

Fall/Winter 2020

Shillelagh

For members of the Missouri S&T Order of the Golden Shillelagh

newsletter



A TRANSFORMATIONAL
GIFT FROM OGS FOUNDERS
JUNE AND FRED KUMMER

TOP 10 things to do

on S&T's 150th anniversary website



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Learn why Feb. 24, 1870, and Nov. 6, 1871, are milestones for Miners.

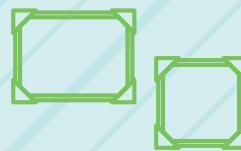


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Order your copy of *Forged in Gold: Missouri S&T's First 150 Years*, available from the S&T Store.

150.mst.edu



Dear Friends,

As OGS founding member **Fred Kummer**, CE'55, said on the day he and his wife, **June**, made headlines with a \$300 million gift to Missouri S&T: "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."

Three days later, when S&T announced a \$10 million gift from longtime OGS members **Bipin Doshi**, ChE'62, MS ChE'63, and his wife, **Linda**, naming the university's chemical and biochemical engineering department, Bipin shared these words: "Missouri S&T is the place where Linda and I met, the place that shaped my career, and the place where lifelong friendships began."

How powerfully these words from Fred and Bipin embody what MSM/UMR/S&T alumni across the miles and years share: a belief in the excellence and promise of a pioneering technical school founded 150 years ago in the middle of Missouri. And how eloquently these words also capture the mission of the Order of the Golden Shillelagh.

This issue of the *Shillelagh* is our first print edition since the onset of the COVID-19 pandemic — and our only print issue for 2020, a year that brought challenges but also many reasons to celebrate, to express gratitude, and to feel a tremendous sense of optimism for what the future holds for our university, the students we serve, and the alumni who make it clear that *Miners Dig Deeper* to make a difference. This year also brought the loss of two well-known members of OGS and the S&T family, **Bob Brackbill**, MinE'42, and **Ted Day**. Their contributions and legacies are indelible.

Within these pages you'll find news on many fronts: two dedications celebrating thousands of square feet of new space for learning, building, designing and advancing research; special events marking the kickoff of the university's 150-year celebration and the Miner Alumni Association's 2020 Homecoming; generous gifts from the Sunderland Foundation, **Petra DeWitt**, Hist'96, two good friends and alumni behind the Joe Miner's Hard Rock Fund, and many others; news about our plans for a campus Arrival District, and updates on groundbreaking research.


You'll also find our first announcement about OGS Weekend planned for June 4–5, 2021, in Rolla. While we tentatively hope to gather in person, please know that our plans will remain in flux for now as we continue to monitor health and safety concerns. Whether we come together for OGS Weekend on campus or online, it will be a special gathering as we welcome new members, recognize members moving into new claghns, and celebrate friendships, traditions and new horizons.

With gratitude,

Joan Nesbitt

Vice Chancellor for
University Advancement





“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.”

June and Fred Kummer’s \$300 million gift to Missouri S&T makes history

Three days before Missouri S&T launched its 150-year celebration in October, a university milestone of unprecedented magnitude made headlines when S&T alumnus and OGS founding member **Fred Kummer**, CE’55, and his wife, **June**, donated \$300 million to the university, the largest single gift in history to a Missouri university — and one of the largest gifts in history to any public university in the United States.

Their gift established The Kummer Institute Foundation, which will support Missouri S&T and the regional economy through the creation of new knowledge and entrepreneurial ventures. The foundation will establish a new school of innovation and entrepreneurship, develop new research centers, provide scholarships and fellowships for students, and more.

“For nearly 150 years, Missouri S&T has been known as the state’s premier technological university,” says Chancellor **Mo Dehghani**. “Now, thanks to June and Fred, S&T will have the opportunity to become one of the nation’s leading universities for innovation.”

“Everything about The Kummer Institute Foundation is focused on innovation and entrepreneurship — just as June and Fred themselves have been throughout the years.”

Fred is the founder and chairman of St. Louis-based HBE Corp., which he established in 1960 with less than \$17,000 in assets and grew into the world's leading design-build firm for health care. His early design-build construction work includes the Gale Bullman Building and Curtis Laws Wilson Library on the S&T campus.

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

A native of New York City, Fred became interested in construction and hotel management early in life. His father was an engineer

with a New York hotel company, and Fred developed his business savvy in the hotel basement, where he and a high school classmate ran a printing press to create menus for restaurants in neighborhood hotels. He attended City College of New York before transferring to Missouri S&T.

While in college at Rolla, Fred worked for a St. Louis architectural firm, where he met June, an architect and graduate of Washington University in St. Louis. He left the university in 1952 to join the Army, married June while in the service and returned to Rolla in 1954 to complete his degree.

The Kummers have been major donors to Missouri S&T for decades. They provided the lead gift for the Kummer Student Design Center, which houses S&T’s student design teams. They also supported the expansion of Butler-Carlton Civil Engineering Hall and Toomey Hall. In recognition of June’s passion for landscaping and gardening, the Kummers funded the Fred and June Kummer Garden at Hasselmann Alumni House.

Fred is a past member of the Missouri S&T Board of Trustees and the University of Missouri Board of Curators. In 2011, he was named to Missouri S&T’s Alumni of Influence inaugural class in recognition of his business success and philanthropic contributions.

The Kummer Institute Foundation will support a number of new initiatives.

“Everything about The Kummer Institute Foundation is focused on innovation and entrepreneurship — just as June and Fred themselves have been throughout the years,” says Dehghani. “Their gift will position S&T as a recognized leader in innovation and entrepreneurial education, and for that we are truly grateful.”



Above: June and Fred Kummer attend the dedication of the Kummer Student Design Center in 2011.

Right: The Kummers' gift in support of Hasselmann Alumni House named the garden.

Opposite: The expansion of Butler-Carlton Civil Engineering Hall is one of many projects the Kummers have supported.





KUMMER INSTITUTE AT A GLANCE

The Kummers' gift has established a not-for-profit foundation, The Kummer Institute Foundation. Funds from the foundation will support several new initiatives of the Kummer Institute.

NEW RESEARCH MOMENTUM

The foundation will establish a new, independent, university-affiliated research and prototype development laboratory modeled after organizations such as the Lawrence Livermore National Laboratory in Livermore, Calif., and the Johns Hopkins Applied Physics Laboratory in Laurel, Md. Four new research centers will focus on infrastructure, advanced manufacturing, artificial intelligence and autonomous systems, and environmental and resource sustainability. The institute will serve as the university's hub for partnerships with industry, public and private research foundations, and governmental agencies to stimulate business innovation and develop prototypes for new products.

THE KUMMER SCHOOL

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

SCHOLARSHIPS, FELLOWSHIPS AND OTHER ENHANCEMENTS

The foundation will launch other new programs and enhancements, including scholarships and fellowships for high-achieving undergraduate and graduate students; expansion of S&T's online degree programs; new research faculty positions; expansion and renovation of existing facilities; construction of new buildings and labs; and greater outreach through student-community engagement, public lectures, 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.

ECONOMIC IMPACT

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 study conducted by the University of Missouri-Columbia. This impact does not include the potential for 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.

ABOUT THE GOVERNING BOARD

The Kummer Institute Foundation will be governed by an eight-member board of directors. In addition to Fred Kummer and Mo Deghani, the board will include **Delbert Day**, CerE'58, S&T Curators' Distinguished Professor emeritus of ceramic engineering and co-founder of Rolla-based Mo-Sci Corp.; entrepreneur and S&T graduate **Gary Havener**, Math'62; **Martin C. Jischke**, former chancellor of Missouri S&T and former president of Iowa State University and Purdue University; **Joseph D. Lehrer**, of counsel with the St. Louis law firm Greensfelder, Hemker & Gale; **George P. "Bud" Peterson**, former president of Georgia Institute of Technology; and **Joan Woodard**, Math'73, a retired senior executive at Sandia National Laboratories. Havener and Woodard are members of the Missouri S&T Board of Trustees.



For more information on The Kummer Institute Foundation visit KummerInstitute.mst.edu.

LINDA AND BIPIN DOSHI

Transforming the academic department that changed their lives

Bipin Doshi, ChE'62, MS ChE'63, always knew he wanted to be an engineer, so after earning bachelor's degrees in chemistry and physics from the University of Bombay, he applied to engineering schools in Australia, England and the United States. While Missouri S&T was not on his original list, when his acceptance to the Colorado School of Mines hit a snag, an advisor recommended that he apply to Rolla.

As Bipin and his wife, **Linda**, like to say, the rest is history. This fall, they made the largest individual contribution to an academic department in university history: a \$10 million gift to the chemical and biochemical engineering department in the College of Engineering and Computing.

"When we sold our business, we set aside money for gifting," says Bipin, the retired chairman, president and CEO of Schafer Industries, a group of manufacturing companies based in South Bend, Ind. "Missouri S&T was at the top of our list. It is the place where Linda and I met, the place that shaped my career, and the place where lifelong friendships began."

The Doshis' gift establishes an endowment, which will name the Linda and Bipin Doshi Department of Chemical and Biochemical Engineering in the College of Engineering and Computing and provide funding for an endowed chair and two professorships. The endowment will also support departmental needs including technology acquisitions and upgrades, fellowships, and seed funding for accelerating research to market.

Linda and Bipin met in Rolla in 1962, when Linda's father, a civil engineer working for the Air Force, attended a summer short course on campus and brought his family along. Bipin was assisting with the course as a student. He and Linda met at a picnic and began a correspondence over the next four years before their marriage. They have two sons and seven grandchildren.

"We've been married for 54 years and what a life it has been," says Bipin. "I was barely 20 when I arrived in Rolla. The university played a huge role in bringing us together."

Bipin launched his career as a research engineer with U.S. Rubber Co., later Uniroyal, and over 25 years of service held many positions, including division vice president. He left Uniroyal

in 1988 to purchase Schafer Gear Works, a manufacturing plant that he and Linda grew into a portfolio of companies known as Schafer Industries, which they sold in 2017.

Bipin is a member of the S&T Board of Trustees and the Academy of Chemical Engineers. He and Linda have returned to campus annually since 1998 for academy meetings and credit these experiences with building enduring friendships.

"The academy re-energized our connection to campus and love for the university," Linda says. "We look forward to academy meetings, as well as trustee meetings and OGS Weekends."

Bipin received an honorary doctorate in engineering and delivered S&T's commencement address in May 2019, and was honored among the university's Alumni of Influence in 2016. In 2010, he and Linda were the first donors to step forward in support of a new chemical and biochemical engineering building after **Jim Bertelsmeyer**, ChE'66, made his gift naming James E. Bertelsmeyer Hall. The Doshis' \$1 million gift named the Frank Conrad Unit Operations Laboratory in memory of Bipin's mentor, advisor and friend.

"As a teacher, Dr. Conrad educated me in engineering principles, business ethics and behavior," says Bipin. "As an advisor, he helped me chart my life path."

While the Doshis knew they wanted to support the department, they spent time researching the best vehicle for that support. This research included an impromptu conversation at a football game with the provost of the University of Notre Dame.

"I asked him how endowed chairs and professorships make a difference," says Linda. "He shared how they help to attract the best faculty scholars by providing funds for research and graduate assistants. Undergraduate students also benefit from a learning environment where great role models teach them to love the subject matter."

For Bipin, naming the department where he studied is a way to come full circle. But, even more important to him, it is a way to inspire other alumni to give.

"We want to be the first in a long line of alumni who step up to name departments."



Photo by Matt Cashore Photography



SUNDERLAND FOUNDATION'S \$1 MILLION GIFT COMPLETES NEW LAB

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

"We are deeply grateful for the Sunderland Foundation's investment," says Chancellor **Mo Dehghani**. "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," says President and Chief Operating Officer **Randy Vance**. "By supporting these types of construction and special interest projects, the Sunderland 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 lab.



HISTORY PROFESSOR ESTABLISHES COLLABORATORY UNDERGRADUATE ASSISTANTSHIP

■ **Petra DeWitt's** journey from Germany to Missouri, student to faculty member, and immigrant to scholar of migration embodies the mission of the S&T Collaboratory: encouraging humanities-based research with the potential to challenge traditional ways of thinking.

DeWitt, Hist'96, S&T associate professor of history, immigrated to the United States from Germany in 1985 with her husband, an American soldier. She became a Missouri resident and soon discovered the state's German-American culture, a legacy reaching back to the early 1800s with the influx

of German immigrants who established communities along the Missouri River valley and in the St. Louis area.

DeWitt eventually turned her experience into scholarship as a specialist in migration and ethnic history. Her book, *Degrees of Allegiance: Harassment and Loyalty in Missouri's German-American Community during World War I*, won the 2012 Missouri Book Award.

Now DeWitt is giving back to future generations of scholars through an endowment in support of the S&T Collaboratory, a digital humanities lab

in the College of Arts, Sciences, and Business. Her endowment established the DeWitt Collaboratory Undergraduate Student Assistantship.

"My goal in creating the endowment was to fund a permanent position dedicated to encouraging humanities students to exchange ideas, solve problems and create innovative projects," says DeWitt, who joined the S&T faculty in 2003 after earning a Ph.D. in history from the University of Missouri-Columbia and a master's degree in history from Truman State University. "The Collaboratory assistantship will encourage the growth of significant, original research in the humanities."

DeWitt writes and speaks frequently about social issues and ethnicity during World War I. She spoke at the National World War I Museum and Memorial in Kansas City on the 100th anniversary of the war's end. Her S&T courses include the Making of Modern Germany, European Migration and Nationalism Formation, and Historiography.

"Dr. DeWitt's historiography class really stood out to me," says **James Trusler**, Hist'16, who teaches at Rolla Junior High School. "Her dedication inspired me to become the best history teacher I can be."

FROM DESIGNING ELECTRONICS TO DESIGNING AN ESTATE GIFT



Gary Robertson, EE'71, says he wasn't sure he belonged at Missouri S&T when he arrived as a freshman from Kansas City in 1968. "I was good at math and science in high school, but all the smart people on campus were intimidating," he says. "I decided maybe I did belong after I aced my first calculus test."

Robertson has worked for nearly 50 years as a design engineer. He started his career with King Radio, a Kansas City-based avionics manufacturer, and eventually went into business for himself, building a regional clientele of manufacturing companies that look to him to design industrial controls and electronic products.

"Design is what I like to do," says Robertson, who has developed electronic products for a number of companies. He is particularly proud of how his designs have stood the test of time. "I recently

learned this is the last year for a welding control I designed 25 years ago," he says. "I'm proud of that because 25-year-old electronic parts are kind of rare."

Robertson has begun to think about retiring, but work keeps intervening.

"I thought this might be my last year and then a new project came along," he says.

As part of his estate planning process, Robertson discovered Deferred Charitable Gift Annuities (DCGAs), a giving option that appealed to him because it provides a guaranteed income for life.

"Since I work for myself and don't have a pension, the big question is always: Will I have enough funds? The gift annuity allows me to give to the university now and still have cash flow. It offers the best of both worlds: an immediate philanthropic impact and an income for life."

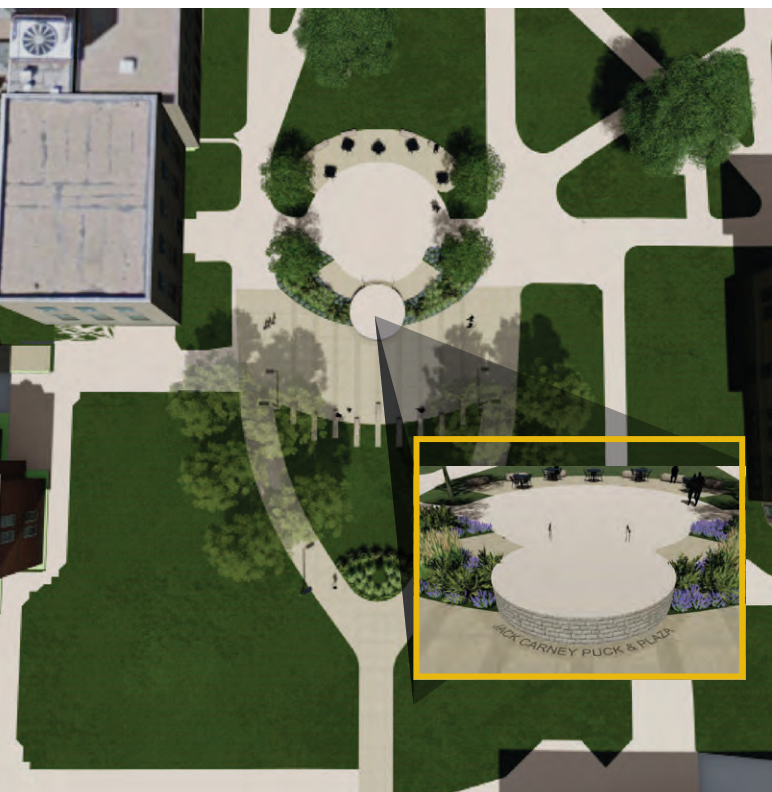
Robertson says his reason for choosing to support Missouri S&T is gratitude.

"The university was a big part of my early life. It formed my world view," he says. "I walk around looking at the world like an engineer. That means I calculate everything, including my shopping route through the grocery store."

Robertson offers the following advice for S&T freshmen.

"Work hard but have some fun," he says. "What I remember most about my years in Rolla is the late nights studying. That and the beautiful fall leaves in the Ozarks."

THREE TRUSTEES LAUNCH INITIATIVE TO HONOR A FORMER CHANCELLOR'S LEGACY



The campus gathering place known as the Puck is familiar to generations of Miners. Now an initiative to transform the Puck into a campus landmark honoring former Missouri S&T Chancellor **John F. "Jack" Carney III** has been launched by three S&T alumni, trustees and OGS members.

Jim Bertelsmeyer, ChE'66, **Roger Dorf**, ME'65, and **Gary Havener**, Math'62, all worked closely with Carney during his tenure as chancellor. Their seed funding launched the project.

Carney served as chancellor from 2005 to 2011 during an era of significant growth for the university. Under his leadership, the campus expanded with the addition of Toomey Hall, the Miner Dome, the Kummer Student Design Center and Innovation Park's first facility. He also secured private funding and bond financing for the construction of Bertelsmeyer Hall.

Carney led the university through a name change in 2008 and a capital campaign, Advancing Excellence, which culminated in 2010 by raising \$128 million in private support. He received the St. Pat's Order of the Emerald upon his retirement in 2011, the Chancellor Medal in 2012, and was named Honorary St. Patrick and St. Pat's parade marshal in 2018. He died on April 24, 2019, at age 77.

The Jack Carney Puck and Plaza will expand the footprint of the existing Puck and raise the visibility of this campus landmark with the addition of a large circular plaza and seating, and new landscaped green spaces featuring native shrubs and grasses.

For more information, contact **Tory Verkamp**, assistant vice chancellor for university advancement, at 573-341-6090 or verkampv@mst.edu.



DONORS FUND ENDOWMENTS HONORING FORMER DIRECTOR OF ATHLETICS

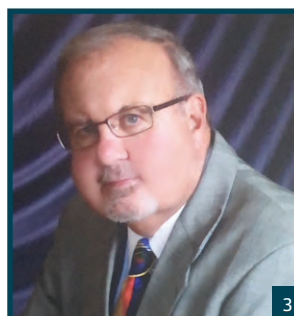
Missouri S&T's longtime director of athletics, **Mark Mullin**, retired in September after nearly 30 years leading Miner athletics. In recognition of his service, alumni have funded two new endowments. The Mark Mullin Jackling Jocks Athletic Scholarship Fund, established by a group of former student-athletes known as the Jackling Jocks, will provide scholarship support. The Mark Mullin Endowment to Support Leadership in Athletics, established by former student-athletes and OGS members **Curt**, GeoE'86, and **Cecilia**, EMgt'86, **Elmore**, will support leadership and professional development programs. Curt, a letterman in cross country and track, joined the S&T geological engineering faculty in 2001 and was named professor emeritus in 2017. Cecilia, who competed on the women's basketball and softball teams, joined the S&T staff in 2001 and served in a number of administrative roles.



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OGS MEMBERS HONORED BY MINER ALUMNI ASSOCIATION

Three OGS members have been honored with Miner Alumni Association 2020 awards. (1) **Robert Berry**, CE'72, and (2) **Charles Copeland**, ME'62, received the Alumni Merit Award, and (3) **Robert Brockhaus**, ME'62, received the Robert V. Wolf Alumni Service Award. Berry is an S&T adjunct professor in engineering management and retired vice president and general manager of the St. Louis region of Burns & McDonnell. Copeland is president and CEO of Goldman Copeland Associates, which has led infrastructure renovations to Grand Central Terminal, the Empire State Building and other New York City landmarks. Brockhaus, managing partner of the Brockhaus Group, was the first faculty member at Saint Louis University to hold the Coleman Foundation Entrepreneurship Chair. When he retired from SLU, friends and colleagues established the university's Dr. Robert H. Brockhaus Chair in Entrepreneurship.



TOM AND CAROL VOSS HONORED WITH NCCJ AWARD

Congratulations to **Tom**, EE'69, and **Carol Voss** on receiving the Metropolitan St. Louis National Conference for Community and Justice (NCCJ) Lifetime Achievement Award, the organization's highest honor. They were recognized for advancing the NCCJ's mission of fostering understanding and inclusion across race, religion and culture. The retired president and CEO of Ameren Corp., Voss is a former member of the S&T Board of Trustees and University of Missouri Board of Curators.

TWO FRIENDS ESTABLISH JOE MINER'S HARD ROCK FUND

S&T alumni and OGS members **Terry Donze**, GeoE'71, and **Hans K. Schmoldt**, GGph'72, GeoE'78, met in Rolla and became Delta Sigma Phi fraternity brothers and friends. After graduation, they both pursued careers in the oil and gas industry — and continued to share a passion for rock collecting. This fall they established Joe Miner's Hard Rock Fund, an endowment supporting the mineral collection maintained by the geosciences and geological and petroleum engineering department. This world-class collection dates back to 1904, when minerals exhibited at the St. Louis World's Fair were donated to the Missouri School of Mines and Metallurgy, establishing a collection that now includes more than 4,500 specimens from 92 countries.



S&T SHINES IN STUDENT ROI

S&T has earned high marks from two organizations that rank students' return on their investment in a college education. Financial planning website Smart Asset ranked S&T No. 1 for best value in Missouri and No. 21 nationally. In addition, S&T was ranked No. 1 in the state and No. 8 in the nation for return on investment by Business Insider, a financial and business news website that researches which colleges give students the best ROI based on tuition and post-graduation salaries.

VIRTUAL CAREER FAIR ATTRACTS RECORD PARTICIPATION

S&T's first virtual Career Fair on Sept. 22 set new records for participation — and a new bar for connecting students with potential employers. While 230 companies participated in the virtual event, collaboration with other universities made it possible for S&T students to engage with a total of 585 companies nationwide. Out of 20,000 virtual appointment slots available during the Career Fair, students filled more than 14,000 of them.



Students practice social distancing at this fall's MinerRama.



While COVID-19 changed the way S&T celebrated the university's 150th anniversary kickoff, it didn't dampen the Miner spirit.

S&T CAMPUS PRACTICES THE 6/10/15 RULE

S&T students returned to campus this semester following guidelines to stop the spread of COVID-19. As a result, the number of reported cases on campus totaled approximately 1% of the student population. In keeping with recommendations from Dr. **Dennis Goodman**, S&T Student Health Services director and chief medical officer, members of the campus community were asked to follow the 6/10/15 rule:

- Maintain 6 feet of social distance at all times (and wear face coverings even when distanced)
- Limit gatherings to 10 or fewer individuals
- Limit close contact with others to less than 15 minutes as much as possible.



While Missouri S&T has grown in extraordinary ways, our campus has never had a point of arrival that makes a lasting first impression, reinforces our brand and reflects our reputation as a nationally recognized technological university.

Now, as S&T celebrates 150 years, we're launching an \$18 million campaign to create an Arrival District, a campus transformation designed to welcome prospective students and visitors to the home of Miner pride, as well as improve campus infrastructure and access to S&T from I-44.

A key component of S&T's 2020 Campus Master Plan, the Arrival District will

connect the university's entry point off Interstate 44 with the campus through a series of landscape and building projects. This transformational project also supports another Master Plan priority: increasing enrollment to 8,000 undergraduates and 4,000 graduate students.

The Arrival District is part of the Move Rolla Transportation Development District

(TDD), a partnership between the city of Rolla, Phelps County, Phelps Health and Missouri S&T. The TDD will realign University Drive along 12th Street to connect to campus and improve access to Bishop Avenue from Interstate 44. Roadways will direct visitors into the university's Arrival District featuring a grand entrance plaza, expansive commons, gardens and walkways.

"We need to do a better job of presenting to the world what we have at Missouri S&T: high-achieving students, distinguished faculty, research leadership and a 150-year history of excellence," says Chancellor **Mo Dehghani**. "The Arrival District will mirror and magnify that excellence by giving our university a fitting front door to our campus and the future."

For more information on the Arrival District, contact **Joan Nesbitt**, vice chancellor for university advancement, at 573-341-7808 or nesbittj@mst.edu.

Milestones and celebrations

A FALL FOR GATHERING IN NEW WAYS

The Miner spirit was strong this fall as we found new ways to celebrate traditions and milestones. The livestream dedications of the Kummer Student Design Center expansion and Clayco Advanced Construction and Materials Laboratory brought donors, alumni, students and university community members together to celebrate. Homecoming and Missouri S&T's 150th anniversary kickoff embraced new formats with a virtual Silver and Gold Happy Hour, a Facebook LIVE event and a virtual fireside chat with **Larry Gragg**, author of *Forged in Gold: Missouri S&T's First 150 Years*. Highlights of our fall festivities follow.

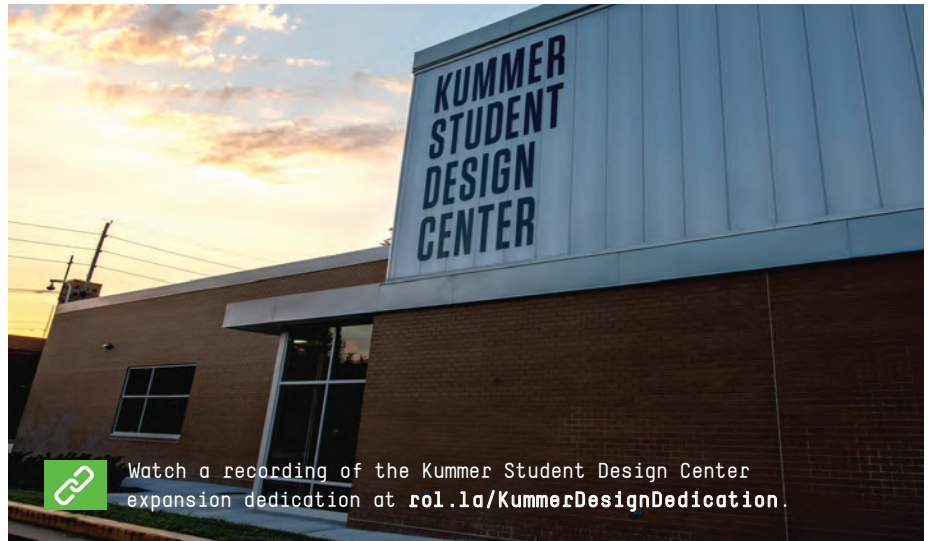
► Doubling the power of design

More than 200 students, alumni, friends and fans joined a livestream on Sept. 11 to celebrate the dedication of the Kummer Student Design Center expansion, an 8,000-square-foot addition that doubled the size of the center.

Alumni and donors **Dick Arnoldy**, CE'69, MS EMgt'73, and **Mike Bytnar**, ME'68, MS EMgt'73, shared their thoughts via video before **Chris Ramsay**, MetE'83, MS MetE'85, assistant vice provost for student design, took attendees on a virtual tour of the expansion, talking with students who represent design teams.

"Our teams have had to adapt to new ways of working and competing in the face of COVID-19," said Ramsay. "But nothing has stopped them from doing what they love: building, testing, breaking, redesigning, optimizing and achieving excellence. The solution-driven Miner spirit is strong. As those who so generously built this center and its expansion know, there is nothing like applied problem-solving and the rigors of competition to give students an edge in the real world."

In a salute to the competitive spirit, the honor of cutting the ribbon went to a student-designed Formula SAE car.



Watch a recording of the Kummer Student Design Center expansion dedication at rol.1a/KummerDesignDedication.



Watch a recording of the Clayco ACML dedication at rol.1a/ACML2020.

► Building a better future

The donors who paved the way to a 16,000-square-foot addition to Butler-Carlton Civil Engineering Hall gathered virtually with the university community on Oct. 16 to dedicate the Clayco Advanced Construction and Materials Laboratory.

"This lab has been at the forefront of our vision for infrastructure engineering

at Missouri S&T for nearly a decade," said **Joel Burken**, Curators' Distinguished Professor and chair of civil, architectural and environmental engineering. "We could not have fulfilled this vision without the financial investment of many generous partners, led by naming donor Clayco."

The lab is the culmination of a \$10.5 million strategic initiative launched in 2012 with a \$2.8 million grant from

the U.S. Department of Transportation to fund testing equipment.

"Civil engineering has been a mainstay of our university since the early 20th century, but its roots are as old as humankind," said Chancellor **Mo Deghani**. "People have always been builders and transporters. The importance of these fundamental activities has not changed across millennia, although methods and materials certainly have. The lab we dedicate today is the 21st century realization of a very ancient dream."

For **Rich Wlezien**, dean of the College of Engineering and Computing, the lab is an investment in one of S&T's greatest strengths — advanced infrastructure.

"The research conducted in this lab has the potential to transform the way we build our nation's future," he said. "These new materials and processes will extend durability, increase sustainability, and reduce overall costs."

Following video comments by representatives of Clayco and ARCO Construction, attendees took a virtual tour of the lab with Burken and **Kamal Khayat**, director of S&T's Center for Infrastructure Engineering Studies and the Vernon and Maralee Jones Professor of Civil Engineering.

"The work of our Center for Infrastructure Engineering Studies will be enhanced tremendously by this research lab," said Khayat. "Now, at long last, we have a lab large enough

to hold all the testing equipment acquired through the Department of Transportation. This consolidation will allow us to continue doing what we have always done: build a better future."

► Homecoming from home

S&T alumni nationwide raised a glass to Miner pride from their homes on Oct. 16 when the Miner Alumni Association hosted a Homecoming tradition in a new format: a virtual Silver and Gold Happy Hour. The gathering featured guest appearances by **Larry Gragg**, author of *Forged in Gold: Missouri S&T's First 150 Years*, and members of S&T's student design teams, who joined live from the Kummer Student Design Center. Read about the alumni association's 2020 award winners, who were honored during S&T's 150th kickoff celebration, at mineralumni.com.

► Marking a milestone

Missouri S&T kicked off its 150th anniversary celebration with a series of special events in October including the Gold Rush Virtual 5K, a 150 Year Kickoff on Facebook LIVE, a Virtual Trivia Night, and a livestream fireside chat from Hasselmann Alumni House with St. Louis Public Radio's **Jonathan Ahl** talking with **Larry Gragg**, author of *Forged in Gold: Missouri S&T's First 150 Years*.

WITH GRATITUDE

Missouri S&T gratefully recognizes the donors to the Kummer Student Design Center expansion and the Clayco Advanced Construction and Materials Laboratory and thanks them for their support.

KUMMER STUDENT DESIGN CENTER

Richard, CE'69,
MS EMgt'73, and
Nancy Arnoldy

Keith, ME'64, and
Patricia Bailey

The Boeing Co.

Brinkmann
Constructors

Michael, ME'68,
MS EMgt'73, and
Joyce Bytnar

Phillip Colombatto,
CE'71, MS EMgt'76

Gary, Math'62, and
Judy Havener

Fred, CE'55, and
June Kummer

Roger, CE'70,
MS CE'73, PhD CE'77,
and Karen LaBoube

Noel, ME'97, AE'97
and Dana Ludwick

Robert ME'68,
MS EMgt'73, and
Linda Mueller

Nucor

Chris, MetE'83,
MS MetE'85, and
Darlene, MetE'84,
Ramsay

David and Ruth
Robertson

The Estate of John
Schork, MetE'47

CLAYCO ADVANCED CONSTRUCTION AND MATERIALS LABORATORY

Thomas Abernathy,
CE'52

ARCO
Construction
Company Inc.

Richard, CE'69,
MS EMgt'73, and
Nancy Arnoldy

*Charles W. "Bill"
Bennett, ME'49

Clayco

Concrete Strategies

Jeffrey, MS EMgt'94,
and Rebecca Cook

*Randy Dreiling,
CE'81

Thomas Feger, CE'69
Geotechnology Inc.

*James A. Heidman,
CE'65, MS CE'66

Samuel, CE'72,
MS CE'73, and
Chrysty Hutson

McDonough
Engineering Corp.

Jimmy, MS EMgt'76,
and Vera Murray

Nucor

*Paul Pender, ME'51

David, CE'74,
MS CE'76, and
Dana Sheahen

The Sunderland
Foundation

University of
Missouri System
and President
Mun Y. Choi

Joseph, EMgt'79,
and Kathleen Vitale

*deceased



Watch a recording of the Missouri S&T 150th anniversary kickoff at rol.1a/150Kickoff.

RESEARCH HIGHLIGHTS

S&T scholar leads \$4 million DOE grant for steelmaking research

Research on how to make steel manufacturing more energy efficient is underway at S&T thanks to a \$4 million grant from the U.S. Department of Energy. The research initiative led by **Ronald O'Malley**, S&T's F. Kenneth Iverson Endowed Chair of Steelmaking Technologies and director of the Kent D. Peaslee Steel Manufacturing

Research Center, is focused on increasing renewable energy usage in steel production. O'Malley and his co-investigator, **Sridhar Seetharaman** of the Colorado School of Mines, are creating a steel production system that combines a hydrogen-reduction reactor for ironmaking with electric furnace melting for steelmaking to reduce the industry's carbon footprint. The grant is part of a DOE investment of \$64 million in 18 projects nationwide.



Chemistry researchers win \$1.5 million NFS award for next-gen spectrometer

Microwave spectrometers are about to be transformed thanks to S&T researchers **Garry Grubbs**, associate professor of chemistry, and **Kristen Donnell**, MS EE'03, PhD EE'10, associate professor of electrical engineering. They received a \$1.5 million award from the National Science Foundation to develop a rotational microwave spectrometer with the power to collect molecular data from many directions simultaneously.

"Only one antenna is currently used for electromagnetic detection in rotational microwave instruments," says Grubbs. "Our new design will have up to five." The added antenna power is a game-changer.



"All that energy is out there radiating in many directions," says Donnell. "By adding more antennae, we'll be able to detect from more directions." Two S&T doctoral students in chemistry and one undergraduate student are members of the research team.





Can AI help reduce the kidney transplant waiting list?

Artificial intelligence is making a difference in many ways. The kidney transplant network may be next. **Casey Canfield**, S&T assistant professor of engineering management and systems engineering, is the primary investigator on a research project that is examining how AI can improve transplant network efficiency.

"To get started, we needed transplant data," said Canfield. "We connected with transplant experts at Saint Louis University Hospital, who are helping us navigate the massive amounts of data related to kidney transplants."

The research team is reaching out to other stakeholders including organ procurement professionals and transplant centers. A \$150,000 grant from the National Science Foundation is funding project planning as Canfield and team explore how AI can save lives.



Robert Marshall Brackbill

Robert Marshall Brackbill, MinE'42, died on May 15, 2020, at age 100. An S&T trustee emeritus, past president of the Miner Alumni Association and member of the Academy of Mines and Metallurgy, Mr. Brackbill (known to many as "Brack") was a petroleum industry pioneer who began his career with Shell Oil Co., drilling in western Oklahoma and the Northwest Territories of Canada. A strong supporter of S&T and Sigma Nu fraternity throughout his life, Mr. Brackbill received an honorary doctor of engineering from S&T in 1983 and was honored among S&T's Alumni of Influence in 2016 for his contributions to the oil and gas industry and the university.

Thomas Edwin "Ted" Day

Thomas Edwin "Ted" Day died on Sept. 14, 2020, at age 59. Mr. Day was an S&T trustee and owner and chief executive officer of Mo-Sci Corp., a glass technology company founded by his father, **Delbert Day**, CerE'58, S&T Curators' Distinguished Professor emeritus of ceramic engineering. Mr. Day received Missouri S&T's Award of Professional Distinction in 2018. He and his wife, **Kim**, have been strong supporters of the university and Rolla community through the TKD Foundation and established the Delbert Day Cancer Institute at Phelps Health in Rolla.



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