leader of the Year in Private Practice. Dohrmann and his wife of 14 years, Karen, have three amazing boys. In his spare time, he enjoys watching and coaching the boys in their various sports.



Daniel Ellis

Daniel Ellis of Bella Vista, Arkansas, senior vice president of Northwest Arkansas infrastructure for Crafton-Tull, earned a bachelor of science degree in civil engineering from Missouri S&T in 1999. He began his career with Crafton-Tull as an entry-level civil engineer and rose through the company's ranks to his current position, senior vice president for infrastructure and manager of the Rogers, Arkansas, office. He has helped Crafton-Tull become one of the largest engineering firms in Arkansas. He has managed projects ranging from retail developments and apartment complexes to schools, roads, football stadiums and hospitals. Ellis has been active

in the American Society of Civil Engineers (ASCE), serving in several leadership positions, culminating in the presidency of both the Northwest Arkansas Branch and Arkansas Section of ASCE. He has been an active mentor for S&T students, actively assisting them in their capstone design projects and providing career information and guidance. He was named the Civil Engineering Exemplary Young Alumnus in 2014. Ellis is active in his church, serving as sound production leader for Sunday services as well as many other events. He has put his civil engineering skills to work on a volunteer basis in Arkansas and on numerous mission trips to Africa. He has also been an active volunteer in various capacities for youth sports in both his and other communities. His son, Zechariah, is a freshman at Arkansas State University and a member of their football team. His daughter, Abigail, is a freshman at Bentonville High School and plays guitar and signs for their church. He is a man of long-term commitment and loyalty, as an example, wedding rings were not an adequate symbol commitment, so he and his wife, Chauna, have coordinating Mickey and Minnie mouse tattoos on their ring fingers. Also, he will never be able to leave Crafton-Tull since the corporate logo is tattooed on his body. Ask him to show you where! In the little free time he has, he enjoys fishing in north central Arkansas.



Steve Ford

Steve Ford of Franklin, Tennessee, vice president of Garney Construction, graduated Summa Cum Laude from Missouri S&T in 1979 with a bachelor of science degree in civil engineering. He received the Outstanding Civil Engineering Senior Award from S&T by the Missouri Society of Professional Engineers (MSPE). Ford estimates, bids and manages operations for multiple projects and is responsible for the organization and management of Garney's Mid-South and Mid-Atlantic operations. These projects include major water and wastewater pipeline and facilities construction and rehabilitation. Since 1979, Ford has managed major infrastructure projects throughout the United States. He is also an active member of the American Water Works Association and the National Utility Contractors Association. Ford has been active in the Franklin Rotary Club at Breakfast for more than 20 years. His drive to help his club and charities in the form of fundraising for annual

events like the annual charity golf tournament is such that in his club of 97 members, he singlehandedly raised 17 percent of their funds for 2019. Because of his help, his Rotary was able to build Habitat for Humanity homes; build ramps and make home modifications for children with special needs; fund programs for local Boys and Girls club; provide clean water systems for children's hospitals and stoves for feeding stations in Guatemala; furnish supplies for a local domestic violence shelter; and give support for many other local services for the less fortunate. In his hometown of Jackson, Missouri, Ford established the not-for-profit Legacy Preservation Enterprise to preserve precious historical and natural resources for future generations in Jackson, Byrd Township, Cape Girardeau County, Missouri. This effort includes the preservation and restoration of the Abraham Byrd house (ca. 1827), the Frizel-Welling house (ca. 1818/1838), and the Criddle House (ca. 1815). Ford's passion for native plant restoration and re-establishment led him to design and install the Taylor Twins Memorial Garden in Jackson, planted with only native plants, and the work-in-progress to establish a native plant nature preserve, the Charles Shelby Ford Conservation Area, on the 50-acre farm where he was raised. Ford also supported establishing the Garney Undergraduate Scholarship

in Construction Engineering and Management (CEM) through the Missouri Consortium for Construction Innovation (MO-CCI).



John George

John George of Overland Park, Kansas, vice president and managing director of Oil & Gas Americas-Europe for Black and Veatch, earned a bachelor of science degree in civil engineering from Missouri S&T in 1981. He provides leadership to deal with innovative solutions to clients in matters of capital and strategic planning, operational effectiveness, project execution, change management and operational and business excellence. George ensures that Oil & Gas teams' activities guarantee successful solutions implementation, quality that meets or exceeds clients' expectations, predictable project execution and high customer satisfaction. George has worked for Black and Veatch for a total of 29 years. He also worked for Hovensa LLC, managing projects and serving as vice president of technology for oil and gas operations in the Virgin Islands, where he lived from 2005 to 2011 before returning to Black and Veatch. George has been a mentor and role model for Miners working at Black and Veatch. He has helped many engage professionally and has volunteered his time to come back to Rolla to speak with

students about professional responsibilities and about being a supportive alumnus. He has shared his unique path in leaving consulting to run a major industrial facility in international locations and then returning to his consulting career.



Brady Hays

Brady Hays of Overland Park, Kansas, vice president and director of strategy and risk management for Black and Veatch, earned a bachelor of science degree in civil engineering from Missouri S&T in 1998. He also holds a master of science degree in civil engineering and an MBA from the University of Kansas. Hays works in the oil and gas business line, where in addition to strategic planning and risk management, he is also involved with mergers and acquisitions; market intelligence; market and client segmentation; strategic sales and account development programs; marketing analysis; and client relationship management. In past roles in the water business line, he worked across multiple functions, continents and business units on projects and corporate assignments to promote global growth and value contribution. Hays served as the project director for seawater desalination projects with a focus on major mining accounts and the TKO Project in Hong Kong. He served as

the P&L director for the water-mining and Latin America region, contributing more than \$3 million EBT annually. He held business development roles in Water UK for the AMP5 capital program period for the water utilities; corporate development roles for strategy and mergers and acquisitions with identification, valuation and preliminary due diligence for Gleeson acquisition; and corporate strategic planning roles with the 2020 team. Hays, a licensed professional engineer in Missouri, served on the advisory board for Missouri S&T's College of Engineering and Computing and frequently returns to speak to students in civil, architectural and environmental engineering.



Michael Hermesmeyer

Michael Hermesmeyer of Highlands, North Carolina, retired senior vice-president for Boyle Engineering Corp., earned a bachelor of science degree in civil engineering from Missouri S&T in 1971. He began his career with the Illinois Environmental Protection Agency in Chicago and then joined Chicago Fly Ash Co. He moved to Ft. Lauderdale, Florida, when he joined Parkson Corp. in 1978 as a process engineer. Born and raised in Quincy, Illinois, he fell in love with the east coast of Florida and continued his water and

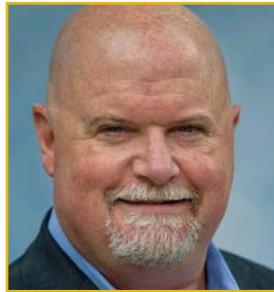
wastewater career with three engineering consulting firms. He joined the third firm, LBFH, in 1989 and rose to president and CEO of the 300-plus employee, six-office firm before he negotiated its sale to Boyle Engineering Corp. There he served as senior vice president and a member of the board of directors until the firm was sold to AECOM. Hermesmeyer has received several honors including Engineer of the Year for the Treasure Coast Chapter of the Florida Engineering Society (FES) in 1990 and in 1992 he was named an FES fellow. In 1997-98 he was the Business Person of the Year for the Stuart/Martin County Chamber of Commerce. He was an active member of FES serving on its board for many years and as the founding president of the Treasure Coast Chapter. He was also active in the Water Pollution Control Association and the Florida Institute of Consulting Engineers (FICE or ACEC-Florida) both on the board of directors for many years and then served as its president. Hermesmeyer has served his community in many capacities, including serving on the boards of the Martin County Council for the Arts, Stuart/Martin County Chamber of Commerce and as a member of the board and president of the Martin County Economic Council. He was chairman of the Martin County Industrial Development Board and the Environmental Quality Control Board. As a student he served on the Student Union Board and was president from 1970 to 1971. Hermesmeyer enjoys boating, golf, fishing and spending time with family and friends. He and his wife, Susan, have retired to the mountains of North Carolina where they enjoy visits from their daughter, Robyn, and three grandchildren.



David Kemper

David “Dave” Kemper of Tampa, Florida, senior principal for Stantec, earned a bachelor of science degree in civil engineering in 1979 and a master of science degree in engineering management in 1984, both from Missouri S&T. He began his career in the consulting engineering field and spent his entire career in the industry. He earned his master’s degree attending part time in the evenings through the St. Louis extension program. After working five years in St. Louis, he and his family relocated to Tampa, Florida, in 1985. Kemper leads Stantec’s Tampa office with approximately 150 staff members and is a discipline leader for its community development practice in Florida. He served as principal or project manager on many of the largest urban redevelopment and land development projects in the region. Kemper has been active in numerous professional organizations, including the American Society of Civil Engineers (ASCE), Florida Engineering Society, the Society of American Military Engineers, Urban Land Institute and Real Estate Investment Council. He also serves on various committees and holds multiple officer positions. Kemper is active in various charity organizations and fundraisers, including many years of coaching children’s

youth sports teams and being the top fundraiser for an autism cycling event for the past six years. Kemper enjoys following Tampa Bay Rays baseball and riding his mountain bike on the off-road trails located in the former phosphate strip mines east of Tampa. He and his wife, Barb, and adult children Christopher, Courtney and Douglas, live in Tampa.



Mike Pappas

Mike Pappas of Austin, Texas, associate director of the Construction Industry Institute, earned a bachelor of science degree in civil engineering from Missouri S&T in 1989. He also holds master of science and Ph.D. degrees in civil engineering from the University of Texas at Austin, where he works as a lecturer in civil engineering. Pappas served eight years as a Navy Civil Engineer Corps officer, managing projects for the Navy and Marine Corps in the U.S., the Caribbean, and the Western Pacific. He also designed and managed infrastructure projects for the Farnsworth Group in central Illinois. He currently works with companies to implement CII research into their project management practices. Pappas is a member of the American Society of Civil Engineers, the Association for the Advancement of Cost Engineering, the Dispute Resolution Board Foundation, and the State Bar of Texas Construction Law Section

and is a professional engineer in Missouri. As a self-employed project management consultant for more than 15 years, Pappas helps clients develop effective solutions in various areas of front-end development, execution, and dispute prevention and resolution. He has taught professional development courses for almost 4,000 project professionals in 16 countries. His experience includes heavy industrial, infrastructure and utility projects from need identification and scope definition through operation and maintenance. Pappas and his wife, Barbie, a 1990 electrical engineering graduate of Missouri S&T, have two sons – Jim, a firefighter in Corpus Christi, Texas, and John, a mechanical engineering sophomore at the University of Arkansas. Pappas serves on his church’s security team, is a shooting sports instructor with the Boy Scouts of America, and was the public address announcer at Regents School of Austin for football and lacrosse games. He is a member of the advisory board for Advanced Work Packaging conferences and for One Day Academy. He enjoys hunting and firearms competitions.



Ty Sander

Ty Sander of St. Louis, vice president of Crawford, Murphy and Tilly Inc., earned a bachelor of science degree in civil engineering from

Missouri S&T in 1998. A dedicated aviation professional, he has worked for Crawford, Murphy and Tilly Inc. since 1999. He was recently named vice president and has served as civil engineer, group manager and regional group manager of Aviation Services. A member of Sigma Phi Epsilon fraternity, Sander is a member of the American Association of Airport Executives, the Missouri Airport Managers Association, MoSAC, MSPE and ASCE. He has served as the Missouri Airport Managers scholarship chairman for the past five years and has given numerous presentations at FAA, ACI and AAAE conferences throughout his career on aviation-related topics. In 2013, Sander co-authored an analysis and recommendation of a long-term rehabilitation program on Runway 12R- 30L at Lambert-St. Louis International Airport, “2013 Airfield and Highway Pavements Specialty Conference Publication, Transportation and Development Institute of the American Society of Civil Engineers,” which was a published technical paper. He truly has a love of pavement engineering work at airports. His dedication, relationships with regional and national aviation administration, airport directors, managers, airlines, and innovations in pavement design has saved operational downtime and critical funding for many airports across the country, including Lambert-St. Louis International Airport. Sander was the project engineer on both the partial rehabilitation of the primary runway for Columbia Regional Airport in Missouri and Keel Section Replacement, Runway 30R, for Lambert St. Louis International Airport,

which both won national paving awards from the American Concrete Paving Association. Sander has been a volunteer and supporter of the United Way for more than 15 years. He is the father of two wonderful young ladies, Brooklynn, 14, and Lillian, 10, and enjoys spending time with them. He regularly volunteers at their schools and in their competitive dance, serving as a "Prop Dad" building and moving scenes as needed for performances. Sander is also active with Lillian's Girl Scout troop, serving as a volunteer, leader and instructor for events and activities. He attends, supports and volunteers at events for his fraternity and also enjoys golfing, hiking, biking and reading.

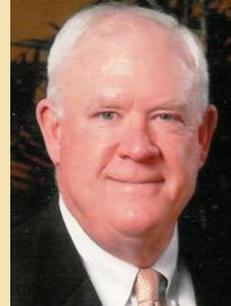


Brian Swenty

Brian Swenty of Evansville, Indiana, professor of mechanical and civil engineering at the University of Evansville, earned bachelor of science and Ph.D. degrees in civil engineering from Missouri S&T in 1976 and 1989, respectively. He earned a master of science degree in civil engineering from the University of Florida in 1977. Swenty served on active duty as an officer in the U.S. Army Corps of Engineers, a senior civil engineer with

a consulting firm in Cape Canaveral, Florida, and as director of Missouri's Dam and Reservoir Safety Program. Since 1993, Swenty has been at the University of Evansville, where he served 21 years as chair of mechanical and civil engineering and 1.5 years as interim dean of the College of Engineering and Computer Science. He is a licensed professional engineer in California, Florida, Missouri, Illinois and Indiana and works as a consultant on projects involving the design and construction of new dams, modifications to existing dams, and the investigation of dam failures. Swenty has been active in several professional organizations, most notably ASCE, ASDSO and ABET. He was appointed to ABET's Engineering Accreditation Commission in 2013 and recently completed a five-year term as commissioner. He has made numerous accreditation visits as both a program evaluator and a team chair during his 20-year involvement with ABET. He served as Missouri's representative to the Association of State Dam Safety Officials (ASDSO) for 10 years and chaired the liability and legal issues committee. He is an active member of his church and has been involved in children's ministry activities for almost 40 years. He and his wife, Connie, enjoy traveling, bicycling and spending time with their three adult children, Matthew, Melissa and Michelle, and their eight grandchildren.

Berry honored with Alumni Merit Award



Dr. Bob Berry, CE'72, retired vice president of Burns and McDonnell Engineering Co. in St. Louis, received a 2020 Alumni Merit Award from the Miner Alumni Association during a Homecoming celebration held in October via Zoom.

Berry earned a doctor of engineering degree at the University of Kansas in 1980, also holds two master's degrees, one in environmental health engineering from KU (1979) and another in engineering management from Boston University (1975).

A member of the S&T Athletic Hall of Fame, Berry was co-captain of the football team during his playing days, and was named all-conference and honorable mention all-American. He was also a member of Lamda Chi Alpha at UMR. Since his graduation, he has served the campus in a number of capacities, including as a member of the Board of Trustees, as president of the MSM-UMR Alumni Association, as president of the Academy of Civil Engineers and as a member of the Order of the Golden Shillelagh Board of Directors. In 2002, Berry was awarded the university's Presidential Citation for Alumni Service.

Berry currently teaches as an adjunct professor in the CAR EE department and in engineering management. He is a registered professional engineer in three states, has earned numerous awards and distinctions throughout his career. He has also devoted time to several civic organizations in the Rolla, Kansas City and St. Louis areas.

For more information on Academy of Civil Engineers members, visit the website at care.mst.edu/alumni/academyofcivilengineers.

Myers selected as fellow for outstanding contributions in advanced materials

by Nancy Bowles



Dr. Joel Burken, CAEE department chair (pictured left), and Dr. John Myers (pictured right), with his IAAM Fellow certificate in the Kummer Atrium of Butler-Carlton Hall.

Dr. John J. Myers, deputy director of the Missouri Center for Transportation Innovation and professor of structural engineering at Missouri S&T, has been elected as a fellow of the International Association of Advanced Materials (IAAM) in recognition of his research in materials science, engineering and technology.

“John has been a true leader in the field of advanced material development for structural engineering applications and standardization,” says Dr. Ashutosh Tiwari, IAAM secretary general and editor-in-chief of *Advanced Materials Letters*. “His efforts and contributions to the development and deployment of high-performance concrete, polymers and other composites over nearly three decades have extended the service life and sustainability of bridges and other structures. We are proud to have John join our ranks as a fellow of the IAAM.”

According to Sweden-based IAAM, the honor of fellow is conferred upon

deserving researchers around the world who have made significant original contributions to the field of advanced materials science and technology. The IAAM also hopes to motivate young, up-and-coming scientists and engineers to consider research as a long-term career.

“I am humbled and very grateful that a highly respected organization such as the IAAM recognizes my scholarly efforts and contributions,” says Myers. “It is deeply meaningful to me that my research can make a difference around the world.”

Myers joined the faculty at S&T in 1999. In 2019, while serving as associate dean for academic affairs in Missouri S&T’s College of Engineering and Computing, Myers led the development and implementation of the Summer Engineering Research Academy, a partnership with historically black colleges and universities to encourage students

from underrepresented groups to further their education in engineering. “Dr. Myers is a strong contributor to Missouri S&T’s teaching and research mission, and he generously provides his talents and leadership on our campus and globally,” says **Dr. Joel Burken**, chair of civil, architectural and environmental engineering. “We are thrilled that the IAAM recognizes John’s accomplishments, and we are proud that he is a Miner.”

Myers is an honor member of the Academy of Civil Engineers. In addition, he is a fellow of the American Society of Civil Engineers, the American Concrete Institute, The Masonry Society and the International Institute of FRP (fiber-reinforced polymers) in Construction. He is a licensed professional engineer in Missouri, Maryland and Pennsylvania.



ElGawady recognized with international IAAM award

Dr. Mohamed ElGawady, Benavides Faculty Scholar and professor of structural engineering, has been awarded an International Association of Advanced Materials (IAAM) Scientist Award for 2020. According to the Sweden-based organization, the Advanced Materials Medal is conferred upon researchers and scientists working in interdisciplinary fields to recognize their important contributions in the field of advanced materials science, engineering and technology all over the world.



Faculty receive tenure and promotions

Congratulations to our four faculty members who received promotions and/or tenure effective Sept. 1. They are:

Dr. Nicolas Ali Libre, promoted to associate teaching professor, of civil, architectural and environmental engineering

Dr. Lesley Sneed, promoted to professor of civil, architectural and environmental engineering

Dr. Guirong "Grace" Yan, promoted to associate professor of civil, architectural and environmental engineering with tenure

Dr. Xiong Zhang, promoted to professor of civil, architectural and environmental engineering.

CEC AWARD WINNERS

The College of Engineering and Computing held a fall open forum on Oct. 13. **Dr. Richard Wlezien**, vice provost and dean of the college, announced faculty awards during a virtual presentation. Here are the two faculty winners from CAEE.

DEAN'S EDUCATOR:

Dr. Jeffery Thomas, associate teaching professor (Missouri State University). The award recognizes mid-career and beyond faculty for teaching and service excellence.

DEAN'S SCHOLAR:

Dr. Grace Yan, associate professor. The award recognizes early- and mid-career faculty for scholarship excellence.



Khayat chosen for President's Award

University of Missouri **President Mun Choi** announced the recipients of the 2020 President's Awards to faculty members across the four universities of the UM System. Seven faculty members from Missouri S&T were selected based on their exceptional contributions in advancing the university's mission. The recipients were recognized at a Board of Curators meeting, as well as a faculty awards event hosted on their campus.

One of the seven S&T winners was from our department. **Dr. Kamal Khayat**, (pictured above) the Vernon and Maralee Jones Professor of Civil Engineering and director of the Center for Infrastructure Engineering Studies, received his President's Award for Sustained Career Excellence.

Yan named UM System Presidential Engagement Fellow



Dr. Grace Yan, associate professor of civil, architectural and environmental engineering at S&T, was chosen as one of three Missouri S&T faculty members to serve as a UM System Presidential Engagement Fellow during the 2020-21 academic year.

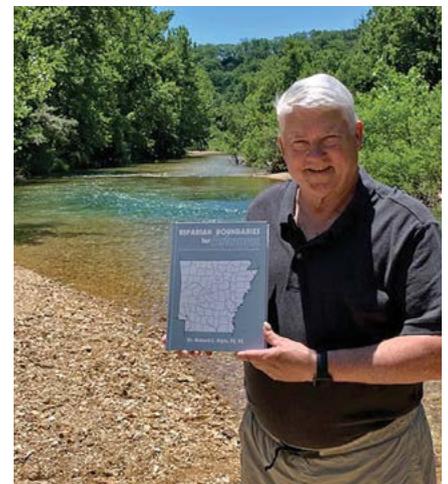
Yan is director of the Wind Hazards Mitigation Laboratory (WHAM) at the university, where she conducts research into wind hazard mitigation and computational fluid dynamics, structural health monitoring, damage detection and more. She's built two small-scale tornado simulators that use models to mimic the destruction of high-speed twisters and is working to build a larger-scale simulator at S&T, planned to be open in summer 2021. She is available to speak about structural health and damage detection, resilient infrastructural systems, smart materials, bridge engineering, and wireless sensor networks.

To request a Missouri S&T Presidential Engagement Fellow speaker at an event, visit umsystem.edu/forms/pef-speaking-request-form.

Sneed to edit engineering journal

Dr. Lesley Sneed, associate professor of civil, architectural and environmental engineering and Stirrat Faculty Scholar, will become associate editor of *Engineering Structures* starting Sept. 1. The journal is published by Elsevier. Sneed will work under the journal's co-editor-in-chief, Dr. Shirley Dyke, professor of mechanical engineering at Purdue University.

Sneed earned a Ph.D. in civil engineering at Purdue in 2007 and joined Missouri S&T's faculty in 2008. In the summer of 2018, she was a visiting fellow of the Institute of Advanced Studies at the University of Bologna in Italy.



Elgin's new book

Dr. Dick Elgin, adjunct professor emeritus, has written another book, *Riparian Boundaries for Arkansas*, which helps define riparian and littoral terms, and describes river movements and the effect on boundaries. The book's research was sponsored by the Arkansas State Surveyor's Office. It will be of great interest to boundary surveyors, real property professionals, the title industry and waterbody regulators. For more information or to purchase the book, contact Dr. Elgin at elgin@mst.edu.

GRADUATE STUDENT ACCOLADES

Pommerenke selected for ACS award in environmental chemistry

Rahel Pommerenke, a master's student in environmental engineering, was among a group of selected students to be awarded a 2020 ACS Undergraduate Student Award in Environmental Chemistry. The award recognizes outstanding students, encourages advancement of chemistry and helps promote careers as chemists.



Pommerenke, EnvE'20, worked as an undergraduate researcher for three years in multiple departments — electrical, geological, and environmental engineering. She served as a student field technician for the USGS Missouri Water Science Center. Her work at USGS included preparing sediment samples from the 2015 and 2017 Missouri Floods, analyzing them for heavy metals (lead, barium and zinc) to map the spread of contaminants by waterways. Pommerenke was also involved with collecting indoor air and groundwater samples in buildings at the Riverfront superfund site. Currently working as a master's student in Dr. Joel Burken's research group, she is learning to do plant sampling to delineate groundwater pollutants, called phytoforensics.

For more information about the award, visit acsenvr.com.

Pourhassan receives Missouri Asphalt Pavement Association scholarship



We are happy to announce that **Alireza Pourhassan**, a graduate student in civil engineering, has been selected by the Missouri Asphalt Pavement Association's (MAPA) Research and Education Fund (REF) as a recipient of a \$1,500 scholarship.

The scholarship was established to recognize students who significantly impact the asphalt construction industry upon completion of their degree program. **Dr. Mohamed ElGawady** is his advisor.

S&T College of Engineering and Computing honors graduate students

Two CArEE Ph.D. students received dean's honors in May from the College of Engineering and Computing (CEC) in recognition of their scholarly contributions and teaching excellence in their field.

"It's a thrill each year to recognize the outstanding contributions made by our graduate students at S&T," says **Dr. Richard Wlezien**, CEC vice provost and dean. "These awards reflect the students' dedication and commitment to excellence as well as the mentorship and inspiration provided by their advisors."

Faculty members in each department nominated students, and a committee comprised of representatives from five CEC departments selected the winners.

The honorees are traditionally recognized with an on-campus reception. This year, the celebration moved online because of restrictions surrounding the coronavirus. The honorees and their faculty advisors are as follows:

CArEE Ph.D. Scholars:



Mohanad Abdulazeez
Focus: structural engineering;
Dr. Mohamed ElGawady, advisor.



Rayan Assaad
Focus: construction engineering and management;
Dr. Islam El-adaway, advisor.

Newest staff members



David Basford, office support assistant IV, is in charge of department budgeting, monthly payroll and account management. He is also the winner of a 2020 CEC Staff Rookie of the Year Award.



Robyn Collier, office support assistant III, is charged with student hiring and hourly payroll, purchasing, reconciliation of accounts and scheduling. She is also an avid crocheter and coffee lover.

Werner earns 15-year service award



Jeannie Werner, graduate office support assistant, was recognized for 15 years of service to our department and the Missouri S&T campus. We truly appreciate Jeannie's dedication and kindness. She is a significant part of our team and we couldn't imagine our workplace without her!



RETIREMENT PARADE HELD FOR DARLENE TURNER

Darlene Turner, business support specialist in civil, architectural and environmental engineering, retired after 35 years of dedicated service to Missouri S&T. The campus community was invited to drive or walk alongside Butler-Carlton Hall through the parking lot to celebrate and wish her well in a parade-style fashion on Tuesday, June 30. Hosting her retirement reception during a pandemic was certainly memorable. We also want to note our appreciation for Turner's dedication, efficiency, resourcefulness, patience and hard work and wish her the "best ever" on her new adventures!

Connect with us.

Email your news to: care@mst.edu

Changing the World



care.mst.edu/overview/strategicplan

In 2012, we set forth our vision and motto, and through the collaboration of our students, staff, faculty, alumni and stakeholders, we stand at the end of that journey with success and tremendous gratitude.

Our four themes below have remained consistent and served as a guide toward our efforts. They have resulted in the many successes noted in this newsletter and over the past eight years.

1. Program Innovations and Opportunities
2. Program Access and Degree Value
3. Faculty Development and Collaborations
4. Recognition and Reputation

Our work is not done, however. We still have plans on the horizon and will be setting bold new strategic goals for the decade ahead — building upon the 150-year legacy started by two civil engineers in 1870.