

THE BRIDGE

Missouri S&T
Spring 2018 | Vol. 40

Civil, Architectural and Environmental Engineering

Steel Bridge Design Team
takes first at ASCE student
conference in Illinois

page 7

MISSOURI
S&T
care.mst.edu

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

I am thrilled to open this issue of *The Bridge* and to share the great things happening in our department. Most of all, I am delighted to announce that the Advanced Construction and Materials Lab (ACML) has been fully funded and remains on schedule (pages 10-11). Recent support from our alumni and industry partners — ARCO Construction Co. and Clayco Inc. — helped complete our fundraising project and their gifts will benefit our students and faculty for years to come. This project will be entirely funded from donations and from the university, without state support. We are proud of this feat, including receiving research funding of more than \$2.3 million to equip and instrument the facility so that the ACML will open being fully functional. The expansion is scheduled to open fall 2019, with the detail design taking place this summer. The design should be bid out in August, with bid openings in late September. All alumni and friends of the department in the construction industry are invited to bid, so please get your “low bids” ready! I hope you can join us Friday, Oct. 12, for the ACML groundbreaking ceremonies during Homecoming.

While we are building, literally, for the future, we also had an exceptional academic year. CAR EE awarded 140 degrees during spring 2018 commencement — among the highest totals we’ve had in one ceremony. We have obviously had a steady stream of talented graduates entering the profession from Rolla for almost 150 years, and this year’s class certainly continued the tradition.

The S&T Steel Bridge Design Team also completed a very strong year, crushing the competition at regionals (page 7). The team is moving on to nationals with a very competitive bridge (competition will be ending as this volume is printing). The S&T Concrete Canoe Design Team also had a strong showing, finishing fourth at regionals. We had students that won first place in the campus research competitions (a few on pages 14-15) and last year we also received three of

15 national scholarships from Chi Epsilon. We had strong leaders graduate from Engineers Without Borders (EWB), including students who traveled to four international project locations, and the Solar House Design Team that finished fourth internationally.

We are also ramping up on a few new efforts. We are looking to increase our graduate student pool and also move our students forward as leaders in the profession. **Dave Wisch**, CE’75, MS CE’77, kicked off the Bayless Fellowship Fund (see back cover) to support S&T undergraduates who want to pursue graduate degrees in Rolla, just like **Jerry Bayless**, CE’59, MS CE’62.

The year 2020 will be the 150th year for civil engineering in Rolla, and we are planning to host events and collect memories. We are updating our department history and adding to our collection of MSM/UMR/S&T memorabilia on display in the atrium. If you have stories or items to share, email us at care@mst.edu. We are off to a great start as **Joe Senne’s** daughter, Jill, and her husband, Bob, drove a load of Joe’s engineering and astrological tools back from California, giving us a great start at a collection for our student leaders’ office. We are in the process of organizing the space and working to update cases.

We also celebrated the addition of 12 new academy members (page 12). I was surprised and humbled to be selected as an honorary member of this incredible group of alumni. I would like to thank Jerry Bayless for the nomination. The reputation and legacy of this department is amazing. However, I was questioning how my team of staff, faculty and alumni managed to keep it a secret ... What else don’t I know? All joking aside, I am deeply honored and even more dedicated to the CAR EE team’s success going forward.

Sincerely,



DEPARTMENT ADMINISTRATION

Department Chair

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

Assistant Chairs

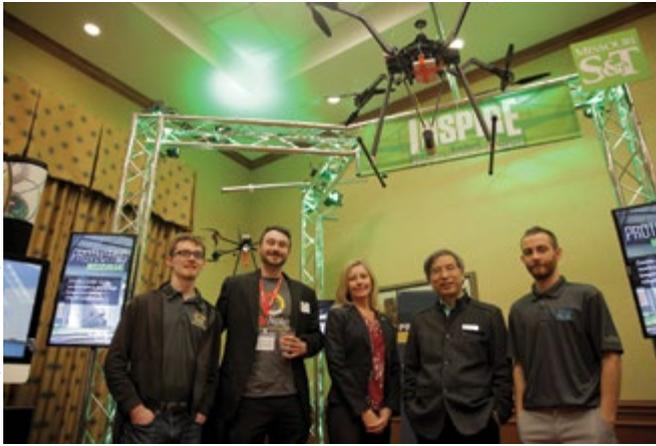
Civil: **Eric Showalter**, Ph.D., P.E.

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

Environmental: **Mark Fitch**, Ph.D.

Graduate Programs: **Cesar Mendoza**, Ph.D.

Photo by University of Missouri System



INSPIRE UTC EXHIBITS AT UM SYSTEM SHOWCASE

The INSPIRE University Transportation Center team joined more than 50 legislators and faculty, staff and students from all four campuses, extension and the health system at the UM System Showcase held in February in Jefferson City. The group, led by **Dr. Genda Chen**, visited with legislators and state agency leaders to share how they are improving the lives of Missourians through their research beyond classrooms and labs and into Missouri communities.

Photo by Sam O'Keefe/Missouri S&T



ST. PAT AND HER COURT

For the first time in its 110-year history, a female student portrayed St. Patrick at Missouri S&T's annual celebration. **Katelyn Jones**, a junior in geology and geophysics from Sugar Creek, Missouri, served as St. Pat. **Jessica Caravello**, (pictured above right), a junior in civil engineering from Crystal Lake, Illinois, was crowned 2018 Queen of Love and Beauty.

Two more students from the department were chosen as part of her court — **Lizzie Sanders**, a senior in civil engineering from Lake Waukomis, Missouri, was chosen as Lady of Honor and Devotion and **Kyle Govro**, a senior in civil engineering from Hillsboro, Missouri, served as a guard.

THE BRIDGE



In this issue

4

Sneed helps lead study abroad course

Giving students the chance to see how political, economic, social, cultural and technical forces in other countries can shape their disciplines, not to mention daily life.

10

ACML gifts

Recognizing ARCO Construction Co. and Clayco Inc. for making major investments in our Advanced Construction and Materials Laboratory (ACML) project.

12

2018 Academy inductees

Twelve professionals with ties to Missouri S&T were inducted into the Academy of Civil Engineers during a ceremony held in April.

17 Stueck Lecture: Dr. Suzanne Lacasse

19 Stephanie O'Sullivan: Life after intelligence

20 Schonberg named Fulbright Chair

21 Libre receives President's Teaching Award

23 Bayless honored by Order of the Engineer

Sneed helps lead study abroad course in southern Africa

by Alan Scher Zagier



“It’s not about sitting in a classroom,” Sneed says. “It was about immersing ourselves in the culture.”

With family trips to Costa Rica, Jamaica and Mexico, and a five-week cultural exchange program in Germany while in high school, senior **Brandon Moore**’s passport already has more than a few stamps.

But when the opportunity to join an independent study course in southern Africa over winter break emerged, the senior from Riverside, California, pursuing both architectural engineering and civil engineering degrees, jumped at the chance.

“I knew this was going to be the trip of a lifetime,” he says. “Since I was on co-op in St. Louis at the time, I was able to put money away each paycheck so I could pay my way to South Africa.”

Dr. Lesley Sneed, associate professor and Stirrat Faculty Scholar of civil, architectural and environmental engineering, accompanied Moore and three other students from the department on the 17-day journey to Cape Town and Johannesburg in South Africa and Victoria Falls on the border between Zambia and Zimbabwe.

They were joined by two geological engineering students from campus and **Dr. Neil Anderson**, a Missouri S&T professor of geosciences and geological engineering who organized a similar faculty-led study abroad trip to the region in 2011 and has visited the continent more than 20 times.

The experiential learning course included ample opportunity to soak up an unfamiliar culture and marvel at the surrounding natural beauty, from mountain hikes



Pictured from left to right:
 Dr. Lesley Sneed, CE
 Christopher Becker, CE
 Nicholas Moran, CE
 Jacqueline Miller, CE
 Brandon Moore, ArchE & CE
 Emily Anthony, GeoE



and gondola rides to visits to big game reserves and outdoor craft markets.

The experiential learning course also gave students a chance to see how political, economic, social, cultural and technical forces in other countries can shape their disciplines, not to mention daily life.

In Cape Town, the students visited one of the main reservoirs in a drought-starved city that is on target to run out of water by early June, if not sooner. When that happens, the municipal water supply will be shut off except for essential services, such as hospitals and public collection points overseen by armed guards.

“It’s not about sitting in a classroom,” Sneed says. “It was about immersing ourselves in the culture.”

“Behind a desk, it’s easy to become complacent and comfortable,” Moore adds. “This trip brought six students together, each of whom has a different point of view on the world, and allowed them the freedom to travel to a new land and create a new perspective for each other.”

Back in Rolla, Moore and the other students must now apply their observations and insights from nearly 9,000 miles away to a research topic of their choosing. For Moore, that means a paper contrasting construction management practices in South Africa to those in the U.S., as well as how safety regulations in the two countries stack up.

For more information on study abroad opportunities at Missouri S&T, including semester or year-long programs at other universities, visit studyabroad.mst.edu.



FUTURE CITY COMPETITION

Enterprising youth from Missouri are trying to make the world a better place. This year teams of sixth, seventh and eighth grade students worked together with their teacher and engineering mentor to plan, design and build a model of a future city. This year's challenge — the Age-Friendly City — asked students to identify an issue older people have and engineer two solutions that allow them to remain active and independent.

Nine teams from across Missouri competed in January at the Missouri Future City Competition hosted by the Kaleidoscope Discovery Center and held in Butler-Carlton Civil Engineering Hall on the Missouri S&T campus. This was the first state competition held in Missouri in 13 years.

Dr. Stuart Baur, assistant chair and associate professor of architectural engineering, was the featured speaker. He discussed the future of sustainable building practices and the S&T Solar Decathlon entries. CA&EE faculty and alumni also served as judges.



GIRLS' DAY OUT

In celebration of Engineers' Week, female leaders of student organizations in our department hosted a Girls' Day Out Event for grades 6-12 from the surrounding area. They watched Dream Big: Engineering Our World — a journey through engineering's greatest wonders and a tale of human grit, aspiration, compassion and the triumph of human ingenuity over life's greatest challenges. The girls were thrilled with building tours and lab equipment demonstrations, and they gained insight into the processes and procedures for design modeling and experimentation.



S&T STEEL BRIDGE TEAM TAKES FIRST

by Peter Ehrhard

Missouri S&T's Steel Bridge Design Team earned first place at the American Society of Civil Engineers' 2018 Mid-Continent Student Conference. The team now qualifies for and will compete at the ASCE national competition May 25-26.

Missouri S&T's team earned five awards at the competition, including first place in economy scoring, second place in construction speed, first place in lightness, second place in efficiency and third place in stiffness.



Photo by Bob Phelan

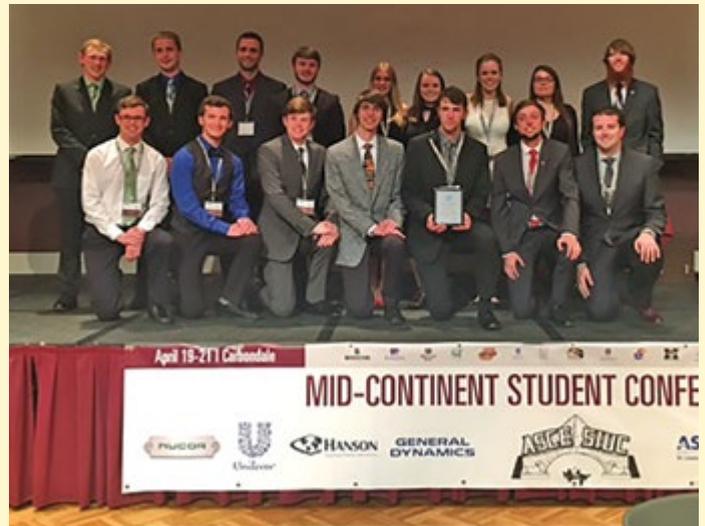
The regional competition was held April 19-21 at the University of Southern Illinois-Carbondale. During the event, the team raced to construct a scale-model steel bridge as fast as possible. This is the first time since 2014 that power tools were allowed for construction.

The bridge was scored on its weight and rigidity, construction speed and the number of team members building the bridge. Each bridge was also "load tested" to prove its weight-bearing abilities.

The competition was scored based on a dollar amount rather than a points system. This scoring simulates the accounting process involved in determining the budget for an actual bridge construction project.

Missouri S&T outpaced the closest competitors!
S&T: \$5.7M; SIUC: \$11.4M; Mizzou: \$15.4M

www.facebook.com/MSTSteelBridge



The following S&T students were a part of the competition:

Luke Biernbaum, a sophomore in metallurgical engineering from St. Louis

Kyle Kentner, a senior in petroleum engineering from Liberal, Missouri

Krista Deffenbaugh, a junior in civil engineering from Lee's Summit, Missouri

Jonathan Kuchem, a senior in civil engineering from Augusta, Missouri

Matthew Duncan, a senior in mechanical engineering from Moberly, Missouri

Ana Messmer, a senior in civil engineering from Festus, Missouri

Ben Dyhouse, a sophomore in architectural and civil engineering from Olathe, Kansas

Brett Murray, a senior in civil engineering from Bolivar, Missouri

Nikk Edgmond, a graduate student in civil engineering from Rolla, Missouri

Lucas Ochs, a junior in mechanical engineering from Lee's Summit, Missouri

Clayton Fritsche, a graduate student in civil engineering from Frohna, Missouri

Paige Oursler, a senior in mechanical engineering from Columbia, Missouri

Gabe Holst, a freshman in metallurgical engineering from Strafford, Missouri

Ben Parr, a senior in mechanical engineering from Old Monroe, Missouri

Michael Janke, a graduate student in civil engineering from Rolla, Missouri

Jordan Pugh, a sophomore in architectural and civil engineering from Pacific, Missouri

Sarah Jemison, a senior in civil engineering from Nixa, Missouri

Alex Schull, a senior in civil engineering from Washington, Missouri

Brendan Judge, a senior in mechanical engineering from Eureka, Missouri

Brittney Kennedy, a senior in civil engineering from St. Charles, Missouri

Multispectral



MISSOURI S&T

Paul Manley, a doctoral student in civil engineering, speaks about his work to enlist drones for environmental research to safely identify mine locations based on changes to plant health.



Doctoral student enlists drones to detect unexploded landmines through changes in plant health

by Alan Scher Zagier

From U.S. Navy laboratories to battlefields in Afghanistan, researchers are lining up to explore the use of unmanned aerial vehicles to detect unexploded landmines. At S&T, civil engineering doctoral student **Paul Manley** is enlisting a third variable — plant health — to see if drones can be used to more safely locate such weapons of destruction.

Manley's Ph.D. research leverages his master's thesis work in biology at Virginia Commonwealth University with the resources of Missouri S&T. In his case, that notably includes the MinerFly support team, which helps researchers such as Manley and thesis adviser **Dr. Joel Burken** with UAV construction, flight tests and navigating Federal Aviation Administration regulations.

"At VCU, Paul's experiments on plant responses to explosives were at the leaf level and in the lab," says Burken, Curators' Distinguished Professor and chair of civil, architectural and environmental engineering. "Now his research can be applied at the field level with the use of UAVs."

The hyperspectral camera Manley favors is no ordinary point-and-shoot. Rather, the device's higher spectral resolution allows for image collection across hundreds of bands that can detect subtle changes in how plants such as corn and sorghum gain or lose water and nutrients, or how they biochemically respond to stress.

"As drought increases, so does the relative temperature around that area," says Manley. "So we can use thermal imaging to see how plants are responding to drought stress. When you add in those hundreds of bands, you can really 'see' how the plants are responding."

The research is funded in part through Missouri S&T's share of a five-year, \$20 million National Science Foundation grant to nine institutions across the state that are teaming up to better understand climate variability and its potential agricultural, ecological and social impacts.

The consortium enables Manley to conduct test flights at locations such as the University of Missouri-Columbia's Bradford Research Center as well as the Southwest Research Center near Mount Vernon, Missouri. Soil, terrain and crop types vary by location.

The project, "Missouri Transect: Climate, Plants and Community" received federal funding from the Experimental Program to Stimulate Cooperative Research (EPSCoR), with a goal of building research teams and expanding research capacity across the state.

Those same sensors are now being pointed toward the topic of detecting landmines and explosives. Existing landmine detection methods are far from ideal, Manley explains.

"Currently, you have people walking around the minefields, leading animals on leashes, tilling up the surface to just detonate the mines and get it over with, or they are using ground-penetrating radar to detect these in the subsurface," Manley says. Another innovative device — constructed from plastic, iron and bamboo, and powered by wind — would need to be replaced each time it detected any of the more than 100 million unexploded landmines across the world.

"These detection methods are really slow, and they're expensive, and they all involve people out in the minefields doing this work, so it's dangerous," he says.

Observing changes in plant health to determine the presence of unexploded landmines is not dissimilar from Manley's earlier work. Over time, he explains, the mine casings can degrade, causing changes in soil properties as compounds then leach into the subsurface.

Explosive ingredients such as TNT and RDX, also known as T4, are "taken up by plants readily," he says.

"RDX gets into groundwater, while TNT tends to stay in the roots. And RDX is readily taken into the leaves."

By combing the knowledge of how plants and chemicals interact and the new technical capabilities to 'see' how plants behave from the sky, Manley aims to have a new approach to help disarm minefields around the globe — and change the world for the better.

Generous partners complete fundraising for \$6.5 million ACML expansion

by Maridel Allinder

ADVANCED CONSTRUCTION AND MATERIALS LABORATORY

When it comes to building a better future, Missouri S&T is paving the way in construction materials and methods. Now, thanks to an investment from the University of Missouri System, major gifts from industry partners and support from alumni, S&T will break ground on the Advanced Construction and Materials Laboratory on Oct. 12.

The lab marks the final phase of a \$10.5 million initiative to advance S&T's leadership in infrastructure engineering. It will provide space for research on next-generation construction products and processes designed to be stronger, more secure and sustainable.

"Infrastructure is the foundation that connects the nation's businesses, communities and people, driving our economy and improving our quality of life," says **Dr. Kamal H. Khayat**, lab director and the Vernon and Maralee Jones Professor of Civil Engineering. "Missouri S&T has strengths in this area and with further emphasis, we can become a best-in-class leader."

The lab received significant support in June 2017 when UM System President **Mun Y. Choi** committed \$1.6 million, identifying the project as a strategic investment for the entire system.

In February, ARCO Construction Co., its founders and a number of S&T graduates employed there made a \$300,000 contribution to the lab. "ARCO stepped up because Missouri S&T — and the S&T alumni who work at ARCO — have been a large part of

our success," says **Dick Arnoldy**, CE'69, MS EMgt'73, retired chairman of the general contracting company, which he co-founded in 1992 with **Jeff Cook**, EMgt'94, president and chief executive officer. The company employs approximately 25 S&T alumni.

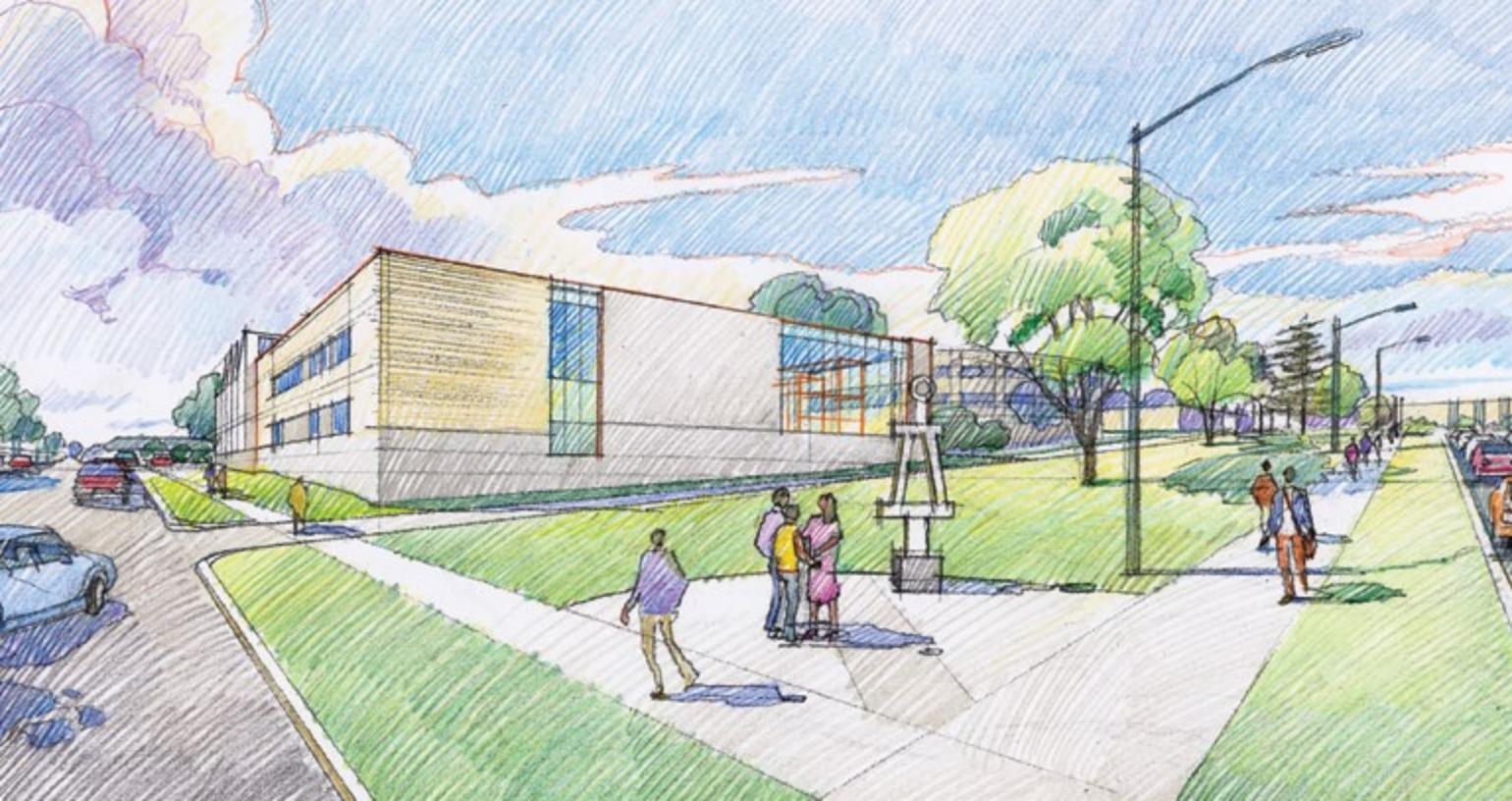
In April, Clayco Inc., one of the nation's largest privately owned real estate, architecture, engineering and construction companies, donated \$2 million, completing fundraising for the lab. The company employs about 35 S&T alumni, including chief operating officer and shareholder **Steve Sieckhaus**, CE'87, MS EMgt'94, and executive vice president and shareholder **Tom Sieckhaus**, CE'88. Their father, **Bob Sieckhaus**, CE'63, is also a Miner.

"Research on next-generation construction materials and methods will have a significant impact on how we design and build in the future," says Steve Sieckhaus. "Investing in this research is a strategic move that will benefit the entire industry."

A U.S. Department of Transportation grant for \$2.5 million in testing equipment completed the first phase of the initiative. The second phase added new faculty positions. The \$6.5 million Advanced Construction and Materials Lab will add 16,000 square feet to the existing high-bay structures lab in Butler-Carlton Hall.

"The lab will be one of the finest research centers in the world for construction materials and methods,"



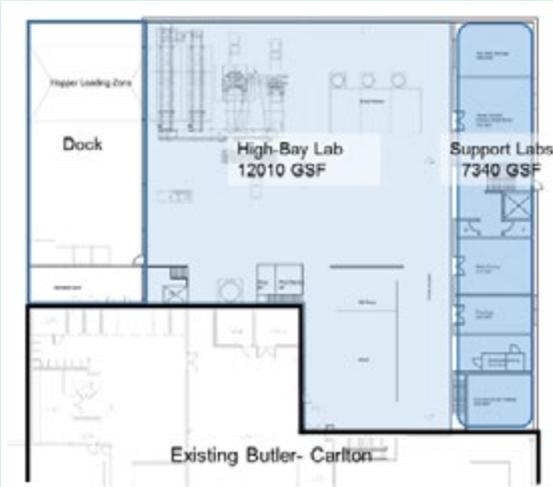
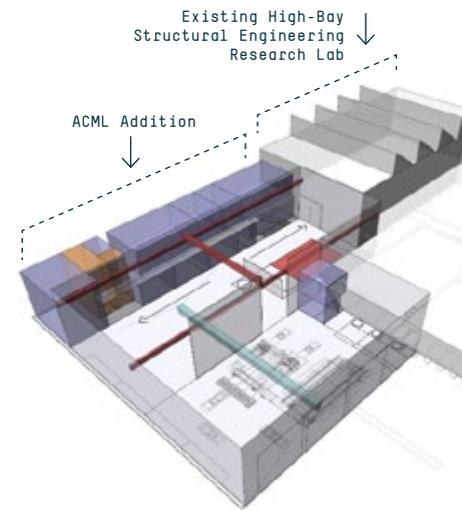


says **Chris Maples**, interim chancellor. "We are grateful to the University of Missouri System, ARCO, Clayco and the other contributors who funded the lab. This support positions Missouri S&T for unprecedented acceleration in an area of leadership and expertise."

The Sunderland Foundation, the charitable arm of Ash Grove Cement Co., was also a major donor. Additional financial support from S&T's College of Engineering and Computing and private gifts including a bequest from **James A. Heidman**, CE'65, MS CE'66, were instrumental to funding the lab.

"Thanks to our donors' generous support, Missouri S&T is rising to the challenge of building a stronger, smarter and safer infrastructure for a more sustainable future," says **Dr. Joel Burken**, Curators' Distinguished Professor and chair of civil, architectural and environmental engineering.

For Tom Sieckhaus, the partnership is a long-term investment in a better future. "The impact of this research will affect the daily lives of millions for generations to come," he says.



SAVE THE DATE!
ACML Groundbreaking Ceremony will be held Friday, Oct. 12, during Homecoming.

Artist rendering and design drawings above courtesy of Christner Inc.

**BUILDING
 A STRONGER,
 SMARTER,
 SUSTAINABLE
 FUTURE**

ACADEMY INDUCTEES 2018

Twelve professionals with ties to Missouri S&T were inducted into the Missouri S&T Academy of Civil Engineers during the academy's induction ceremony, which was held Thursday, April 19, at Hasselmann Alumni House. 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 S&T to reach its collective mission and vision.

Dr. Joel Burken



Dr. Joel Burken of Rolla, Missouri, Curators' Distinguished Professor and chair of civil, architectural and environmental engineering at Missouri S&T. Burken earned bachelor of science, master of science and Ph.D. degrees in civil engineering from the University of Iowa. He joined S&T as an assistant professor in 1997. He has served as coordinator of the environmental engineering program, which became an undergraduate degree in the

department, and was director of the Environmental Research Center. His numerous national awards include the American Academy of Environmental Engineers and Scientists (AAEES) Science Award 2017, being named Fellow in the Association of Environmental Engineering and Science Professors (AEESP), and twice receiving the American Society of Civil Engineers (ASCE) Rudolph Hering Medal for most valuable research contribution in environmental engineering. He is the recipient of seven Faculty Excellence Awards at S&T, the Miner Alumni Association's Alumni Merit Award and the Academy's Joe Senne Award for Outstanding Professor. He served as president of the AEESP board of directors and is currently on the U.S. EPA Science Advisory Board.

Dr. Norm Dennis



Dr. Norm Dennis of Fayetteville, Arkansas, senior associate dean of the College of Engineering at the University of Arkansas, earned bachelor of science and master of science degrees from Missouri S&T in 1971 and 1973, respectively. He also holds a Ph.D. from the University of Texas. An ROTC student at S&T, Norm was commissioned as a 2nd lieutenant in the U.S. Army and retired 24 years later as academy professor and

director of civil engineering design for the U.S. Military Academy at West Point, New York. He had assignments and built facilities in 23 foreign countries and on every continent except Antarctica. After retirement, he joined the University of Arkansas as a professor of civil engineering. In 2015, he moved to the College of Engineering dean's office, where he serves as senior associate dean of engineering. A Fellow in the American Society of Civil Engineers and ASEE, he is a past president of the Society of Military Engineers and has served as a Chi Epsilon faculty advisor for 18 years. A member of the Arkansas Academy of Civil Engineering, Norm is the recipient of the Chi Epsilon James Robbins Award for Teaching, ASEE's George Wadlin Award for Service ASCE's Excellence in Education Award, and the Army Engineer Association's DeFleury Medal.

Dr. John E. Finke



Dr. John E. Finke of St. Louis, manager of the structures department for Jacobs Engineering Group, earned a bachelor of science degree in civil engineering from Missouri S&T in 1989 and a doctor of engineering degree in 2016, both from Missouri S&T. He also holds a master of science degree from Washington University in St. Louis. Finke started his career with Missouri Department of Transportation in the St. Louis construction office, then

moved to the bridge office in Jefferson City. He was involved with the construction of the Route 370 Discovery Bridge over the Missouri River. In 1995, he joined Booker Associates as a structural engineer, where he continued to be involved in the design of numerous bridges for MoDOT. Finke joined Jacobs Engineering Group in St. Louis in 2000 as a structural engineer in the bridge department. He has held his current position since 2006. Finke is a member or past chair of numerous technical and professional societies, including the ASCE Structures and Earthquake groups, the Earthquake Engineering Research Institute and the Structural Engineers Association of Kansas and Missouri. In 2008, he was named ASCE St. Louis Chapter Engineer of the Year. He has also taught evening engineering classes at Southern Illinois University Edwardsville.

Marsia Geldert-Murphey



Marsia Geldert-Murphey of Belleville, Illinois, chief operating officer of W. James Taylor Inc., earned a bachelor of science degree from South Dakota State University in 1992 and a master of science degree from Missouri S&T in 1997, both in civil engineering. She started her career with the Illinois Department of Transportation in Collinsville, Illinois, focused on construction and geotechnical engineering. She served on the field team that supervised

the construction of the Lewis and Clark Bridge in Alton. Geldert-Murphey then entered private practice and rose to the level vice president at SCI Engineering Inc., then co-founded the 100 percent women-owned Kaskaskia Engineering Group, which grew from two employees to 45 in five years. She is an advisory board member at the South Dakota State University civil engineering department and St. Louis University's Parks College of Engineering, Aviation and Technology. She is the current Region 7 director of the American Society of Civil Engineers and a member of ASCE's board of directors. She holds NEPA and Transportation Decision making Process Certification and Context Sensitive Solutions Certification and has received the 2016 ASCE Edmund Friedman Professional Recognition Award, the 2010 St. Louis Most Influential Business Woman Award, the 2010 Smart Women, Smart Money — Women on the Rise Award and the 1997 ASCE St. Louis Section Young Engineer of the Year Award.

Stephanie Hall



Stephanie Hall of St. Louis, program director for the National Geospatial Intelligence Agency's N2W Project, earned bachelor of science degrees in economics and civil engineering from Missouri S&T in 1990 and 1997, respectively. During her 20-plus-year career with the U.S. Army Corps of Engineers, she has risen to program manager of the new \$1 billion western regional headquarters proposed for construction in north St. Louis.

The N2W Project is the responsibility of the Kansas City District, U.S. Army Corps of Engineers. Hall is responsible for planning, design, procurement and construction oversight, and contract management. Prior to the NGA project, Hall held positions with several Corps districts, in Germany supporting U.S. European Commands, in Afghanistan as deputy chief of engineering and construction, and the Corps' Hurricane Protection Office in New Orleans. She has received the Superior Civilian Service Award, the Bronze Order of the DeFleury Medal and the Commander's Award for Civilian Service.

Jeffrey Martin



Jeffrey Martin of Kansas City, the city engineer for Kansas City, earned a bachelor of science degree in civil engineering from Missouri S&T in 1996. Martin began his career in the public works department for the city of Kansas City and has worked his way through various positions of increasing responsibility. He was named city engineer in 2015. A member and past president of the Kappa Alpha Order, Martin is a member of the American Public

Works Association, Standards and Specifications Committee, the FHWA Infrastructure Committee of Missouri Coalition of Roadway Safety, the Missouri Department of Transportation Local Public Agency Committee and has been a presenter at the American Public Works Association National Congress. He is an Eagle Scout and is involved in the Boy Scouts of America Pack 214, is a Liberty Parks and Recreation assistant youth baseball coach, a member of the St. James Catholic School Dad's Committee and the Northland Regional Chamber of Commerce Planning and Development Committee.

Dale Merrell



Dale Merrell of Hillsboro, Oregon, senior civil engineer for CIDA Inc., earned a bachelor of science degree in civil engineering from Missouri S&T in 1967. After graduation, he worked for the state of Washington Department of Transportation, then moved to Alaska for 21 years to work on the North Slope for British Petroleum, as manager and chief engineer for the city of Anchorage's water and wastewater utility, and as a partner

in a consulting engineering firm. Merrell moved back to Washington to serve as manager for an electric utility company, then served as senior civil engineer with a consulting engineering firm. He has taught an advanced placement engineering high school class in Beaverton, Oregon, for many years, serving as a teacher and mentor to 254 high school students, encouraging them to pursue a career in engineering.

Dr. Chris Pantelides



Dr. Chris Pantelides of Salt Lake City, Utah, professor of civil and environmental engineering at the University of Utah, earned master of science and Ph.D. degrees from Missouri S&T in 1983 and 1987, respectively. Pantelides started his academic career as assistant professor of civil engineering at Missouri S&T then became assistant professor at the University of Utah where he was promoted to professor in 2002. He has

supervised 14 Ph.D. and 34 master's students and has published 115 articles in professional journals, 69 technical reports and 170 conference proceedings publications. He holds four patents. Pantelides received over 10 honors or awards including Engineering Educator of the Year from the Consulting Engineers Council of Utah in 1988 and 1989. An ACI Fellow, he has been active in several professional and technical organizations such as a voting member of the ACI Committee on Performance Based Seismic Design of Concrete Buildings, the Joint ACI ASCE Committee on Joints and Connections in Monolithic Concrete Structures, and the Committee on Seismic Design and Performance of Bridges. He also serves as editor of the international journal Construction and Building Materials.

Brian Satterthwaite



Brian Satterthwaite of St. Louis, president of Brinkmann Constructors, earned a bachelor of science degree in civil engineering from Missouri S&T in 1989. He joined Brinkmann Constructors as a project engineer in 1994 and moved through the ranks to become president in 2010. He leads all day-to-day business operations and corporate strategic planning. With more than 28 years of experience in the construction industry, Satterthwaite has

directed and managed construction projects across the country, ranging from large-scale retail and healthcare projects to luxury living and industrial projects. In addition to his work at Brinkmann, he actively participates in Young Presidents Organization, Junior Achievement, and Ronald McDonald House Charities. Professionally, he is active in the Associated General Contractors of Missouri as a member of its Education Foundation Board. In 2015, he was named Outstanding Professional Engineer in Construction by the Missouri Society of Professional Engineers.

Dr. William Schonberg



Dr. William Schonberg of Rolla, honorary member, professor of civil, architectural and environmental engineering, holds a bachelor of science degree in civil engineering from Princeton University and master of science and Ph.D. degrees in civil engineering from Northwestern University in 1983 and 1986, respectively. Schonberg joined the S&T faculty as chair of civil, architectural and environmental engineering in 1999 and held

that position until 2015. Today he is professor and assistant chair for distance education and remote programs. During his 16 years as chair, the department grew from 353 to 542 students, alumni phonathon support increased from about \$33,000 to \$120,000 per year, undergraduate scholarships from 39 to 77, full-time faculty

(continued on the next page)

ACADEMY INDUCTEES 2018 (continued)

grew from 16 to 25. He also spent a year as interim dean, overseeing S&T's administrative change that eliminated the dean structure. Schonberg's research focuses on micrometeoroid and orbital debris damage response and protection ... in other words, knowing the position of space junk and protecting against it. He received the Distinguished Scientist Award from the Hypervelocity Impact Society and two Honor Awards from NASA's Engineering and Safety Center. He is a Fellow in both ASCE and ASME. In 2007, he received the Manuel Pacheco Academic Leadership Award from the University of Missouri System, which honors an academic administrator who exemplifies outstanding academic leadership. He has authored numerous refereed journal publications, conference presentations and technical committee reports.

Raymond Webb



Raymond Webb of Kansas City, Missouri, head of the Operation Green Light for Mid-America Regional Council, earned a bachelor of science degree in civil engineering at Missouri S&T in 1989 and began his career with the Missouri Department of Transportation. Webb progressed through various engineering assignments with MoDOT to become the KC scout director, supervising 42 people with varying backgrounds. A highlight of his career was the successful implementation of the KC Scout Freeway Management System, the largest first-time freeway system deployment in the country. Webb worked on the design and construction of the project and went on to be the director to launch the operations. He is currently the head of the Operation Green

Light for Mid America Regional Council. As the traffic operations manager for the Mid-America Regional Council, Webb led the Operation Green Light program into the operations phase of real-time operations of over 700 traffic signals in the Kansas City Metropolitan region.

Dale Williams



Dale Williams of Overland Park, Kansas, vice president and project director for Black & Veatch's oil and gas business, earned bachelor of science and master of science degrees in civil engineering from Missouri S&T in 1972 and 1973, respectively. Williams retired from Black & Veatch as vice president and project director after a 42-year career that included successfully managing EPC international and domestic projects up to \$500 million in the oil

and gas industry, including the \$6 billion LNG facility. He served as both active and reserve officer in the U.S. Army and attained the rank of first lieutenant. After a few years as a field cost and progress engineer for Brown and Root, he joined The Pritchard Corp. in Kansas City as an estimator and cost engineer. He then transitioned into project management for Pritchard/Black & Veatch where he managed domestic EPC projects in the range of \$20 to \$60 million. Then Williams was appointed vice president and manager of Black & Veatch Oil and Gas Project Controls for both domestic and international projects, then moved back to project management and into the role of vice president and project director.



Pictured from left to right: Amro Ramadan, Yasser Darwish, Alexis Lee, Eslam Gomaa, Sarah Jemison, Ryan Honerkamp and Dr. Joel Burken, department chair.

ACADEMY POSTER CONTEST

Congratulations to our Academy Poster Contest winners.

GRADUATE CATEGORY

FIRST PLACE

Eslam Gomaa

Poster title: "Effects of different curing techniques on the mechanical properties of zero-cement concrete"

SECOND PLACE (TIE)

Yasser Darwish

Poster title: "Impact protection of bridges using metamaterial revolved shell panels"

Amro Ramadan

Poster title: "Assessment and retrofitting of corroded steel H-piles"

UNDERGRADUATE CATEGORY

FIRST PLACE (THREE-WAY TIE)

Ryan Honerkamp

Poster title: "Role of a laboratory tornado simulator in achieving tornado-ready communities"

Sarah Jemison

Poster title: "Compressive behavior of masonry columns confined with fiber reinforced cementitious matrix (FRCM) composites"

Alexis Lee

Poster title: "Developing 100% sustainable controlled low-strength material (CLSM) by using bottom and pond ash"

ACADEMY AWARD WINNERS

The Academy of Civil Engineers celebrated the following alumni, faculty, students and staff at this year's awards ceremony.



Joseph H. Senne Jr. Faculty Teaching and Service Achievement Award
Dr. W. Eric Showalter



Joseph H. Senne Jr. Faculty Scholarly Achievement Award
Dr. Dimitri Feys



CAR E Engineering Exemplary Young Alumni Award
Kyle Darnell, Arch'E'06



CAR E Engineering Exemplary Young Alumni Award
Kurt Haslag, CE'07



Outstanding Ph.D. Student Achievement Award
Mohanad M. Abdulazeez



Outstanding Ph.D. Student Achievement Award
Zuhair Al-Jaberi (Honorable Mention)



Neil Stueck Outstanding Senior Award
Sarah Jemison



CAR E Engineering Outstanding Support Staff Award
Jeannie Werner

Kleinhans named president and ceo of Concrete Reinforcing Steel Institute

The selection committee of the Concrete Reinforcing Steel Institute (CRSI) named **Danielle Kleinhans**, MS CE'99, PhD CE'02, as the 12th president and chief executive officer of the institute effective Nov. 27, 2017. She oversees daily operations and stewards the institute through future advancements within the industry.

"Of the candidates interviewed for this position, Danielle's leadership skills, familiarity with the Institute's mission and membership, and the numerous technical committees on which she has served, were key in the selection process," says Pete Diggs, past chairman of the board of directors and de facto head of the selection committee. "We are confident in our appointment of Danielle."

In 2011, Kleinhans began at CRSI as a staff structural/bridge engineer before assuming the managing director role of the Epoxy Interest Group (EIG). During that time, she was selected as a 2015 recipient of the American Concrete Institute (ACI) Young Member Award for Professional Achievement. She was selected "for contributions to the design and use of concrete in bridges, serving as a liaison with concrete industry institutes, and for her service on ACI technical committees."

Danielle brings 15 years of experience in structural engineering and bridge design. She has held positions at the National Steel Bridge Alliance (NSBA) and the CTLGroup; and began her career at Modjeski and Masters Inc. She earned a bachelor's degree in civil engineering from the University of Alaska-Fairbanks and her master's and Ph.D. degrees in civil engineering from Missouri S&T.

Richardson receives Chi Epsilon national teaching award

by Alan Scher Zagier

A longtime Missouri S&T professor has received the top teaching honor from a national civil engineering honor society.

Dr. David Richardson, Chancellor's Professor of civil, architectural and environmental engineering, received the James M. Robbins Excellence in Teaching Award from the Chi Epsilon national civil engineering honor society.

Dr. Joel Burken, who nominated his colleague, cited a teaching track record that includes 11 separate graduate and undergraduate courses — four of which Richardson created — taken by more than 4,000 students, from large lectures to small lab sessions.

"No matter what size or level of class, or type of student, Dave typically receives some of the highest student ratings for the quality of his teaching in our department," says Burken, Curators' Distinguished Professor and chair of civil, architectural and environmental engineering. "He is continually trying to increase his understanding of the technical material being presented in his courses, and continually trying to be more proficient in his role as the students' learning facilitator.

"As a result, Dave is one of the most respected professionals in concrete and asphalt in Missouri, hosting professional conferences and continuing education for years."

Richardson has taught at S&T since 1984 and has received 18 national and campus teaching awards, as well as 12 faculty and professional awards. He holds three degrees in civil engineering from the university, is a registered professional engineer in two states, a fellow of the American Concrete Institute, and member of the Missouri S&T Academy of Civil Engineers. He also has spent



David Richardson
CE'71, MS CE'73, PhD CE'84

20 years as director of a certification and training program for state transportation workers hosted at S&T and has authored over 60 publications.

His research interests include durability of concrete, use of alternative sustainable materials in concrete and masonry, concrete mix design procedures, concrete aggregate gradation optimization, pavement drainage, asphalt pavement design, asphalt pavement preservation and management, aggregate pavement base characterization, and soil subgrade properties.

"Successful teaching should be viewed as student-learning facilitation," Richardson says. "The successful teacher should be passionate about the subject matter and willing to devote great personal effort in self-education about all aspects of the subject matter.

"The successful teacher also should present coursework from a holistic point of view," he adds. "That means knitting together all aspects of the subject — both theoretical and extremely practical — into a coherent concept, rather than just covering certain individual, seemingly unrelated topics."

Myers named to advisory committee

Dr. John Myers was invited to serve on the International Advisory Committee of the Bridge Engineering Institute. Myers is a professor of civil, architectural and environmental engineering and the associate dean for academic affairs in the College of Engineering and Computing.

Sneed appointed to editorial board

Dr. Lesley Sneed, associate professor and Stirrat Faculty Scholar of civil, architectural and environmental engineering, was appointed to the International Editorial Board of the *ASCE Journal of Composites for Construction*.

Schonberg accepted to AIAA committee

Dr. William Schonberg, professor of civil, architectural and environmental engineering, was accepted to the American Institute of Aeronautics and Astronautics (AIAA) Survivability Technical Committee (SURTC).



The AIAA SURTC promotes the development of survivability as a design discipline for both air and space systems. It also supports academic competitions, publications in the AIAA *Aerospace America* magazine, and the development of specifications, among other topics of interest to the survivability community.

EXPERT ON RISK MANAGEMENT IN ENGINEERING GIVES STUECK LECTURE AT S&T

by Alan Scher Zagier

A National Academy of Engineering member known for her work to highlight statistical rigor and mathematical probability in infrastructure design and risk management presented the 2018 Stueck Lecture at Missouri S&T.

Dr. Suzanne Lacasse, technical director of the Norwegian Geotechnical Institute and a member of the national engineering academies in the U.S., Canada, Norway and France, discussed “Reality-based design for robust geotechnical practice” at 2:30 p.m., Friday, April 20, in Room 125 of Butler-Carlton Civil Engineering Hall. Lacasse illustrated probabilistic and reliability-based design methods with case studies involving dam design, landslide runout, foundations of a historical ship museum and offshore installations.

“The working stress design method based on an overall factor of safety has been used for a long time,” she said. “More recent alternative design methods are the load and resistance factor design method in North America, and the characteristic values and partial safety factors approach in Europe.”

“A more rigorous approach is the reliability-based design approach using a target annual failure probability or target reliability index,” Lacasse added. “This approach has the advantage of reflecting explicitly the uncertainty in the analysis parameters and their correlation.”

A native of Quebec, Canada, Lacasse studied civil engineering at Ecole Polytechnique de Montreal and the Massachusetts Institute of Technology. She is an honorary professor at Tongji University in Shanghai, China, and Zhejiang University in Hangzhou, China, and is the author of over 300 scientific papers. She spent 20 years as managing director at the Norwegian institute before assuming her current role.

The lecture is presented as part of the Neil and Maurita Stueck Distinguished Lecture Series for Civil, Architectural and Environmental Engineering at Missouri S&T. The series is made possible by a fund established by Maurita Stueck to bring additional outside perspectives to S&T students, and to honor her late husband, a 1943 civil engineering graduate of the university.



Dr. Suzanne Lacasse



2018 Stueck Lecture

CALLED UPON BY NEWS MEDIA



Following the tragic bridge collapse in Miami, our own **Dr. John Myers**, professor of civil, architectural and environmental engineering and associate dean of our college, was one of the nation's first

infrastructure experts called upon by the news media to help explain the issues related to the incident. He's pictured above during a Skype interview with Headline News journalist Erica Hill. He's also quoted in an article from the Sinclair Broadcasting Group, which ran on Sinclair's wire service across the nation. wjla.com/news/nation-world/experts-miami-bridge-collapse-terrifying-but-incredibly-rare.

Oerther receives AWWA award, recognized as CEP via eminence

Dr. Daniel Oerther, professor of environmental health engineering, recently received two honors.

The American Water Works Association (AWWA) selected Oerther for the Dr. John L. Leal Award. This award recognizes individuals whose careers exemplify improving water quality and protecting public health. AWWA was founded in 1881 and now includes more than 50,000 members globally. The four prior recipients include members of the National Academy of Engineering (NAE), the 2017 recipient of the Clarke Prize and the City of Grand Rapids.

The namesake, Leal, was the first person to use chlorine to disinfect drinking water in the United States, helping to protect the health and lives of millions for the past 100 years.

Oerther has also been recognized as a certified environmental professional (CEP) via eminence by the Academy of Board Certified Environmental Professionals (ABCEP).

The academy administers the program to recognize highly qualified individuals who possess a bachelor's degree and at least 20 years of applicable professional environmental experience. Fifteen of the 20 years must be in a position of responsible charge or supervision.



TedXMissouri S&T Dr. Grace Yan

During this year's TEDxMissouriS&T, **Dr. Grace Yan**, assistant professor of civil, architectural and environmental engineering, shared her passion about mitigation of hazards induced by tornadoes and the improvement of quality of life in tornado valley through addressing people's common fears. Yan believes tornado resistance is a matter for an entire community to embrace and shared information about her development of a virtual reality visualization tool that will help communities become tornado-ready. She also conducts research on resilient infrastructural systems in multi-hazard environments, structural health monitoring and sensor technologies. Yan has published 32 journal papers and 49 conference papers and is the recipient of 13 research grants.

STEPHANIE O'SULLIVAN: LIFE AFTER INTELLIGENCE

by Alan Scher Zagier

Biding her time in the waters of the Chesapeake Bay while preparing to enter the job market, recent Rolla graduate **Stephanie (Mink) O'Sullivan** responded to a cryptic newspaper classified ad seeking an "ocean engineer."

Little did she know that the help-wanted ad — the work of then-defense contractor TRW — would launch a lengthy career as a U.S. intelligence officer, including more than 15 years with the CIA and culminating in a 6-year stint as principal deputy director of national intelligence before her retirement from federal service in early 2017.

"I thought, 'I'm an engineer. And I'm living on a boat,'" says O'Sullivan, CE'82, who moved to Annapolis, Md., after graduation to temporarily stay with her seafaring parents. "So I put those two together and applied with confidence. ... It was a very lucky accident for me."

O'Sullivan's career took her into the highest corridors of power, from testifying before Congress to helping lead the post-Sept. 11 fight against global terrorism while the country sent troops to Afghanistan and Iraq.

These days, she remains active as a member of The Aerospace Corp.'s board of trustees and a strategic advisor for companies such as Google. The native



Photo by Neil Boyd Photography Inc.

of Cape Girardeau, Missouri, who grew up outside of St. Louis and spent part of her teen years in London, now calls North Carolina home.

"I'm catching up with real life, outside the bubble of intelligence in D.C., and exercising the privilege of having retired, I get to choose who I work with and what I work on," she says.

That includes a return to her alma mater, where O'Sullivan was the keynote speaker in the fall of 2016 at the Expanding Your Horizons conference, a program to boost interest

in science, technology, engineering and mathematics among middle school girls. She also delivered the commencement speech to new graduates in May 2017.

O'Sullivan (who is married to college classmate **Pat O'Sullivan**, EMgt'83), describes a childhood fascination with the order and structure of engineering exhibited by an uncle who designed Mississippi River bridges.

"That's something that is so enduring, and has so many practical and useful functions," she says.



Pictured left to right: the Prakash's, James Mitchell and Vijay Puri, PhD CE'84

PRAKASH LECTURE 2018

Dr. James K. Mitchell, a National Academy of Engineering member and University Distinguished Professor Emeritus at Virginia Tech, presented the Shamsheer and Sally Prakash Distinguished Lecture on May 3.

Mitchell's talk was titled "Geotechnical surprises — or are they?" He highlight three illustrative case histories and discussed how they were reviewed and if what went wrong could have been anticipated.

Bayless awarded highest honor from Chi Epsilon



Jerry Bayless

Chi Epsilon, civil engineering's national honor society, presented **Jerry Bayless**, CE'59, MS CE'62, associate professor emeritus of civil, architectural and environmental engineering, with the Harold T. Larsen Award for Distinguished Service. This is the highest honor given for exemplary service, character, practicality and sociability by the society. Bayless is number 20 to be honored since the first award was given in 1977. This award is made only occasionally.

One of Chi Epsilon's founding members, Harold T. Larsen, had a long-term and profound effect on the society. He served two terms as national secretary-treasurer in the early years, was a member of the supreme council in his late years, and was named councilor emeritus in 1958 and remained as such until his death in 1971. The Harold T. Larsen Award was established by the conclave in 1976 to honor those members who have given outstanding service to Chi Epsilon.

SCHONBERG NAMED FULBRIGHT DISTINGUISHED CHAIR

A Missouri S&T civil engineering professor will lecture and conduct research in Australia as a Fulbright scholar in advanced science and technology.

Dr. William Schonberg, professor of civil, architectural and environmental engineering, has been named a Fulbright Distinguished Chair in Advanced Science and Technology. His appointment begins in January 2019 at the Defence Science and Technology Group, a government agency in Melbourne.

Distinguished chair awards are viewed as among the most prestigious appointments in the Fulbright program, with roughly 40 awarded nationwide each year. The academic exchange program named for the late Sen. J. William Fulbright of Arkansas is open to both American faculty and students.

"I hope that I can serve as a cultural ambassador," says Schonberg, an S&T faculty member since 1999 who spent his first 16 years on campus as department chair and was also an interim dean of engineering. "By working abroad, I can help my students here at Missouri S&T become more aware of how even subtle differences in culture and society can affect international communication and the practice of engineering."

Schonberg's Fulbright research will aim to develop mathematical models to more accurately predict how bridges, buildings and other structures can withstand a physical attack. The Defence Science and Technology Group is a part of the Australian Defence Department and one of the country's largest employers of scientists and engineers.

As distinguished chair, Schonberg will also deliver occasional public guest



William Schonberg

lectures and seminars at local universities and explore long-term collaborations and institutional linkages with Australian universities.

Schonberg has more than 30 years of teaching and research experience in the areas of shock physics, spacecraft protection, hypervelocity impact and penetration mechanics. His research has been applied to a wide variety of engineering problems, including the development of orbital debris protection systems for spacecraft in low Earth orbit, kinetic energy weapons, the collapse of buildings under explosive loads, insensitive munitions and aging aircraft.

Schonberg is a fellow of both the American Society of Civil Engineers and the American Society of Mechanical Engineers and is a Distinguished Scientist of the Hypervelocity Impact Society. He has served on numerous National Academy of Engineering/National Research Council technical committees that have reviewed key issues related to U.S. space exploration, and has been honored by the National Aeronautics and Space Administration on several occasions for his contributions to its programs.

LIBRE RECEIVES PRESIDENT'S AWARD FOR INNOVATIVE TEACHING

by Sarah Potter

University of Missouri System President **Mun Choi** surprised a Missouri S&T faculty member with a President's Award during a faculty meeting held Thursday, March 22.

Dr. Nicolas Libre, assistant teaching professor of civil, architectural and environmental engineering, was recognized as the first recipient of 10 awards that the president gave in 2018.

Choi, accompanied by Missouri S&T Interim Chancellor **Chris Maples**, recognized Libre with the President's Award for Innovative Teaching, which includes a \$5,000 prize. The award celebrates faculty who use innovative teaching methods, including electronic resources or experiential activities that have a major impact on students or faculty.

For the last five years, Libre has incorporated and refined teaching techniques that have improved student learning. Through interactive eBooks published by Apple for mobile devices, students in Libre's classes were able to enhance their learning environments through 3-D models, videos and animations, and homework problems. Libre also shared grading applications with other faculty members to help determine if students are struggling with concepts presented in the classroom. Many of these resources are open source, meaning they are free and reduce the cost of student education.

"Dr. Libre's impact on engineering education at S&T is wide ranging," says **Dr. F. Scott Miller**, teaching professor and associate chair for undergraduates in materials science and engineering at S&T. "He has developed a Mechanics of Materials application that assists students in modelling and understanding, as well as a series of YouTube videos to explain the concepts in his classes that have been viewed

by students all over the world. He is very gracious in sharing his ideas and methods to improve engineering education, and I have deep respect for his methods."

Libre creates video recordings of the material that will be covered in future classes for his students. In his videos, he not only explains the concepts, but also works examples to further imprint the ideas presented in the course.



Nicolas Libre, pictured center, receives his President's Award for Innovative Teaching from UM System President Mun Y. Choi, far right.

The UM System President's Awards are presented annually to faculty members across the four campuses of the UM System who have made exceptional contributions in advancing the mission of the university. Choi will formally recognize Libre during an awards celebration in June.



SNEED HONORED AT PURDUE

Dr. Lesley Sneed, associate professor and Stirrat Faculty Scholar of civil, architectural and environmental engineering, was honored by the Purdue University Civil Engineering Graduate Student Advisory Council (CEGSAC) and delivered the Emerging Leaders Lecture on Friday, Feb. 16. Her lecture was titled, "Navigating the Road to a Successful Academic Career." Dr. Sneed earned her Ph.D. from Purdue in 2007.



Mohamed ElGawady

FACULTY RECOGNIZED FOR SERVICE, EXPERIENTIAL LEARNING AND EXCELLENCE

During a ceremony held on campus Feb. 13, the office of the provost and the office of academic support recognized three of our faculty members for their roles in excellence in teaching, research, service and experiential learning.



Stuart Baur

Dr. Mohamed ElGawady, associate professor of civil, architectural and environmental engineering, was presented a Faculty Excellence Award for his sustained excellence in teaching, research and service. He received a monetary stipend funded by industry and alumni contributions.

Dr. Stuart Baur, associate professor of civil, architectural and environmental engineering, received the Faculty Experiential Learning Award. Baur was recognized for combining learning beyond the classroom with hands-on community service projects, including leading a project to have students create designs for a proposed new animal shelter in Rolla. The Experiential Learning Award recognizes faculty who require undergraduate students to go beyond mastering basic skills and knowledge in the application of that material to problem solving challenges.



Daniel Oerther

Dr. Daniel Oerther, professor of civil, architectural and environmental engineering, received the Faculty Service Learning Award. Oerther was recognized for his work with the U.S. Department of State Diplomacy Lab. The Diplomacy Lab is a public-private partnership that allows the State Department to ‘course-source’ research and innovation related to foreign policy challenges by harnessing the efforts of college students and faculty experts. This award recognizes faculty who involve or influence undergraduate students in academic service learning or community service activities outside the classroom.

KHAYAT RECEIVES ACI WASON MEDAL FOR MOST MERITORIOUS PAPER



Kamal Khayat, at right, receives his award

Dr. Kamal Khayat, the Vernon and Maralee Jones Professor of Civil Engineering and director of the Center for Infrastructure Engineering Studies at Missouri S&T, is a recipient of the American Concrete Institute (ACI) Wason Medal for the Most Meritorious Paper.

The paper, titled “Field Measurements of SCC Lateral Pressure – Toronto 2014 Experimental Program SCC under Pressure,” was authored by N.J. (John) Gardner, Lloyd Keller, Kamal H. Khayat, David A. Lange and Ahmed R. Omran. It contains findings of a field investigation resulting from an international collaboration led by the RE-CAST University Transportation Center.

The Wason Medal for Most Meritorious Paper was founded in 1917 by Leonard C. Wason, past president of ACI, and was presented on March 25, during the ACI Spring Convention in Salt Lake City, Utah.



100 S&T Engineers accepted the Obligation on April 24, as part of the Order of the Engineer.

BAYLESS HONORED BY ORDER OF THE ENGINEER

Jerry Bayless, CE'59, MS CE'62, associate professor emeritus of civil, architectural and environmental engineering, was honored as a 2017 Outstanding Link Coordinator by the Order of the Engineer. Bayless served Link 13 (Region III) from its early establishment by S&T professor **J. Kent Roberts** and members of the Board of Governors. This award was developed by the order in 2013 to recognize the outstanding efforts of Link Coordinators throughout the nation who have provided exemplary service to the Order in development, organization and administration of a Regional Link and their ring ceremonies.

The Order of the Engineer was initiated in the United States to foster a spirit of pride and responsibility in the engineering profession, to bridge the gap between training and experience, and to present to the public a visible symbol identifying the engineer. The Order is not a membership organization; there are no meetings to attend or dues to pay. Instead, the Order of the Engineer fosters a unity of purpose and the honoring of one's pledge to uphold the standards and dignity of the engineering profession and to serve humanity by making the best use of Earth's precious wealth.

Bayless has carried out two ceremonies at S&T most years — one in the spring and one in the fall. He has reported to the governor that handles the Links since the board of governors started the process of connecting with reports. Bayless has been essential in coordinating the ordering of rings and ceremonial materials for the induction members at the annual MSPE meeting. He also helped with a ceremony at the Capitol, where new licensed engineers were recognized and inducted.

Alumni interested in joining the Order of the Engineer, can contact **Dr. Joel Burken** by email at burken@mst.edu.

GRADUATE STUDENT KUDOS

LIN RECEIVES IACIP AWARD

Chuang Lin, a Ph.D. candidate in civil engineering, is a recipient of the 2017 International Association of Chinese Infrastructure Professionals (IACIP) Outstanding Graduate Student Award. IACIP is a U.S. registered, non-profit organization and consists of professionals dedicated to infrastructure and systems development. It aims to support students who demonstrate passion and commitment to the infrastructure profession. Lin was selected among other competitors based on several key factors, including publications, his GPA and references. He was also invited to the student recognition event at the 2018 IACIP annual meeting hosted in January, in Washington, D.C. His advisor is **Dr. Xiong Zhang**.

GHENI AWARDED CERTIFICATE

Ahmed Gheni, a Ph.D. candidate in civil engineering, was awarded a Certificate of Outstanding Contribution in Reviewing by the *Journal of Cleaner Production*. This is an international, transdisciplinary journal focusing on cleaner production, environmental and sustainability research and practice. His advisor is **Dr. Mohamed ElGawady**.



**Civil, Architectural and
Environmental Engineering**
211 Butler-Carlton Hall, 1401 N. Pine St.
Rolla, MO 65409-0030

NON PROFIT ORG.
U.S. POSTAGE
PAID
ROLLA MO
PERMIT # 170

Connect with us.

Email your news to: care@mst.edu

JERRY BAYLESS FELLOWSHIP FUND

When many of us think of civil engineering at MSM, UMR and S&T, one name spans all three of the university's names and bridges generations of Miners and that's **Jerry Bayless**.

We invite you to make a gift in Jerry's name toward cementing his legacy for all future generations of Rolla alumni.

You may go online to make your gift and select the fund under the drop down menu or mail a check to Advancement Services, 1200 N. Pine St., Rolla, MO 65409. Be sure to designate payment to the Bayless Fellowship Fund.

Contact **Dave Wisch** by email at DWisch@chevron.com or **Dr. Joel Burken** at burkena@mst.edu for more information.

MAKE YOUR GIFT ONLINE AT GIVE.MST.EDU

