

Fall/Winter 2017

Shillelagh

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

newsletter



SADDLING UP
TO CELEBRATE
40 YEARS

JOIN THE TEAM BACKING SOME OF THE BEST TEAMS IN THE WORLD

Join a team of donors who are investing in innovation — and backing some of the best student design teams in the world. With a gift of \$500 or more, you'll be part of Miners by Design, a group of investors focused on the ultimate ROI: turning potential into performance.

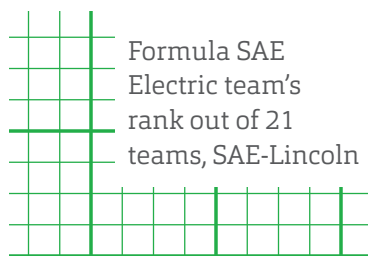
Visit design.mst.edu for more information, or contact **Janice Ridolfi** at jkwv3b@mst.edu or 573-341-4934.

#3



Solar House Design Team's rank in architecture and innovation, #4 among 11 teams, U.S. Department of Energy Solar Decathlon

#4



Formula SAE Electric team's rank out of 21 teams, SAE-Lincoln

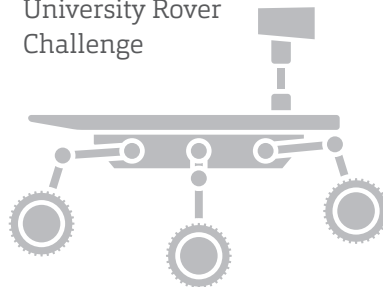
2017 COMPETITION RANKINGS: S&T STUDENT DESIGN TEAMS

#5

Rank of Formula SAE out of 25 teams, SAE-North; 2nd out of 76 teams, SAE-Lincoln

#1

After surpassing 34 teams, Mars Rover Design Team becomes World Champions, University Rover Challenge



#2

Rocket team's rank among 96 teams, Spaceport America Cup



ON THE COVER:

Joe Miner bolo ties made an OGS Weekend fashion statement as members "tied one on" in support of the S&T Solar House Design Team.



Dear Friends,

In October, OGS members gathered in Denver to do something unprecedented: We cheered for our home team at an international student design team competition: the U.S. Department of Energy Solar Decathlon.

This issue of the *Shillelagh* highlights that amazing experience — and everything else that went into our 2017 OGS Weekend. We hiked the famous Red Rocks, saw the sights of Denver aboard a comical old school bus, and explored the Denver Museum of Nature and Science. We decked out in western wear for a frontier night at The Fort and topped it all off with a 40th anniversary dinner celebrating our organization's past, present and future.

But most amazing of all was the Saturday we spent at the DOE's Solar Village, touring solar homes designed and built by the world's top student teams (go Miners!). S&T's entry — known as SILO for Smart Innovative Living Oasis — finished fourth overall and third in two categories: architecture and innovation.

Throughout the weekend, what stood out for me was the camaraderie and passion shared by OGS members, no matter what age or background. From recent graduates who joined OGS as students to alumni and spouses who have been members for decades, our organization shares a remarkable legacy.

This issue introduces you to some of your fellow members. **Bill Bennett**, ME'49, had a fascinating career as an engineer working on classified defense projects around the world. **Gerrie Fletcher**, knowing how much her late husband, **Dale Shull**, Phys'74, MS CSci'99, loved his years at Rolla, has endowed two scholarships, one in his memory and one in honor of his mother. And **Bob Hurst**, MetE'74, MS MetE'77, MS EMgt'84, MS EMch'87, and his wife, **Kathleen**, have established an endowed chair and lab fund through a planned gift.

You'll also find campus news, from the generosity that increased charitable giving to S&T by 37 percent last year, to the technology transfer milestone represented by record-high royalty income. Progress also continues on major projects including the Advanced Construction and Materials Lab, and the renovation and addition that will transform Schrenk Hall into a biosciences complex. Last but not least, don't forget to submit your student memories to 150@mst.edu. A book commemorating the university's sesquicentennial is in the works and it would be great to see OGS well-represented.

In closing, I'd like to thank the Mile High City for perfect weather. The day after our OGS Weekend concluded, a snowstorm arrived. Do you think the patron saint of engineers had anything to do with that?

With Miner pride,

Jim Faletti, EMgt'71, MS EMgt'79
Chair, OGS Executive Committee

OGS TAKES MINER PRIDE TO THE MILE HIGH CITY

Forty years ago, the Order of the Golden Shillelagh planted roots in Rolla and started to grow.

Today the vision of our founders lives on in a growing membership — and in the many students whose lives are touched by the spirit of giving. In October, OGS members gathered in Denver to celebrate our 40th anniversary and cheer for the S&T home team competing in the U.S. Department of Energy Solar Decathlon. Our 2017 OGS Weekend proved to be a celebration of many things: camaraderie, cowboy couture, partnerships, shared purpose — and, most of all, Mile High Miner pride.

1. **Linda and Hugh Cole** earn a best-dressed award for showing their western spirit.
2. An OGS-style welcome to the Mile High City.
3. OGS passengers tour Denver aboard an old school bus transformed into “Banjo Billy’s” traveling lounge.
4. Taking in the scenery on a hike around the famous Red Rocks Amphitheatre.
5. **Tom and MaryLynn Wetteroth** visit the Denver Museum of Nature and Science.
6. Frontier fare and fellowship at 6,100 feet! Back row (left to right): Interim Chancellor **Chris Maples**, **Darlene Ramsay** and **Chris Ramsay**; front row: **Maureen Faletti**, **Hugh Cole**, **Linda Cole** and **Jim Faletti**.
7. **Jim Foil** (left) congratulates **Mitchell** and **Katie Niehoff** on winning a best-dressed award.



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WELCOME

The Order of the Golden Shillelagh welcomes the following new members with gratitude for your support.

Paul & Dana Baldetti
John & Susan Berger
Rick & Susie Booth
Darryl & Robin Brinkmann
Raymond & Jane Buehler
Hal & Kimberly Burch
John & Denise Burgess
James & Diane Butler
Richard & Susan Chapman
Lynn A. Clayberg
Geoffrey Cline
Dan De Riemer & Laura Rosen-De Riemer
Michael T. Doyle & Kimberly K. Denney
Gerrie Fletcher
John H. & Susan E. Gordon
Floyd H. & Nancy G. Hahn
David & Ann Heikkinen
Gary R. & Peggy R. Henderson
Lindell Hurst Jr. & Kathleen Hurst
Richard L. & Barbara G. Jaquay
Gerald & Miriam Kettler
Ralf H. & Carol Kramer
Robert Lankston
Braden T. & Shannon P. Lusk
James Patrick McGrath
Clay E. Melugin & Janet Larson Melugin
Jim & Shanley Rau
Dana & Nancy Reel
Orval Reeves & Alice Beechner Reeves
John & Deborah Roam
Richard & Nancy Schafermeyer
Tom Shoberg & Suzanna Long
Darrin & Sarah Talley
Jon & Pat Vaninger
Tim Victor

8. OGS members tour S&T's entry in the Solar Decathlon, SILO (Smart Innovative Living Oasis).
9. **Andy** and **Lisa Bonnot** visit before the 40th anniversary dinner.
10. S&T senior and Mars Rover Design Team past president **Alyssa McCarthy** speaks at dinner.



Bob and Kathleen Hurst:

LEAVING A LEGACY IN METALLURGICAL ENGINEERING

Photo by George Bridges

Lindell R. “Bob” Hurst, MetE’74, MS MetE’77, MS EMgt’84, MS EMch’87, grew up in the St. Louis area and applied to two universities: Missouri S&T and Purdue.

He says deciding which to attend was easy: “Rolla was just a much better value.”

Hurst made the most of it. “I studied from 6 to 10 p.m. every night with only an occasional trip to the vending machine,” says the summa cum laude graduate, who still found time for what he calls his best college memory: “the friendships I made and still have today.”

After completing his first master’s degree in 1977, Hurst joined Monsanto and spent 17 years working in chemical plants as a corrosion and materials engineer.

“It was my job to help keep the plants running,” he says. “If we had an equipment

problem, I worked with the other staff to get it fixed as quickly as possible.”

During this time, Hurst earned two more S&T master’s degrees in engineering management and engineering mechanics.

“I’ve always been intellectually curious, so it was a good way to keep learning,” he says. “I also thought it was more worthwhile to go to night school than sit in front of the TV.”

Hurst joined Shell Oil Co. in 2006 and spent a decade with the company as a senior corrosion and materials engineer before retiring in 2016. He says the transition was energizing.

“The work at Shell challenged me to get outside my comfort zone,” he says. “I enjoyed learning the oil industry — both upstream and downstream. I also enjoyed the global nature of the job. I worked with people from Argentina, Brazil, the Netherlands, Poland, India, China and many other countries.”

Hurst and his wife, **Kathleen**, a University of Missouri journalism graduate, live in the Houston area. Longtime supporters of the Miner Alumni Association and the metallurgical engineering department, they recently became OGS members when they established the Lindell and Kathleen Hurst Endowment, a planned gift that will support a faculty chair and lab fund in metallurgical engineering.

“I got a very good foundation at Rolla,” says Hurst. “My success would not have been possible without it. We want to give others that advantage.”



Bill Bennett:
PROBLEM SOLVER, TROUBLESHOOTER,
TRAILBLAZER

Photo by K.C. Alfred

It took **Charles W. “Bill” Bennett, ME’49**, more than 60 years to conclude that he spent most of his career as a systems engineer. It wasn’t a job description or discipline that existed in 1944 when he came to Rolla as a 16-year-old freshman.

“Truthfully, I had no idea what an engineer was, much less a systems engineer,” he says.

Bennett worked nights his senior year in high school to pay for college and took a heavy course load (24–27 hours per semester) his first year and a half at Rolla, in addition to serving as editor-in-chief of the student newspaper, the *Missouri Miner*.

“I learned to read galley proofs upside down and backwards and to rapidly spot typos and misspellings,” says Bennett. “In later life, I used to drive my secretaries

INVESTING IN RESEARCH TO STRENGTHEN OUR NATIONAL INFRASTRUCTURE

Bill Bennett's decision to support the Advanced Construction and Materials Laboratory (ACML) is an investment in the final phase of a \$10.5 million research initiative focused on a national priority: meeting the challenge of maintaining our infrastructure, including roads, bridges and railways.

The first phase of the initiative was completed with a U.S. Department of Transportation grant that funded \$4 million in testing equipment. The second phase brought an infusion of expertise and research to S&T with six new faculty members. The final phase, the ACML, will add 16,000 square feet of research space to the existing construction materials labs and the High Bay Structures Lab in Butler-Carlton Hall.

S&T has secured \$3.4 million toward the \$6.5 million lab from alumni and industry partners, and the University of Missouri System has provided another \$1.6 million. S&T is raising the balance. For more information, contact **Shannon De Bourg**, senior development officer, at sbishop@mst.edu or 573-341-4944.

“The education I received at Rolla thoroughly prepared me for my future. I wanted to repay that in some way.”

nuts when I would pass the desk behind their typewriters and casually spot errors as they were typing.”

When Bennett turned 18, he was drafted and spent two years in the U.S. Army. After his discharge in 1947, he returned to Rolla on the GI Bill. He graduated in 1949 with a bachelor of science degree in mechanical engineering and went to work for IBM as a manufacturing plant engineer and later for Knight Machinery as assistant chief engineer and shop superintendent.

With the Cold War era in full swing, Bennett went on to work on classified projects for a number of military contractors, developing a reputation as the guy who could solve any systems problem.

He spent four years working for a company that installed and serviced movie projection equipment on U.S. military bases in Europe and North Africa. Then one of his greatest challenges came after he was recruited to work on “Tall Tom,” an aircraft electronic navigation system. Bennett was the engineer tasked with systems

integration for the classified project, which involved eight military contractors. He also worked as an engineer for North American Aviation, Litton, and Space Technology Labs (later TRW), where he was assigned to a top secret project — today known as Pine Gap Earth Station — near Alice Springs in central Australia.

“Of the 32 ‘Yanks’ (from TRW) who relocated to Alice Springs, all will tell you that our two years there were the highlight of our lives,” says Bennett. “A few years after I retired, I attended a meeting where a Pentagon official called the project the most successful government program ever.”

A long-time supporter of the campus and Miner Alumni Association, Bennett recently made a stock gift in support of the Advanced Construction and Materials Laboratory, a research expansion in Butler-Carlton Hall.

“The education I received at Rolla thoroughly prepared me for my future,” says Bennett. “I wanted to repay that in some way.” ▣



Gerrie Fletcher: MAKING A DIFFERENCE IN HONOR OF DALE AND DAISY SHULL

Gerrie Fletcher (right) with her mother in law, Daisy Shull, namesake of a new Rolla Rising Scholarship.

Dale Shull, Phys'74, MS CSci'99, had two things on his bucket list: provide a scholarship and go into space. He didn't have the chance to do either in his lifetime, but now his widow, **Gerrie Fletcher**, is fulfilling both dreams.

"I heard so many stories about Rolla," says Fletcher. "Dale loved it there. We bought a lot of St. Pat's sweatshirts over the years. I have a stack in my closet."

Last year, Fletcher, a pharmacist for Express Scripts in St. Louis, made a stock gift establishing two scholarship endowments: the Gerrie Fletcher Scholarship in Memory of Dale Shull and the Daisy Shull Rolla Rising Scholarship. The second scholarship is named for Dale's mother, who lives in Ava, Missouri, where he grew up.

"When I told her about the Daisy Shull Scholarship, she was a bit overwhelmed," says

Fletcher. "I know Dale would be pleased that one of the scholarships honors his mother."

Fletcher and Shull met when they were both working in Springfield, Missouri, Fletcher as a pharmacist and Shull as a hospital electronics technician. While there he earned his second bachelor's degree, this time in computer science from Missouri State University. They have a daughter, Amber, and a granddaughter, Pepper, who live in Kansas City.

"Dale served in the Navy after earning his physics degree from Rolla, and that's when he decided to go into computer science," says Fletcher. Shull went on

to earn a master's degree in computer science from S&T and spent more than 30 years with Boeing. He died in 2015.

"Dale worked on proprietary programs so he couldn't say much," says Fletcher. "He always called them his 'science projects.'"

When Fletcher made her scholarship gift, she created two endowments with different intents: the Rolla Rising Scholarship may be awarded to students in any major, while the other scholarship is designated in support of women majoring in one of the physical or life sciences.

"Dale particularly wanted to provide scholarship support for women in science," says Fletcher. "He always felt like we needed more women in science because they are better at working through problems."

Early next year, Fletcher will fulfill her husband's other biggest wish when his ashes are put into orbit on a memorial space flight. "As a young man, Dale dreamed of working for NASA," says Fletcher. "His first love was always space."



ADVANCING INNOVATION WITH A BIOSCIENCES COMPLEX

A priority initiative to establish a biosciences complex at S&T is underway. When completed, the three-phase project will include 10 new labs, four new classrooms, and a four-story atrium connecting Schrenk Hall's renovated west wing (home of chemistry) with a new east wing (home of biological sciences).

The first phase of the project was completed in 2014 with the relocation of chemical and biochemical engineering to Bertelsmeyer Hall, named for **James E. Bertelsmeyer**, ChE'66, who donated \$5 million in support of the project. The second phase — the renovation of the west wing — was funded with \$12 million in state funds and \$8 million from the University of Missouri System and Missouri S&T. The west wing revitalization is scheduled for completion early in 2018.

Fundraising is underway for the third phase — the construction of a new east wing. For more information, contact **Kristen Snyder Gallagher**, executive director of development for the College of Arts, Sciences, and Business, at gallagherkr@mst.edu or 573-341-6050.

EVERYONE HAS A STORY. WE NEED YOURS.

Missouri S&T is turning 150 in 2020, and we need your memories for a new book.

Please share your tall tales, larger-than-life legends and awesome anecdotes. Every story will become part of the University Archives — and some will be included in a commemorative book written by **Larry Gragg**, Curators' Distinguished Teaching Professor emeritus of history.

You have the right to remain silent, but our anniversary celebration will be a lot more fun if you don't. Email your stories to 150@mst.edu or visit magazine.mst.edu/150memories.

CHARITABLE GIVING TO MISSOURI S&T GROWS

Missouri S&T received \$14.7 million in charitable gifts and pledges during the 2017 fiscal year, a 37 percent increase over the previous year. That's a 45 percent increase over the \$10.1 million received in the 2013 fiscal year, which serves as a baseline for the university's strategic goals.

"These charitable gifts come from donors with an abiding belief in the power of education, a deep commitment to giving back, and confidence in the work of Missouri S&T," says **Joan Nesbitt**, vice chancellor for University Advancement. "This is Miner pride and purpose in action, and we are both inspired by and grateful for these financial investments. In particular, we thank the many OGS members whose pivotal support of scholarships, facilities, faculty, and programs continues to provide opportunity and inspire excellence."

A RECORD YEAR FOR TECHNOLOGY TRANSFER

Royalty income reached a record high of \$540,396 at S&T in the 2017 fiscal year. The university also set a record with \$187,998 in royalties paid to inventors and authors, and \$121,177 in royalties paid to departments, an increase of nearly \$25,000 over the previous year. In addition, the number of inventions under consideration for patent protection set a record, with 47 new disclosures including five for software.



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SILO EARNS A 4TH PLACE FINISH AND A POTENTIAL BUYER

S&T's entry in the 2017 Solar Decathlon has earned the ultimate marketplace endorsement: an interested buyer.

The Denver Office of Economic Development has expressed interest in purchasing SILO as affordable housing for moderate-income families. Purchase negotiations are underway. With SILO's success — a 4th-place decathlon finish and a potential buyer — the students who built their dream home are facing a new experiential learning lesson: letting go. "It's a tremendous compliment to the team," says **Chris Ramsay**, MetE'83, MS MetE'85, director of the Student Design and Experiential Learning Center. "But it's also tough to say goodbye." SILO is the first house since S&T began competing in the Solar Decathlon in 2002 that may not return to Rolla: The six previous entries are all located on campus in the Solar and Eco villages.

