

MISSOURI S&T MAGAZINE

SPRING 2011 | VOL. 85 NO. 1

A place to call home
page 28

A PUBLICATION OF THE MINER ALUMNI ASSOCIATION REPRESENTING ALUMNI OF MSM, UMR AND MISSOURI S&T

WELCOME
TO THE
CLUB

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Miner Alumni Association Mission and Goals

MISSION

The association proactively strives to create an environment — embodying communication with and participation by Miner alumni and friends — to foster strong loyalty to the university and growth of the association. The association increases its financial strength and provides aid and support to deserving students, faculty and alumni.

GOALS

- Increase alumni pride in their association with Missouri S&T and the Miner Alumni Association.
- Increase alumni involvement, especially that of young alumni.
- Increase alumni contributions, both in the number of alumni making a financial commitment and in the dollars raised to benefit Missouri S&T and the Miner Alumni Association.
- Strengthen relationships with faculty, staff and students on behalf of the alumni association.

The officers and other members of the association's board of directors provide leadership and personal participation to achieve these goals and fulfill this mission. For their efforts to be a success, they need YOUR active participation as well, in whatever alumni activities you choose.

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Stay connected

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From the editor



Joann Stirtz
Design and Production
Editor

Remember the popular TV show “Our Gang” that later became “The Little Rascals”?

The kids in that show are the first thing that came to mind when I thought about clubs and organizations. The program was a series of American comedy short films about a group of poor neighborhood children and the adventures they had together.

One of my favorite quotes from the show is from Matthew “Stymie” Beard. He says: “I ... Stymie ... Member in good standing of the He-Man Woman Haters Club ... Do solemnly swear to be a he-man and hate women and not play with them or talk to them unless I have to. And especially: never fall in love, and if I do may I die slowly and painfully and suffer for hours — or until I scream bloody murder.”

Today Missouri S&T students don’t have to scream bloody murder, hate women, or take a dying oath to be a part of a group. They can get involved and hang out together in more than 200 recognized clubs or organizations. These students make new friends, gain leadership experiences, build their resumes and plan events that guarantee a good time. There is something for everyone.

Students can race a solar car, cheer on the Miners at a basketball game, run for Student Council, play in the orchestra or see the world while helping others.

Stymie would surely find something fun to do.

He says, “You only meet your once-in-a-lifetime friends ... once in a lifetime.”

MISSOURI S&T MAGAZINE

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Letters to the Editor



Water on the moon is newsworthy again but I doubt the articles will contain any mention of Hughes M. Zenor, director of UMR's Geophysical Observatory back in 1965.

Recent media accounts indicate the plume kicked-up by the crash of NASA's spacecraft on Oct. 9, 2009, contained 41 gallons of ice and vapor. Mission Chief Scientist Anthony Colaprete of the NASA Ames Research Center calculates there could be 1 billion gallons of water in the crater that was hit — enough to fill 1,500 Olympic-sized swimming pools. Colaprete likened the crater to an "oasis in a lunar desert."

Prof. Zenor taught one of my classes in Aerospace Mechanics held in St. Louis. Given his background and credentials, this was an unusual assignment for him but I felt he did a great job.

He spoke of his belief that recent evidence hinted of water on the moon. I don't recall what evidence he might have been referring to. Perhaps it was from Ranger 7's close-range photographic images of the lunar surface. But most of the lunar data available at that time probably belonged to the Soviets obtained from their Luna 2 and Luna 3 missions in 1959, and I'm not sure how much if any of that data was shared with the West.

I recall that Zenor presented his theory at one or more conferences and symposiums and it was not well received (or worse) by those holding (or protecting) more traditional theories. I also seem to recall a personal conversation during that time when he laughingly remarked that some in attendance reacted as though he was suggesting the lunar surface was composed of green cheese.

I'm not sure where Zenor is today, but for me to recall his remarks after nearly a half-century is testimony to the impression he made on this student. Perhaps the crater left by NASA's spacecraft should be named the Zenor crater in recognition of a visionary who believed there was water on the moon more than 45 years ago.

— **Phil McLaughlin, ME'67**
Mount Vernon, Wash.

Gordon Carpenter, ME'49 (students called him Col. Carpenter), was also my professor for advanced analog electronics at California State University, Long Beach. I fondly remember his stories about the military and his time at Rolla. He asked the class this question one day: "Can anyone tell me the voltage potential on the anode of a TV cathode ray tube?" I raised my hand and he nodded to my direction. I asked, "Color or black-and-white TV?" The colonel replied, "Color." I proudly responded "33 to 35kV." The colonel replied, "You are correct!" ... That was in the late 1980s. At the end of each circuit example, he would turn to the class and exclaim, "The circuit tells you everything!" He was so right. I've been working for the same company now for more than 22 years in the field of analog electronics and power design. A career fostered by the teachings of Col. Gordon L. Carpenter, whose textbook resides on a shelf in my office to this day. I can proudly say I was mentored under the auspices of Col. Carpenter — a great teacher and motivator. I wish him well.

— **Carlos Peralta,**
Rancho Palos Verdes, Calif.

Gordon L. Carpenter, ME'49, was my professor at California State University, Long Beach. He was a dynamic teacher with a love for electrical engineering and life. All of his students were lucky to have dealt with Col. Carpenter. We all knew where the University of Missouri at Rolla was before it was over.

— **Robert Roman,**
San Pedro, Calif.
Area maintenance engineer
for BP Pipelines Inc.

I remember seeing Rolla in my rear view mirror as I left town to start the rest of my life. I was focusing on my upcoming military service in Vietnam and whatever came next. I had received a B.S. in civil engineering and a commission as a 2nd lieutenant, but not without some financial support from a scholarship and working a part-time job. It was not easy and I was anxious to close that chapter in my life and move on. That has been many years ago.

As many of us either know or will eventually realize, time goes by rather quickly. After college, there are challenges to deal with and many of us have lost sight of the university that gave us the engineering education and skills to succeed in today's world. I now realize just how important the Rolla education and experience has been to me. Although always challenging and not always comfortable, it did prepare me well for whatever came my way.

Many of us could not have completed our college education without some type of financial assistance and are truly grateful for the importance it played in our success. It can make a real difference in someone's life. There are young men and women who are in need of financial assistance. In the current economic situation, scholarships are needed now more than ever.

I think it is important that we all consider giving back by supporting students who are following in our footsteps. We can give some young person the opportunity of a lifetime and carry on a Miner tradition.

— **Ranney McDonough, CE'66**
Houston, Texas

Congratulations on the "30 Under 30" issue. That should be very useful in recruiting new students from high schools, since it will help them see where they could be in a decade or so.

— **Dan Babcock,**
Rolla
professor emeritus
engineering management



Hank Pernicka

TITLE • associate professor of mechanical and aerospace engineering

AT S&T SINCE • 2001

DESIGN TEAMS HE ADVISES • Formula SAE Team, M-SAT (Missouri Satellite), Miners in Space

LEAST FAVORITE PART OF ADVISING • NASA won't let advisors fly in the near-weightlessness of its "Weightless Wonder" aircraft (with the Miners in Space Team). Only students. Bummer.

M-SAT • The satellite team is at the core of Pernicka's research (spacecraft design and orbital mechanics), so advising M-SAT is a natural fit. The team can compete every two years, but competition is by invitation only. The current competition for Missouri S&T began in January. The team will be testing three satellites — two cooperative and one not in contact. The project will help satellites sync orbits with things like space debris or adversarial spacecraft.

MINERS IN SPACE • Pernicka got a random email offer from NASA advertising a research program on the "Vomit Comet," a fixed-wing aircraft that provides near-weightlessness. He sent it on to his students and they jumped at the chance. They first flew an experiment in 2003, and have flown a total of six times now. Proposals for the next program were submitted in January.

FORMULA SAE • S&T's Formula SAE Team, typically ranked in the top 20 out of more than 400 teams internationally, plans to race in California in June and compete in the Formula Student Germany race in August. Students are working now to raise the funds required to ship a car and a team of students overseas. Pernicka, whose father was a part-time mechanic, grew up fixing cars. "In college, if my car broke, I either fixed it myself or walked." He sees himself as the team's cheerleader. "I can still take my car apart and put it back together, but I can't design a racecar. The students on the team teach themselves and really learn a lot from alumni mentors."

CURRENT RIDE • A 1971 Corvette. Called a "survivor," the car has most of its original parts. Pernicka performs all of the maintenance himself.

Photo by B.A. Rupert

Say What?

“This organism has to **accomplish a classic process** in an extreme situation.”

— **David J. Westenberg**, associate professor of biological sciences, discussing micro-organisms living in extreme environments in the Jan. 20 issue of *New Scientist*.

“Obviously, if a **breakthrough technology is successful**, that’s going to shorten the time a lot.”

— **Yangchuan “Chad” Xing**, associate professor of chemical and biological engineering, discussing his research on lithium-air batteries in the Feb. 3 issue of *The New York Times*.

“It can get very loud ... **much louder than a rock concert**. It’s about the sound of standing next to a jet while it’s running.”

— **Steve Grant**, EE’79, the Wilkens Professor of Electrical Engineering, discussing his research on National Public Radio’s “All Things Considered,” Dec. 21, 2010.

“**CIOs are no longer developing technology.**

Instead, they’re finding IT and putting it together in ways that change the top and bottom lines of their companies.”

— **Ralph Szygenda**, CSci’70, former global CIO at General Motors, Bell Atlantic and Texas Instruments and now a strategic consultant at iRise, a business applications vendor in El Segundo, Calif., in the Jan. 10 issue of *Computerworld*.

by the numbers

207

Recognized student organizations at Missouri S&T. They include academic honor societies, intercultural groups, media and publications, recreation and sports, religious organizations, service organizations, student design teams and more.

6,365

Participants in S&T’s intramural program during the 2009 school year.

15

Awards S&T received from the Council for the Advancement and Support of Education District VI for excellence in alumni relations, fundraising, media relations, advertising, graphic design and student recruitment marketing.

6,447

Students enrolled on the first day of spring semester classes at S&T, up 4.3 percent from last year.

9

Consecutive years S&T enrollment has increased.

86

Ranking for in-state students on the Kiplinger 100 list of public institutions “that deliver a stellar education at an affordable price.” S&T is ranked 84th on the list for out-of-state students.

A man and a woman are posing against a solid red background. Both are wearing black-rimmed glasses and large, light-colored, bulbous fake noses. They also have black fake mustaches. The man on the left has a goatee and is wearing a dark blue zip-up hoodie with a small logo that says "MISSOURI S&T University of Science & Technology". The woman on the right has dreadlocks and is wearing a dark green t-shirt with a white graphic. They are both smiling and have their arms crossed.

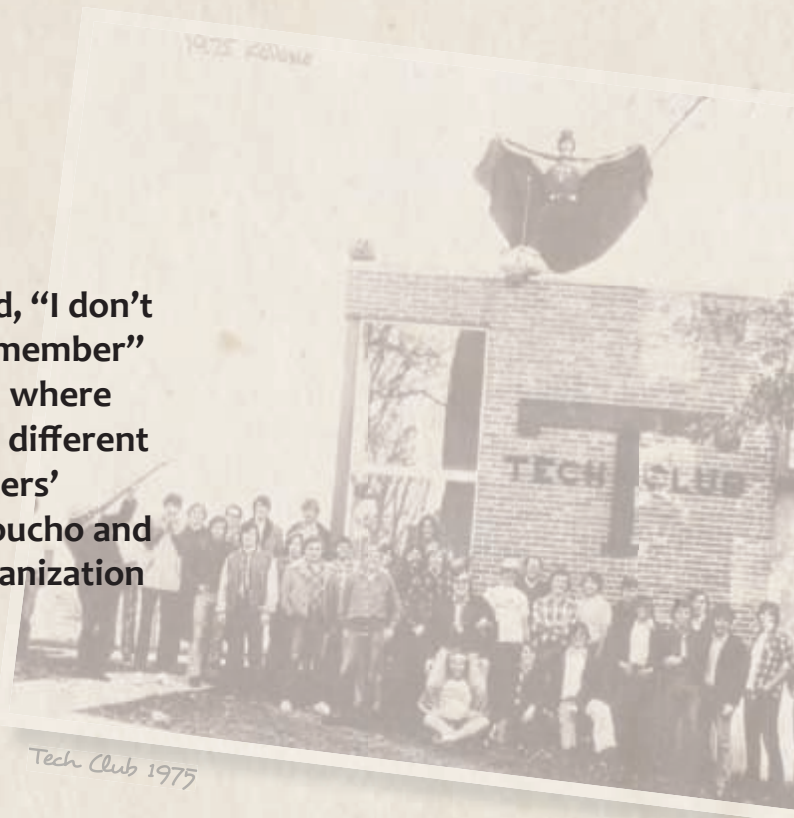
WELCOME TO THE CLUB

**Campus groups expose S&T students
to a whole new world**

by Andrew Careaga (acareaga@mst.edu)

The *Missouri S&T Magazine* staff sends sincere thanks to the staff of the S&T Archives for its contribution to this issue.

Even Groucho Marx, the comedian who quipped, “I don’t care to belong to any club that will accept me as a member” could have found something to do at Missouri S&T, where students are welcome to join any of more than 200 different student organizations. Even during the Marx Brothers’ movie-making heyday — in the ’30s and ’40s — Groucho and his brothers easily would have found a student organization on the Rolla campus where they could fit in.



Tech Club 1975

S&T students have been forming social groups since the campus’s earliest days. According to the campus history book by **Lawrence O. Christensen** and **Jack Ridley**, Missouri S&T Curators’ Teaching Professors emeritus of history, **Gustavus A. Duncan** (class of 1874) “organized what he called a club” in the spring of 1872. Duncan and four other students “rented three rooms over a hardware store, hired a cook, and ‘went to housekeeping,’” creating the precursor to the campus’s popular eating clubs of later years (see story on page 10).

By the early 1930s — as the Marx Brothers were hitting it big with their parody of college life, the movie *Horse Feathers* — the Rolla campus teemed with student organizations. They included literary societies, fraternities, eating clubs, a student newspaper, a yearbook, baseball and football teams, a chapter of the Young Men’s Christian Association, the International Club, the St. Pat’s Board, the Mining Club, the Trowel Club and a group called Quo Vadis, which involved train-hopping and “took as its symbol the hobo.” There was even a theatrical troupe — the MSM Players — for Marx Brothers wannabes.

While you won’t find any train-hopping clubs on campus today, opportunities for S&T students to band together are more diverse than ever. Regardless of which groups a student joins and why, what’s important is that joining matters — not only during the college years but also as students prepare for the future.

Today’s savvy students know that a list of activities looks impressive on a resume, a fact reinforced by S&T’s career opportunities and employer relations staff. But the benefits of joining extend beyond that piece of paper. For **Helene Hardy Pierce**, EMgt’83, getting involved in student organizations helped sharpen her time-management and leadership skills — essentials for success in the classroom as well as in life, she says.

“It comes down to balancing, scheduling and managing your time,” says Pierce, now vice president of technical services, code and industry relations for GAF Materials Corp. based in Wayne, N.J.

Gary Hines, CE’95, agrees. “I had to balance the organization’s needs with my academic and work needs,” says Hines, who held two leadership positions in student

(continued on the next page)



Missouri Miner Beginnings 1916



Gary Hines



Helene Hardy Pierce



Gregory Skannal



groups his senior year. He was president of Chi Epsilon, the civil engineering honor society, and vice president of the American Society of Civil Engineers student chapter, which had about 250 members in those days. Holding these positions “taught me how to prioritize and organize,” he says.

Pierce adds that her involvement in extracurricular activities “also exposed me to a much broader group of students much

Team and the Trap and Skeet Club. Pierce, meanwhile, served on Student Council and was a member of Chi Omega sorority, Sigma Phi Epsilon’s Golden Hearts and the service organization Intercollegiate Knights. She also played and coached intramural volleyball for the McAnerney Hall women’s team.

In addition to preparing students for the world of work, extracurricular activities

In addition to preparing students for the world of work, extracurricular activities help students “learn how to play nice on the playground of life.”

— Helene Hardy Pierce, EMgt’83

more rapidly than I would have through my classroom experience,” another attribute that comes in handy in the workplace. The experience was similar for Hines, who is now vice president of operations for the Southern Gas Association in Dallas. “I learned how to deal with different personalities and manage different needs within the organization,” he says.

In addition to ASCE and Chi Epsilon, Hines was involved with the Steel Bridge

help students “learn how to play nice on the playground of life,” Pierce says. “If you don’t learn how to get along, then you’re just making your life difficult.” In intramurals, for example, “you bring together different people with different skills but they all want to participate.” Being able to work with people from different backgrounds and with different skills is essential to career and life success, she says.

Gregory Skannal, GeoE’85, agrees. Growing up in a predominantly African American neighborhood in Kansas City, Mo., “I didn’t have that much interaction with Caucasian students,” he says. And even though he joined an African American fraternity, Alpha Phi Alpha, Skannal’s involvement in several other student groups allowed him to interact with many students from different backgrounds. He was the only African American majoring in geological engineering at that time, and his participation in the Association of Engineering Geologists allowed him to connect with white and international students, both undergraduate and graduate. “It also broadened my understanding of what I could do with a geological engineering degree,” he says.

While serving as president of Gamma Alpha Delta, a service organization that worked with all campus Greek-letter organizations during Skannal’s years at Rolla, he became friends with a student whose fraternity — Kappa Alpha — has roots in the Confederacy. “That gentleman and I became good friends during that time,” says Skannal, who is now manager of health, safety, security and the

Photo by B.A. Rupert



Alpha Phi Alpha today

Alpha Phi Alpha 1985



Photo by Bob Phelan/Photomasters



Steel Bridge Team today

environment for Hydrogen Energy California, a joint venture company of BP Alternative Energy and Rio Tinto in Long Beach, Calif.

"At the time, I really didn't fully appreciate the value" of interacting with students from different backgrounds, Skannal says, "but it was quite valuable because it introduced me to different music, different styles, different backgrounds, different values and different views.

"That exposure opened my eyes to a new world," he says.

Like Pierce, Skannal was a member of Student Council. He also served on the Interfraternity Council, the Association of Black Students, the National Society of Black Engineers and the Intramural Managers Association.

As Hines, Pierce and Skannal all agree, involvement in student groups proves valuable on many levels. "In Rolla, it's very easy to not get involved — to just stay in your room and study," says Pierce. But getting out of that room and joining an organization will not only introduce students to a new world, as Skannal puts it, but also better prepare them for that world.

Photo by B.A. Rupert



Student radio station
KMNR

"FRITZ" WASMUND
"MAC" MOODIE
"TOOT" MOODIE
"MUDDY" MOODIE
"ATTIE" ATKINSON
"RED" HOPKINS
"EDDY" GRISWOLD
"BILL" HAUCK
"JIMMY" CAYTON
"SURE-SH" LIGHTNING
"OYSTER" TAWM
"HERB" DIE
"PETE" THO
"CY" SEIPERT
"CHALKY" H
ON THE ROAD
BUCK
ES EN ROUTE
"NIE" WANNAMAKER
"HE" WIGHTMAN
"NE" RATHBONE
"IE" STOGSDILL
"SHORT"

Quo Vadis 1924

THE WAY THEY ATE

by Mindy Limback (limbackm@mst.edu)

It was a recipe for disaster.

Walter Lounsbury, AE'78, MS AE'85, lived in his landlord's basement apartment, a small space that had been carved into four little rooms with a common kitchen and bathroom. Despite his lack of cooking skills and a gas oven that had no pilot light, he survived most of his freshman year. He didn't gain the dreaded "freshman 15," but he wasn't starving either.

Then it happened.

"I let the gas run too long before lighting the burner," Lounsbury recalls. "The resulting yreball rolling out of the open oven singed off my eyebrows and woke the other residents in the basement. At that point, joining the Tech-Engine Eating Club was not so much a matter of convenience as saving my residence from certain yre and destruction."

Beginning with the Grubstakers in 1902, eating clubs flourished on campus. Some lasted for only a few years, like Beanery, Corsairs and Placers. Five would reorganize themselves as fraternities: Muckers' Club became Lambda Chi Alpha; Prospectors became Sigma Pi; Grubstakers Club became Triangle; and Mercier Club became Theta Kappa Phi, which eventually became Phi Kappa Theta.

Eating clubs provided students with nutritious meals at reasonable rates. **Harold Bennett**, ChE'60, says he joined the Engineers Club as a sophomore after its business manager, **Ronald Gillham**, ME'56, invited him to join. Dues were about \$1 a day.

"It allowed me to get through college without starving to death," Bennett says. "I had to make all my dimes go a long way, and I certainly enjoyed being in the club."

Fellow club member **Lawrence Gidley**, MetE'55, MS MetE'56, says the dues were cheaper than eating in the

university's cafeteria. With more than 100 members, the club could afford to hire two cooks who prepared "typical meals that you would have at home."

Unlike the Ivy-League eateries that served fanciful delicacies at Harvard or Yale, eating clubs like the Grubstakers, Lucky Strike or Bonanza were founded to provide healthy, home-cooked meals at a minimal cost to Rolla students.

James Berthold, ME'60, says he picked the Prospectors Club in 1956 because "it was the yrst one to accept" him. With many Korean War veterans on campus, the clubs had more applicants than they could take and conducted interviews for membership.

"We elected our own ofycers, one of whom was business manager," says Berthold, who eventually served as club president. "He bought all the food from vendors, and hired and supervised the cooks and

dishwashers. When beans showed up on the menu too often, because the business manager got a great bargain, the members would revolt and elect someone else."

Carl Armstrong, ChE'60, remembers the '49ers serving hearty food like chili mac (one of his favorites at the time). He joined as a senior and enjoyed not having to cook. "I liked the food there," Armstrong says. "In those days, it probably





Shamrock Club 1940

wasn't strong on vegetables and salad. But the prices were reasonable."

In addition to providing good food, the eating clubs offered students an opportunity for fellowship and fun. **Art Baebler**, ME'55, says that with more than 100 members, the Tech Club was larger than any fraternity on campus.

"We also participated in intramural activities," Baebler says. "I was club president my senior year, and we won everything in the intramural sports. We had great influence on what was happening on campus at the time because we were well organized."

Besides friends and recreation, eating clubs also offered plenty of opportunities to share in the St. Pat's festivities, including taking turns creating "Alice," a soupy, slimy concoction that knights of St. Patrick were baptized in.

"Tech-Engine had custody of Alice while I was a member," Lounsbery recalls. "Alice was outside the kitchen, where she received various scraps on a regular basis. We had a lot of fun times."



Tech-Engine Club 1981

Pulling pork — the BBQ Club story

by Lance Feyh (lfeyh@mst.edu)

The Missouri S&T BBQ Club recognizes all styles of barbecue, but their specialty is pulled pork. "There are as many styles and opinions about good barbecue as there are people," says **Kevin Brady**, the club's advisor. "Pulled pork is made from shoulder roasts, sauced with tangy southern sauce, and served on the bun with slaw."

Student Council funded the purchase of a barbecue pit for the club, which was formed in 2007. The group's main philosophical agenda is to distinguish slow-smoked barbecue from grilling and crock-pot cooking. Club members prefer to cook



Photo by B.A. Rupert

Lauren Oswald, Psych'08, prepares BBQ for a group of hungry students.

with a real wood fire, rarely with charcoal or gas. According to Brady, manager of business and fiscal operations for student affairs at S&T, the Rolla area has an abundance of oak, hickory and wild cherry — all excellent barbecue woods.

As a student organization, the BBQ Club provides an out-of-classroom setting for developing interpersonal skills and relationships. And, of course, plenty of pulled pork and other foods are usually at the center of the gatherings.

The club's president is **Evan Thibaud**, a junior from Chattanooga, Tenn., who is studying mining and explosives engineering. Thibaud says the club's motto is "Men will cook if danger is involved," though he concedes there are a few women in the group who help keep things under control. "The girls love the food," he says, "and they like my 'cologne' after a day of smoking."

“I will always
be glad I made
the climb up
those stairs.”

— Jason McHaney, ChE’91



REMEMBER THE *ROLLAMO*

by Lance Feyh (lfeyh@mst.edu)

In the 1980s, **Jason McHaney** saw an ad for yearbook photographers in the student newspaper, the *Missouri Miner*. Though he had his doubts, he decided to go to a meeting to get more information. The offices of the yearbook, the *Rollamo*, were on the third floor of the Rolla Building at the time. “I will always be glad I made the climb up those stairs,” says McHaney, ChE’91. “From my first Alice celebration during St. Pat’s, which I saw through a lens, to the day I found myself sitting on top of cases of ‘my books’ as editor-in-chief, the *Rollamo* is the window through which I saw campus.”

The darkroom where he developed his photos was located in the basement of the Rolla Building, so that’s where McHaney spent a lot of time during his early years on the *Rollamo* staff. And that’s where he discovered boxes and boxes full of old yearbooks. “I was always interested in how there was a feel for different decades,” McHaney says. “I also liked seeing how the students looked, and realizing that these people had gone through the same things I was going through. Reading their accounts of campus events made me realize just how similar we really were.”

In October of 1990, when McHaney was the photo editor of the *Rollamo*, he saw a demonstration of a software called PageMaker. Impressed, he went before Student Council to ask for funds to purchase a new computer that could run the software. “I still remember the day when the computer arrived,” he says. “It was delivered to (history professor and *Rollamo* advisor) **Lance Williams’** office. We loaded it into Dr. Williams’ RX-7 and drove it slowly down the sidewalk toward the Puck and over to Norwood Hall, where the *Rollamo* offices had been relocated.”

The 1991 *Rollamo* was the first in the history of the publication to utilize an electronically submitted layout. According to McHaney, the layout was submitted to the publisher on 20 or so floppy disks.

That 1991 edition was created during McHaney’s last year on campus, when he had become editor-in-chief. At the end of the school year, the publication was still unfinished and most of the staff had left town. McHaney spent the summer finishing the book, but he says it was a nice way for him to say goodbye to Rolla following graduation.

McHaney may have said goodbye to his days as a student in Rolla, but he didn’t really leave his *Rollamo* experiences behind. In fact, he now owns copies of every issue from 1907 to 2007. He started by buying old copies from the 1920s and 1930s that he found on eBay. “It kind of snowballed after that,” says McHaney, who is the process safety management coordinator for Arkema Inc. in Calvert City, Ky. “The archives and alumni offices at Missouri S&T helped me out when I visited campus. The biggest problem has been moving the collection to three houses in two years.”

One of McHaney’s favorite books is the one from 1944 because it was probably the smallest, due to World War II. But, for him, the holy grail was always the very first *Rollamo*, published in 1907. Not too long ago, he contacted the S&T library, hoping to get some leads on where to find a copy. “The staff member I talked to asked me which book I was looking for,” McHaney says. “I told her which one; she took my address and said she would see what she could do. The 1907 issue arrived at my door two days later.”

[illegible]

At the start of each school year, when Missouri S&T's athletic teams gather for their annual NCAA compliance and informational meeting, director of athletics **Mark Mullin** opens the meeting by talking about his expectations for the student-athletes in the program.

Mullin covers a number of topics in his remarks, including academics, sportsmanship and one that some may not immediately attach to athletics — service. It is an area that he puts a strong emphasis on with the student-athletes in the Miner program.

"Communities would not survive without the work of others," Mullins says. "You need volunteers and people finding the time to help, so one of the things I always want to emphasize with our student-athletes is to get involved in service projects and to be someone who can make a difference."

The M-Club at Missouri S&T gives students that opportunity.

To all unto whom these presents may come, Greetings:

Be it known that on the tenth day of January, 1939, the Faculty of Missouri School of Mines and Metallurgy approved the constitution of the "M" Club as a service club on the campus of the School of Mines and thereby established the club. It is hereby certified that those whose names appear below were on the above date members of the "M" Club and therefore its charter members.

— As stated on the charter establishing the M-Club; the document (above) hangs on the wall in the athletics office on campus.



First M-Club



Photo by B.A. Rupert

M-Club today

In the early 1920s, a group of student-athletes came together to form what would become the M-Club. It was not a recognized organization on campus until 1939 and when the charter was approved, a total of 25 student-athletes — eight of whom would later be inducted into the Miner Athletic Hall of Fame — were active members of this fledgling organization.

When it was formed, M-Club's emphasis was on promoting athletics and keeping the alumni in touch with the institution after graduation. Over the years, the organization has evolved to emphasize the betterment of sportsmanship and school spirit. Today, it also lends service and support at athletic events on campus and in the Rolla area.

"I am hopeful for continuous growth in our organization; we were able to significantly increase our membership in this past semester," says **Shelly Ekholm**, M-Club president. "I plan on having this organization continue to gain a strong reputation on campus and within the athletic department. I am very excited about what lies ahead."

"I really wanted to get involved in the community," says **Katie Herington**, a member of the volleyball team and former president of the organization. "I joined M-Club because I knew that since it was run by my peers, there would be a lot of organization and dedication. That's what it takes to be a student-athlete."

Current M-Club members have been involved in part with the university's Student-Athlete Advisory Committee in raising funds for the Make-A-Wish Foundation. According to

Herington, M-Club donated more than \$700 to the organization last year, raising a good portion of the money with a trivia night and a semi-formal dance it sponsored.

In addition, M-Club members have also assisted local elementary schools with events, officiating youth sporting contests. They also have assisted with the Optimist Club in Christmas tree sales in the parking lot at the local Kroger and have volunteered at the Tri-County Humane Society in St. James. M-Club, whose sponsor is **Sarah Moore**, assistant director of athletics, has also been prominent in assisting with the Special Olympics and Junior Olympics events during the spring semester.

Members are required to do five hours of community service per semester.

"We try to help in the community as much as possible," says **Meghann Morrow**, another former president whose brother, Matt, persuaded her to become a member of M-Club when she came to campus. "My favorite part is that we give the young kids positive role models to look up to. Hopefully, that will inspire those kids to get out there and also do some good in the community."

"I see a great future for our organization," adds Morrow, who played softball at S&T. "We keep growing in numbers every year and the more people we have, the more opportunities there will be for us to help out and put on events like Special Olympics and carnivals for the kids — which allow more chances for us to positively affect the lives of young kids."

GET IN THE GAME

by Mindy Limback (limbackm@mst.edu)

Photos by B.A. Rupert



Step onto the court and, as teams hurl rubber projectiles at each other, it's pretty clear that quick reflexes are essential for both watching and playing this playground sport. As teams like Buster McThunderstick or Hooligans try to channel moves from Vince Vaughn or Ben Stiller, players try their best to dodge the balls that eventually slam into nearby walls.

Dodgeball is just one of 19 sports offered by the intramural program at Missouri S&T (and maybe the only one that was once reserved for elementary P.E. class). Former high school athletes who opt not to pursue a spot on a varsity-level team have plenty of traditional sports to choose from in the program, including

softball, golf, cross country, swimming, volleyball, soccer, tennis, bowling, basketball and even track and field. But there are plenty of non-traditional sports to consider too, like washers, ultimate Frisbee, table tennis and darts.

The diverse program gives students a wide selection of options to stay active. Nearly 70 teams were represented during 2009-10, with a composite number of 6,365 participants. Flag football, softball, soccer, volleyball and basketball round out the program's most popular sports.

"Our goal is to provide participants with a comprehensive array of activities, a friendly and knowledgeable staff and a safe playing environment," says **Sarah Moore**,

assistant director of athletics and intramural director. "All activities are social, competitive and sporting in nature and encourage and promote the value of fair play and a healthy lifestyle."

In addition to the intramural program, S&T offers nine non-varsity sports clubs, such as fencing and rugby, with a roster of nearly 250 members.

"Students choose to participate in sports clubs for various reasons, although a common denominator is often a recreational love of the sport or activity," says **Angela Perkins**, director of student life.

Competition with these traveling teams can be fierce and physical, especially

“Going in
against
Mizzou,
nobody
expected
us to
beat them
except
ourselves.”

– Bryce Vandas,
a senior in mechanical engineering

against old rivals. Success becomes even sweeter when S&T is the underdog, like when S&T’s Division II in-line roller hockey team walked away with a 5-3 win against the University of Missouri-Columbia’s D-I team last October.

“Going in against Mizzou, nobody expected us to beat them except ourselves,” says **Bryce Vandas**, a team captain and senior in mechanical engineering. “The official score keeper even came to our locker room afterward to ask if the final score was correct because he didn’t believe it. It was a great game. We finally got our payback.”



*One campus.
One community.
One world.*

by Linda Fulps (fulpsl@mst.edu)

Lions, dragons and camels paraded through downtown Rolla last fall, illustrating that everyone loves a parade, regardless of their native country.

The “Celebration of Nations,” was designed to bring community residents and students together to share their home countries’ culture and traditions and to celebrate the area’s rich diversity. It was a big success.

“Several student organizations worked closely together to make this event happen,” says **Harsheel Shah**, a graduate student in aerospace engineering from India. “They cheered for each other’s countries — it definitely increased harmony between the groups.”

Highly visible banners were placed throughout Rolla with the tagline “One Campus. One Community. One World.” The banners and a beautiful autumn day helped generate a good crowd for the parade that kicked off the Oct. 9 celebration, with colorful flags representing 66 countries.

“The people lined along the streets for the parade were great,” says **Daoru Han**, a graduate student in aerospace engineering from China. “Our flag, dragon and lion costumes brought cheers from the crowd.”

The parade also included marching bands, camels, an African musical group and an Indian Palki, a traditional transport for brides on their wedding day. Shah helped decorate the Palki.

The festival following the parade, which included international displays, arts, crafts and food, also drew a large crowd. An “International Idol” talent competition was held that afternoon with a variety of acts, both international and local.

The next day, as Han was eating lunch at a local restaurant, “an old guy came up to our table and said he recognized me from the parade. He really enjoyed it.”

Plans are already under way for the next Celebration of Nations set for Sept. 24.

the highs and lows of Adventure Clubs

by Linda Fulps (fulpsl@mst.edu)

From the depths of the Earth to the wild blue yonder, study-weary S&T students in need of a break find some pretty unusual places to burn off steam.

"I like going someplace where you have no contact with the outside world — where it's quiet with no electronics," says **Laura Sisken**, a junior in physics, "Also, I like mud."

That's a must for MSM Spelunkers Club members, who spend hours far inside the Ozarks' hillsides crawling on their bellies through muddy creeks and squeezing through tight spaces, in pitch darkness with just a headlamp for light. Not for the claustrophobic, spelunking is physically and mentally demanding, and dangerous. But the payoff is worth it.

"Caves are like the final frontier," says club president **Tyler Allen**, a senior in electrical engineering. "Each is unique, and you always notice something new."

Begun in the early 1930s, the Spelunkers Club became university-sanctioned in 1949 and is open to anyone interested in the sport, including local residents. About 230 people are on the club's email list, but only about 20 are regular cavers.

Former club president **Eugene Degenhardt**, GeoE'67, described the group as a "quite independent, rag-tag, contrary, territorial, protective, maverick caving club." That same spirit was evident at a recent meeting, with 16 members dispersed throughout a large classroom, barely visible, slouched far down in their seats with an entire row to themselves. Here they swap stories and plan their next adventure.

The sport relies on the group's ability to work together in the close confines of a cave. A minimum of three people are required for an outing, and safety is the priority. They are also vigilant about decontaminating their gear before and after entering a cave, and not disturbing wildlife or formations.

"The cave ecosystem is very fragile," says Allen. "We try to keep our numbers to a maximum of 12 people to limit the chances

of stepping on creatures you can barely see, or disturbing bats trying to hibernate."

Andy Free, a Rolla resident and 14-year member, helps the club maintain relationships with area cave owners. "I've worked hard to get to know them," he says. "I make sure our members take care of their caves."

Members work to restore, survey and map the caves. Mapping is completed by hand, then is computerized and sent to the Missouri Spelunkers Society. "No one wants to do the sketching, because it's really hard," says Allen. "But if you do, your name is included on the map."

Spending hours underground isn't for everyone. Some students prefer the thrill of wide open spaces. For them, nothing compares to a freefall from 10,000 feet.

For about \$200 each, members of Missouri S&T Skydiving Club board a small plane at Rolla National Airport near Vichy, Mo., for a jump that typically lasts 5-10 minutes. They plan one jump per semester.

"Most first-timers tandem-jump with a certified instructor," says club president **Ben Payne**, a graduate student in physics. "And most of them just do it just once."

"I like going someplace where you have no contact with the outside world — where it's quiet with no electronics."

— Laura Sisken, a junior in physics



Photo by Joe Nicolussi



Photo by Ben Payne



Photo by Joe Nicolussi

Missouri S&T skydivers (bottom left) and spelunkers (above and bottom right)

Payne's first jump was not a tandem jump, but a solo jump with "instructor-assisted deployment." He crawled onto the plane's wing, hung from the bar underneath and let go. Then, from inside the plane, his instructor pulled a pilot chute which deployed Payne's main chute.

"I actually blacked out for a few seconds my first time," he says. "I have no memory of it." But the 43-jump veteran's awareness did improve with subsequent outings. Payne admits that he spent entirely too much time and money skydiving as an undergraduate at the University of Wisconsin-Madison. "When I came to Rolla I vowed to focus on school," he says. So for now, instead of jumping, he gets new people involved in the sport.

The club was officially recognized by the university in 2004, but it was inactive when Payne came to S&T in 2007, due to a plane crash the year before. Pilot error was determined to be the cause of the crash, which killed S&T senior **Robert Cook** and five others. Cook, a certified skydiving instructor, saved the life of an Australian tourist by positioning himself to take the full impact when their plane hit the ground. In 2008, Cook posthumously received the Australian Star of Courage Award, one of that nation's top bravery awards.

"Actually, the danger of skydiving is relatively low," says Payne, who plans to continue skydiving in the future. "Driving for one year is 20 times more dangerous than one skydive."

Goldberg in *The Atlantic*

Friedman is 45 years old. A retired IBM programmer in Austin, Texas, he lives in an apartment playing the stock market and making collages from pictures cut out of magazines. He is also the main character in **Matthew Goldberg's** latest novel. Goldberg teaches creative writing in S&T's English and technical communication department.

A short story adapted from the novel, "Friedman in the Dark," was published in the October 2010 issue of *The Atlantic*. In the story, Friedman works on his relationship with a 22-year-old girl and deals with his mother, who is bipolar and institutionalized. After she escapes from her residential facility, he has to find her and decide what to do with her.

Friedman has no first name in either the novel or the short story. "I didn't want to think of him that way," Goldberg says.

Goldberg, who is in his second year of teaching at S&T, worked at IBM in Austin for two years before following his passion to write. He says the novel isn't autobiographical.

"Friedman isn't based on any one person, but it could be anyone," he says. "They seem to share a sense of claustrophobia and find it tough to open up to the world."

Goldberg holds a bachelor of science degree in electrical and biomedical engineering from Duke University and a master of fine arts in creative writing from the University of Arkansas. He feels his background in engineering makes him a good fit to teach composition to S&T undergraduates.

"I can talk about the importance of writing to engineering students," Goldberg says. "In every job I had before I started teaching, writing was important — evaluations, presentations.



Fiction writer **Matthew Goldberg** teaches composition and creative writing courses at Missouri S&T.

When you're writing your own performance evaluation, it helps to have good writing skills."

Goldberg is currently working on his second novel and shopping for a publisher for the first. He tries to write three hours a day.

"I get caught up in it," he says. "Some days it happens, other days it doesn't." But having the discipline to try helps his creativity. "At least it's an address where inspiration can find me."

International honor for environmental engineering

A group of S&T students won first prize in a student poster presentation at the 7th International Phytotechnologies Conference, held in Parma, Italy, last fall.

Mikhil Shetty, a graduate student in environmental engineering from Poona, India, presented the poster titled "In-planta Solid Phase Sampling Devices" and received the top award for the student-delivered research poster contest.

The poster was co-authored by **Matt Limmer**, a graduate student in environmental engineering from Oregon,

Ohio, and **Joel Burken**, professor of civil, architectural and environmental engineering.

The conference featured more than 100 posters and had attendees from more than 45 countries representing six continents.

The S&T contingent, including **Cailie Carlile**, a junior in environmental engineering from Sedalia, Mo., attended the conference as part of a grant from the National Institute of Environmental Health Sciences to Missouri S&T. Using the NIEHS grant, S&T funded the International Phytotechnologies Scholars program that brought 22 students

from eight countries to the conference to present their individual research and learn together.

"The scholars program is intended to utilize the conference as a unique learning experience for students studying phytoremediation," says Burken, who chairs the program. "Students attending the conference coordinated their activities to meet self-established learning objectives and also interacted with the other students and attendees in a unique cultural and scientific exchange."

Chancellor announces retirement

Missouri S&T Chancellor **John F. Carney III** recently announced plans to step down from the position on Aug. 31 after six years as chancellor.

Carney announced his decision at the conclusion of his State of the University Address held Jan. 26 on campus. "It has been a wonderful privilege to serve Missouri S&T for nearly six years," Carney said. "Missouri S&T is a unique jewel among the nation's universities and has a terrific future ahead. While I have immensely enjoyed my tenure at S&T, the time has come for me to spend more time with my children and grandchildren."

We'll report more about Carney's achievements and accomplishments in the summer issue of *Missouri S&T Magazine*.



John F. Carney III

S&T to go geothermal



The University of Missouri Board of Curators in November approved a plan to replace S&T's 65-year-old power plant with a new geothermal energy system.

Construction is expected to take five years. S&T's current power plant, built in 1945, relies on coal and wood chips to provide steam-generated heat to most buildings on campus. The new system is expected to save \$1.4 million in energy and operational costs annually — a figure that could grow to \$2.8 million in future years — and cut carbon dioxide emissions by more than 25,000 tons per year.

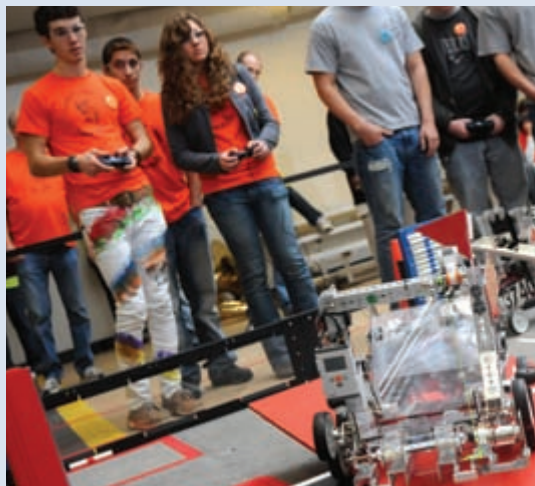
Bookmark this



Check out Missouri S&T's new homepage.

Visitors to mst.edu in late December were treated to an early viewing of S&T's newly redesigned homepage. The new site, which more prominently displays stories about campus research, key achievements and experiences, is part of a plan to more effectively promote the university online.

Those stories are also told through S&T's Facebook, Twitter and YouTube sites, which have also been updated to reflect the new look.

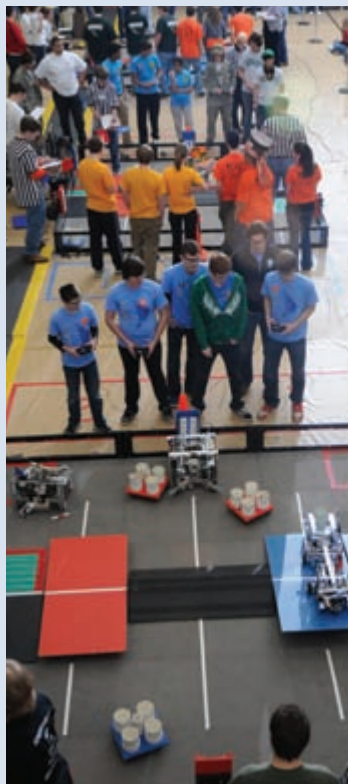


A first FIRST for S&T

Thirty-three robots and the high school students who built them descended on the Missouri S&T campus Feb. 26 for the national FIRST Tech Challenge competition.

This year's competition, "Get Over It," required teams to use their robots to score points by emptying baton dispensers filled with 6-inch-long PVC tubes and scoring them in stationary and rolling goals.

This is the first of three years S&T will host the national competition.



A new Day in cancer research

Delbert Day, CerE'58, Curators' Professor emeritus of ceramic engineering at Missouri S&T, has made a name for himself in cancer research. Now his name will be associated with a cancer institute at Phelps County Regional Medical Center.

In January, PCRMC in Rolla announced the creation of the Delbert Day Cancer Institute. Funded through a gift from Day's son and daughter-in-law, Ted and Kim Day, the institute will allow PCRMC to work with the National Cancer Institute's Community Clinical Oncology Program, which connects local patients and physicians with NCI-sponsored new treatments and clinical trials for drugs. Through the Delbert Day Cancer Institute, PCRMC patients will have access to new therapies and treatments.

An expert in developing specialty glasses, Day is best known for co-inventing glass microspheres, now



Delbert Day, CerE'58 (right), and his son, Ted.

marketed under the brand name TheraSphere, which are used commercially in the United States and Canada to treat patients with liver cancer. The treatment consists of injecting millions of the irradiated tiny

beads — each one about half the thickness of a human hair — into the main artery supplying blood to the liver. The beads then deliver localized radiation to malignant cells without harming healthy tissue.

Briefly

W. Lance Haynes, professor of speech and media studies, was named chair of arts, languages and philosophy in November.

James Drallmeier, Curators' Teaching Professor of mechanical and aerospace engineering, became chair of that department on Jan. 1.

William P. Schonberg, professor and chair of civil, architectural and environmental engineering, received a NASA Engineering and Safety Center Honor Award for outstanding leadership, technical insight and support of micrometeoroid and orbital debris protection and damage prediction.

S.N. Balakrishnan, professor of mechanical and aerospace engineering and an expert in developing missile guidance, was named Curators' Professor of aerospace engineering during commencement on Dec. 18.

Roger A. LaBoube, Curators' Teaching Professor emeritus of civil engineering, was named director of the Student Design and Experiential Learning Center in December.

The Career Opportunities Center became the career opportunities and employer relations department on Jan. 1. The name change better reflects the services the department offers.

Business is booming for new degree program

Last spring, Missouri S&T became the first university in the nation to offer a master's degree in explosives engineering. The program, which is offered through the mining and nuclear engineering department, had its first graduates during commencement:

- **James W. "Buck" Hawkins**, MinE'10, MS MinE'10, of Seaman, Ohio
- **Nathan Rouse**, MinE'09, MS MinE'10, of Willow Springs, Mo.
- **Charles Zdazinsky**, MinE'08, MS MinE'10, of New Albany, Ind.

Keith Bailey to grads: embrace change and progress

In his Dec. 18 commencement address at Missouri S&T, **Keith Bailey**, ME'64, told new graduates to expect to be confronted and bombarded with exciting choices.

"Jobs and careers that literally didn't exist five years ago, today offer some of the greatest opportunities," he said. "What I garner from the lessons of the past is this: The world you live in by the end of your career would be unfathomable to you today," said Bailey, former chair, president and CEO of The Williams Companies, a global energy company in Tulsa, Okla.

He admitted that it might be easy to be discouraged about the future, based on headlines in the news. "But I believe there has not been a time in my life when the world has objectively been a more hopeful place," he said. "The reason is that the opportunity to realize one's dreams rests much more fully within your own control than at any time in our history."

Bailey is currently non-executive chair of Cloud Peak Energy, the nation's third-largest coal producer. He is also on the boards of Apco International Oil and Gas, Aegis, Markwest Energy Partners and Integrys Energy.



Keith Bailey

Expanding cyber diversity

Missouri S&T is working with the University of Arkansas at Pine Bluff (UAPB) to develop a new program for undergraduate students in an effort to get more women and minorities interested in the field of cyber-security — specifically, information assurance education.

Information assurance education brings together computer science, engineering and information technology to find ways to improve the security of computer and electronic networks. Minorities and women make up only 3 to 5 percent of the workforce in this specialized field.

The three-semester program gives interested UAPB undergraduates who complete the coursework a chance to obtain a minor in information assurance. Those students may then apply to pursue master's or Ph.D. degrees with an emphasis in information assurance at S&T.

Missouri S&T is already a leader in information assurance education, says **Bruce McMillin**, professor of computer science, and this partnership builds on that role. In 2007, the U.S. National Security Agency (NSA) and the Department of Homeland Security designated Missouri S&T as Missouri's first National Center of Academic Excellence in Information Assurance Education. McMillin is the center's director.

"Nationally, the NSA and intelligence community is looking to hire 1,000 Ph.D.s the next few years due to the increasing demand," McMillin says. "If you want to do research in security, the NSA is the place to be, because you have security clearance all the way to the top. You'll know what the leading edge is."

Professional degrees awarded

Missouri S&T awarded 10 honorary professional degrees during commencement on Dec. 18.

The professional degree recipients are:

Jeffrey Lee Feaster, CE'77, of Houston, vice president of engineering at NCI Building Systems

Karen Squires Foelsch, CSci'89, of Iowa City, Iowa, senior vice president of digital fulfillment services for the assessment and information group of Pearson

Gregory L. Hempen, PhD GeoE'93, of St. Louis, a consultant for URS Corp.

Mark Paul Jordan of Clayton, Mo., vice president and chief information officer for Furniture Brands

Mary C. Lamie, MS CE'98, of Collinsville, Ill., deputy director of highways in region five for the Illinois Department of Transportation

Ricky Lynn Martin, MetE'82, MS EMgt'84, of St. Louis, enterprise manager of Boeing's multi-site metallic materials and processes technology team

Stephen H. McVeigh, CE'72, of Spring, Texas, retired from Shell Oil

John Robert Miller, GGph'82, MS GGph'84, of Houston, chief operating officer of Juneau Exploration

Michael Joseph Mohan, EMgt'83, of Spicewood, Texas, an independent technical consultant and former president, CEO and founder of Silicon MAGIKE

Albert Bruce Neil, president and CEO of The Doe Run Co.

As Earth warmed, ancient rainforests thrived

While environmental theorists speculate that rainforests could be destroyed by rapid global warming, two scientists with ties to Missouri S&T believe otherwise. In the November issue of the journal *Science*, the researchers report that tropical rain forests thrived during a period of global warming almost 60 million years ago.

Carlos Jaramillo, MS GGph'95, the study's lead author, is a staff scientist at the Smithsonian Tropical Research Institute in Panama. In 2009, in the journal *Nature*, Jaramillo and colleagues reported the discovery of bones from what is believed to be the largest snake to slither the earth. The constrictor, which they named Titanoboa, was about 50 feet long. (Jaramillo and his discovery were featured in the Summer 2010 issue of *Missouri S&T Magazine*.)

When Titanoboa was living, the world was going through a quick period of warming. Temperatures went up 3 to 5 degrees Celsius in about 10,000 years. Carbon levels doubled. The warm conditions lasted about 200,000 years.

Contrary to speculation that tropical forests could be devastated by rapid global warming, the researchers found that forest diversity also increased rapidly during this past warming event. New plant species were added to the existing pool of vegetation. The *Science* researchers examined pollen trapped in rock cores and outcrops — from Colombia and Venezuela — to form their conclusions.

Guillermo Rodriguez, MS GGph'10, one of the co-authors who contributed to the *Science* study, is a palynologist at the Colombian Petroleum Institute.

A concrete way to help the environment

If **Jeffery Volz** has his way, millions of tons of fly ash will be diverted away from ponds and landfills and into the nation's infrastructure. Volz, assistant professor of civil, architectural and environmental engineering, plans to use the stuff — the fine particles that rise with flue gases during combustion — as an additive in concrete.

Currently the nation's power plants generate about 130 million tons of fly ash and bottom ash during the coal combustion process. Particles are captured through filtration to reduce air pollution and are often stored at coal power plants or placed in landfills.

Adding fly ash to concrete isn't a new concept. For more than 70 years, the waste product has been a component of concrete used to build the nation's bridges, roads, dams and overall infrastructure. It increases concrete's durability, extending the service life of these structures.

"Traditional specifications limit the amount of fly ash to 35 or 40 percent cement replacement," says Volz. "Recent studies have shown that higher cement replacement percentages — even up to 75 percent — can result in excellent concrete in terms of both strength and durability."

Concrete typically has three key components: portland cement, water and aggregates like gravel and sand. During the manufacture of cement, limestone and other materials are heated to extreme temperatures, releasing tons of CO₂ from both chemical reactions and the heating process. If fly ash could replace cement, it would not only reduce the amount of fly ash that ends up in ponds and landfills but CO₂ emissions as well, says Volz.

High-volume fly ash is significantly more sustainable, but also can be unpredictable. The physical and chemical characteristics of the material can vary, which can change how it reacts to additives.

"At all replacement rates, fly ash generally slows down the setting time and hardening rates of concrete at early ages, especially under cold weather conditions, and when less reactive fly ashes are used," Volz says.

Volz is working with the Missouri Department of Transportation to develop guidelines for the proper application of high-volume fly ash concrete in bridges, roadways, culverts, retaining walls and other transportation-related infrastructure components.



Jeffery Volz and graduate student Krista Porterfield are studying high-volume fly ash levels in concrete.



Steven Grant (left) and Ph.D. candidate Pratik Shah are helping prepare soldiers for the battlefield.

Shock and awe: in stereo

Sixty-four loudspeakers hang from a truss system and 80-hertz subwoofers shake the ground, blasting the sounds of combat inside a non-descript, soundproof building on the south side of Rolla.

The building is where **Steven Grant**, EE'79, and his fellow S&T researchers are building what is called an immersive audio environment, complete with the sounds of tanks, ordnance, gunfire, shouting and helicopters, to help better prepare soldiers for combat.

"When soldiers train in a classroom and learn how to perform different tasks, that's very different than when they get on the battlefield and suddenly there's a cacophony of warfare going off all around them," explains Grant, the Roy A. Wilkens Missouri Telecommunications Professor.

"By training soldiers in an immersive auditory experience, they will be better able to complete their tasks quickly and efficiently when they get into a combat situation."

In the United States, very few immersive audio environments exist, and the ones that do are experimental in nature, expensive and inaccessible to the general military trainee.

"The difference between green and battle-hardened war-fighters is the ability to function effectively in stressful operational environments," says Grant, whose research is funded by the Army's Leonard Wood Institute. "Our idea is for soldiers to get accustomed to an environment that they haven't been exposed to yet."

Hear the sounds of war and view a short video of Grant's research at

magazine.mst.edu

Mining on the moon — far out

Leslie Gertsch became fascinated with the moon while watching Apollo astronauts collect lunar rocks on a black-and-white television in her family's Ohio farm house. More recently, she was paying close attention when NASA blasted a hole in the moon's surface, where more water than expected was discovered.

Gertsch, an associate professor of geological engineering, believes that mining on the moon is essential to the very survival of our species.

"Humanity eventually needs to live in more than just one place, other than the Earth," Gertsch says. She says moon dirt contains a surprising amount of vital compounds, including water, hydrogen, aluminum, iron and maybe even "rare-earth elements" like lithium (think lithium-ion batteries).

Gertsch says the leading theory these days is that the moon was actually part of the Earth at one time — that it formed in the aftermath of a collision between the Earth and a massive foreign object. So it stands to reason that the moon has some natural resources in common with the Earth.

Best practices for mining on the moon and beyond are still being developed, of course, and that's a big part of Gertsch's research. She knows space mining would be essential to colonizing the solar system. Explorers would need to create fuel and breathing gases as they traveled, instead of hauling heavy supplies with them from Earth.

"We could launch from the moon to go to Mars, for instance, at a lower cost," says Gertsch, who notes that asteroids and comets are also good candidates for space mining activities.

WILL MORRISON: A MAN FOR TWO SEASONS

FOOTBALL: PLACE KICKER-PUNTER
BASEBALL: FIRST BASE



story by John Kean (jkean@mst.edu)
photo by B.A. Rupert

Will Morrison, a junior in business and management systems, had a stellar prep career as a two-sport athlete. He was the punter and kicker on the football team and an infielder on the baseball team. He was a second team all-state selection in football as both punter and kicker his junior season and was a first team all-state selection in baseball as a senior in 2008.

Morrison decided to continue his two-sport career at Missouri S&T after graduating from Rolla High School in 2008 and has continued to excel in both. On the baseball diamond last year, he led the Miners in batting average (.391), home runs (6) and runs batted in (33). For his efforts he earned first team All-Great Lakes Valley Conference honors as a designated hitter and was a first team All-Midwest Region selection for both the American Baseball Coaches Association and Daktronics.

Biggest influence (other than parents):

High school baseball coach Jason Swearingen and high school football coach Josh Richards.

Played in high school:

Basketball, soccer, cross country, track and golf.

Why Missouri S&T?

S&T was a good fit academically and athletically. Plus my father, uncle and brother are graduates of S&T.

Best memory:

Going to watch the women's volleyball games with the football team and the men's basketball games with the baseball team. We have good cheers and were good sportsmen.

Best sports memory:

The walk-off win against Northwest Missouri State in baseball last spring and the overtime win in football against Kentucky Wesleyan this past fall.

Goals for 2011 baseball season:

I want to get healthy and contribute to a winning season. I've just got to take it one pitch at a time. I hope we can go to the postseason tournament and send our seniors out on a winning note.

On being a two-sport athlete and a full-time student at Missouri S&T:

It is hard to recover from injuries. There is no time off from season to season. You only have time for practice, games, class and homework, but it has still been a good experience.

Miners conclude season in NCAA Tournament, ranked 13th in Division II

During fall 2010, the Missouri S&T's men's soccer team won a share of the Great Lakes Valley Conference's regular season championship, made its first-ever trip into the NCAA Division II Tournament and finished among the top-ranked teams in the final national rankings.

The Miners were ranked third in the nation in shutout percentage with a school record 11 shutouts in 2010. S&T also finished fifth in Division II in save percentage and 10th in goals against average as a team with a mark of 0.69.

S&T hosted a first-round game in the GLVC Tournament and blanked Bellarmine 3-0, then fell 2-1 in overtime at Northern Kentucky in the semifinals. The Miners earned a trip back to NKU the following weekend to play in the NCAA Midwest Regional and beat 12th-ranked Ashland 3-1 in its opening game, getting goals from **Kyle Schraier** and **David Kekec** in the final seven minutes to pull out the win.

But even after overcoming a two-goal deficit on a pair of goals by Schraier in the second half, the Miners' dream of winning a national championship was snuffed out when national player of the year Steven Beattie scored with just 2:27 to play in regulation time to give Northern Kentucky — the eventual national champion — a 3-2 victory.

S&T sophomore defender **Spencer Brinkmeyer** and junior goalkeeper **Pat McNamee** earned All-America honors, while seniors Kekec, **Sam Shaffer** and **Kenny Gravlin** all landed all-region honors along with Brinkmeyer and McNamee, who was named the GLVC's Defensive Player of the Year.

Head coach **Joe Ahearn** was named Coach of the Year by the GLVC and the National Soccer Coaches Association of America for the NCAA's Midwest region. The Miners also received the GLVC's sportsmanship award for men's soccer.

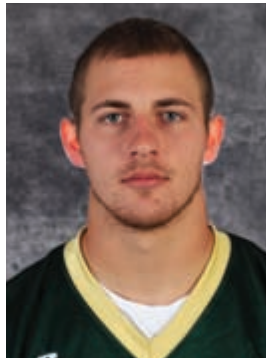
Shockley reaches milestone, lands post-season laurels

Chad Shockley missed the bulk of the 2009 season with an injury, but more than made up for it in 2010 with a banner performance to highlight the Miners' football campaign.

Shockley earned first-team all-region honors on the Daktronics squad after a year in which he tied the single-season record for receptions with 87 for 1,198 yards, setting the S&T one-year mark in that category. He also had 10 touchdown catches and 1,491 all-purpose yards during the year.

Shockley finished his S&T career second in four categories with 206 receptions, 2,652 receiving yards, 22 receiving touchdowns and 3,251 all-purpose yards.

Shockley was also named to the *ESPN The Magazine* Academic All-America first team, making him the school's 34th Academic All-America award winner since 2000.



Shockley

Attention football alumni!

During the 2011 season, the Miners will play their 1,000th football game and Missouri S&T invites all former players and coaches to join us at Homecoming, Saturday, Oct. 8, to celebrate this milestone game. More details to come.

Sports shorts

Under the direction of first-year head coach **Joe McCauley**, the Lady Miner soccer team reached the GLVC Tournament for the first time posting a final record of 8-7, its first winning season since 2000. Senior defender **Joanna Kovarik** was named to the All-GLVC third team.

The Lady Miner volleyball team also had a winning season for the first time since the program resumed in 2007, finishing with records of 14-13 overall and 7-7 in the GLVC. Senior middle hitter **Samantha Klump** was named to the all-conference second team.

Sophomore **David Huskisson** was one of the top runners in the GLVC during the 2010 cross country season, highlighted by a sixth-place finish at the conference meet in Kenosha, Wis., in early November. He was named the league's "Runner of the Week" on three occasions during the year.

Cogan, Ernst named Academic All-Americans

Electrical engineering senior **Brandon Cogan** and mechanical engineering junior **Allen Ernst** were named in spring 2011 to the *ESPN The Magazine* Academic All-America team in their respective sports. Cogan, a member of the baseball team, finished the season as the Miners' third-leading hitter with a .348 batting average. Ernst earned second-team All-GLVC honors and was a provisional qualifier for the NCAA Division II Championships in track and field for S&T after finishing third in the steeplechase at the GLVC Outdoor Championships. Missouri S&T student-athletes have earned 33 Academic All-America awards since 2000, the fourth-highest total among NCAA Division II institutions.



Hasselmann Alumni House

A place to call home.

For more than a century, Miner alumni have returned to campus to celebrate St. Pat's and Homecoming, and attend sporting events, award ceremonies and reunions. These events take place all across campus and Rolla. Soon, an independent Hasselmann Alumni House will be a place to call home — not only for alumni, but also for students and friends. This warm and welcoming building will showcase the accomplishments and memories of MSM, UMR and S&T alumni, as well as the history and traditions of this great university.

A source of pride.

The Hasselmann Alumni House will be a source of history and pride for all of us. It will be a place for alumni to connect and a gathering place for key student events, like receptions for freshman convocation, graduation and career networking workshops. The building will include dining facilities, social spaces, meeting rooms, a courtyard, gardens, library, archives, and offices for the staff of the Miner Alumni Association.

If your company or the company you work for is interested in being considered as a contractor for the Hasselmann Alumni House, please send your qualifications to:

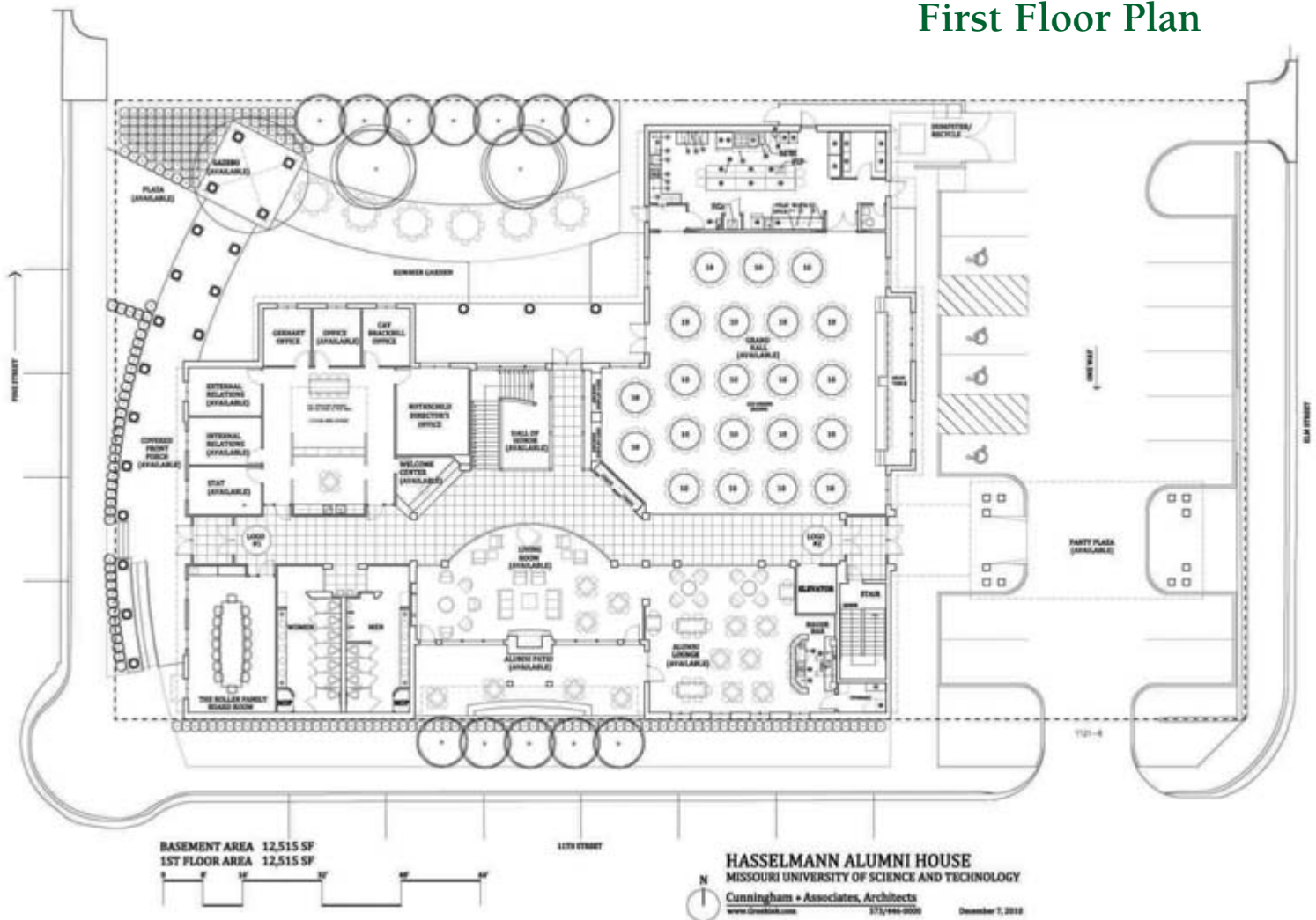
Miner Alumni Association
115 Castleman Hall
400 W. 10th St.
Rolla, MO 65409-0650

Grand Hall

The house's largest room will accommodate up to 220 guests for a sit-down dinner. In addition to being ideal for banquets, the grand hall will be well-suited for mission-related lectures, reunions, Homecoming, St. Pat's, retirement receptions, scholarship recognition ceremonies and other large events.

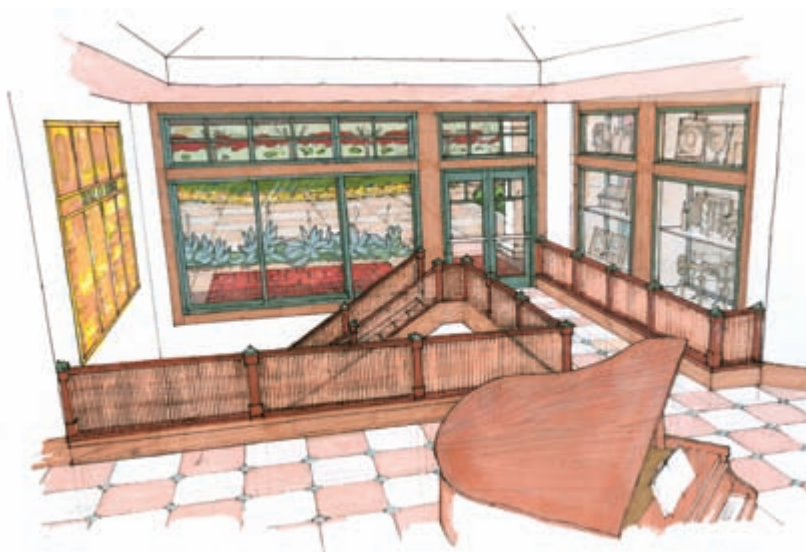


First Floor Plan



Alumni Lounge

This tastefully appointed lounge will have a fun, casual, relaxed atmosphere where alumni and friends can share tall tales of their days in Rolla. A cold one will be on tap at the Bauer Grand Hall Bar located inside the lounge.



Hall of Honor

This space will be dedicated to recognizing the names of alumni, friends and corporations who make this outstanding home possible.

Living Room

Lined with shelves housing alumni-authored books and MSM, UMR and S&T memorabilia, the living room will welcome small groups for meetings and give corporate executives a place to share their experiences with students. This intimate gathering space will feature a baby grand piano, providing the option for live music to help create the perfect ambiance.



Naming Opportunities as of Feb. 21, 2011

The Hasselmann Alumni House will only be made a reality through the generosity of our alumni and donors. Share your pride in MSM, UMR and S&T by including your name in the Hall of Honor. Several naming opportunities remain available, including the following:

Grand Hall (first floor, conference room).....	\$600,000
Alumni Lounge (first floor, archive).....	\$250,000
Alumni Patio (exterior, outdoor patio).....	\$250,000
Kummer Garden (exterior, garden).....	Named
Living Room (first floor, living room)	\$250,000
Party Plaza (exterior covered porte-cochere).....	\$100,000
Hall of Honor (first floor, foyer).....	\$100,000
Bauer Grand Hall Bar (first floor, wet bar)	Named
Kitchen (first floor, kitchen)	\$100,000
Covered Porch (exterior, covered porch)	\$100,000
Gazebo (exterior).....	\$100,000
Roller Family Board Room (conference room)	Named
Office Hub	\$75,000
Plaza (exterior plaza)	\$75,000
Rothschild Director's Office (administrative office)	Named
STAT Program Office (Students Today, Alumni Tomorrow).....	\$50,000
Historic Emblem (two available, each).....	\$50,000

Archive Cases	\$50,000
Major Offices (two remain)	
(external and internal relations managers, each)	\$40,000
Staff Office.....	\$25,000
Gerhart Office.....	Named
Cay Brackbill Office	Named
Welcome Center	\$25,000
Bar Stools (five remain, each)	\$15,000
John Eash Bar Stool (one named).....	Named
Restroom stalls and urinals (12 available, each)	\$5,000
Parking spaces* (12 available, each).....	\$5,000
Rich Eimer Parking Space (one named)	Named

Total naming opportunities	\$3,090,000
Total amount pledged/raised	\$580,000

*Short-term naming opportunity. Limit of three years.

Photo by Rich Rau



Annual alumni reception at Boeing

Alumni of Missouri S&T who work at Boeing in St. Louis gathered at the company headquarters on Nov. 10 to meet Chancellor John F. Carney III and other campus representatives as part of the Miner Alumni Association's annual alumni reception. During his remarks to the group, Carney highlighted the importance of the collaborative relationship between S&T and Boeing.

In addition to being one of the top hiring corporate partners, Boeing provides consistent scholarship, program and research support to S&T. Many of the alumni in attendance also make personal commitments of their resources and time by serving on advisory boards and assisting with student-centered projects.

Association hosts December 2010 grad celebration

A record 115 students celebrated their graduation at the Grad Finale on Dec 9. Hosted by the Miner Alumni Association, the celebration consisted of food, card games, door prizes and music.



Susan Hajjar '83 generously donated multiple gift cards and a 32" LG HDTV for the grand door prize. Catherine Swift '10, the lucky TV winner, is pictured with Marianne Ward.

Banquet to connect scholarship recipients and donors

Alumni association scholarship endowment donors and their scholarship recipients will meet during the association's Scholarship Banquet on Friday, April 15.

More than 400 students who receive scholarships through the alumni association will be honored at the banquet. Donors who provide named scholarships through the association will sit with the students who benefit directly from their generosity.

A note from history

140 years, 140 things to celebrate

On Nov. 23, 1871, a crowd gathered for one important purpose: the grand opening ceremony for the newly established University of Missouri School of Mines and Metallurgy.

Daniel Read, president of the University of Missouri at the time, stood on the second floor of the Rolla Building and said, "...We are today, in opening this school, performing an historic act. Not so with many of those occasions which attract present attention, and even a wide-spread notoriety. They pass away with the noise and bustle which they create, and leave behind them no permanent record — no enduring monument. How different the work of this hour. THIS SCHOOL NOW COMMENCING WILL LAST AS LONG AS THE STATE ITSELF. Nay, would the state change — should it become dissevered, from our great republic — not change, or revolution, or dissolution, or the shock of war would destroy this institution of science. Nothing short of the destruction of civilization itself can blot out or efface the beginnings which we here and now make" *

Despite all this nation had endured during the Civil War, these leaders were determined to bring science education to Rolla, Mo. Did they succeed? If so, share with us what you love about S&T. In the fall issue of this magazine, we will feature the 140 things we love about S&T.

We want specifics: your favorite professor, your department, the high-speed Internet, the lab where you discovered something, the dean, the Puck, the library, your fraternity, St. Pat's, the date nights when female students were bused to Rolla. Add your thoughts — and please focus on one or two specific aspects of the university — at magazine.mst.edu/140things.html.

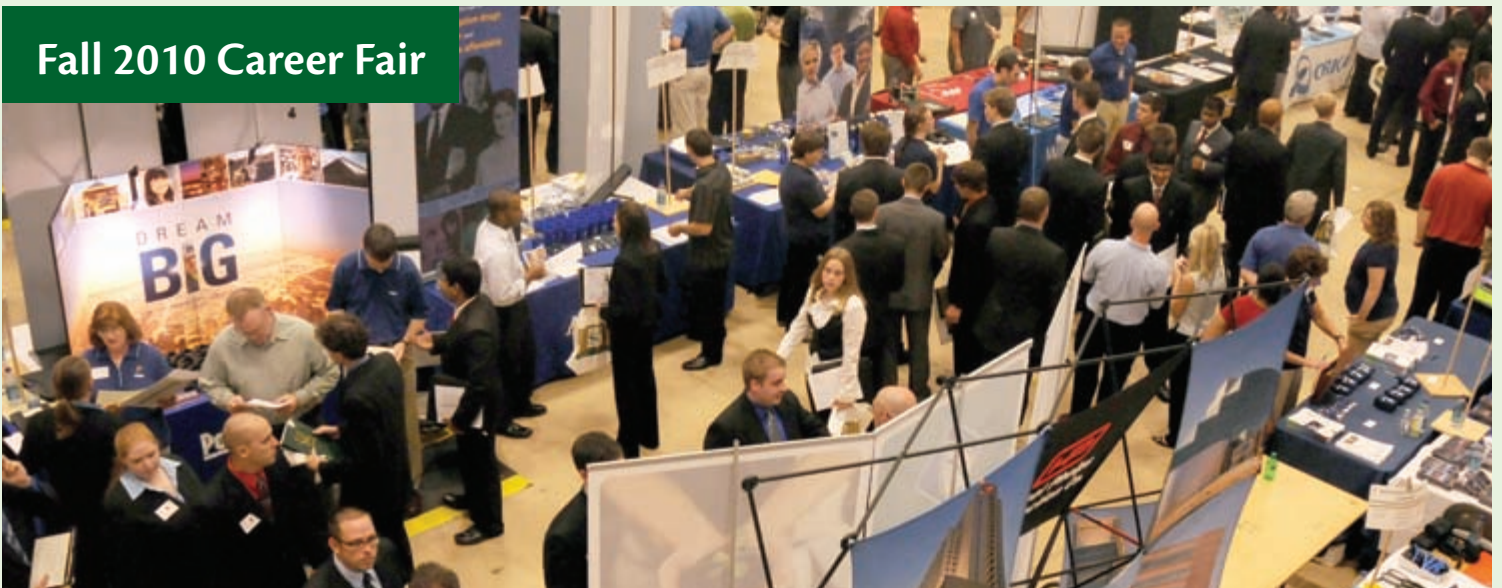
*Excerpt from *History of the University of Missouri School of Mines and Metallurgy, 1871-1946*, by Clarence N. Roberts.



Founders Day celebrated Nov. 5

The first classes were held at Missouri S&T on Nov. 6, 1871. On Nov. 5, 2010, the Miner Alumni Association hosted a Founders Day celebration at the Havener Center to mark the event. A timeline and other historical memorabilia were on display to inform students, faculty and staff of the rich history of their university.

Fall 2010 Career Fair



On Sept. 21, career opportunities and employer relations hosted the fall 2010 Career Fair. With 184 employers in attendance, just over 120 recruiters were alumni returning to recruit graduates of their alma mater. Prior to the career fair the Miner Alumni Association, along with Students Today, Alumni Tomorrow (STAT) and Engineers Without Borders, hosted a continental breakfast for the recruiters.

For a list of alumni in attendance, visit magazine.mst.edu.



Miner Alumni Association represents and serves more than 50,000 graduates and former students. Today's association carries on the proud tradition of support to Missouri S&T, providing more than \$500,000 in annual aid to campus students, faculty and staff.

Golden Alumni Reunion to be held for Class of 1961

The Class of 1961 will celebrate its 50th anniversary during the Golden Alumni Reunion May 23-24 at Missouri S&T and the Comfort Suites in Rolla. In addition to reconnecting with each other, alumni will tour their departments and learn more about what is happening on campus today.

The Miner Alumni Association will host the alumni and present programs on the association's history, world events 50 years ago and MSM in 1961. The highlight of the event is a grand recognition ceremony, where class members receive their 50-year pins and certificates. If you are a member of the Class of 1961 and have not received your invitation, or are from another class but would prefer to celebrate your Golden Alumni Reunion with the Class of 1961, please contact the alumni office at alumni@mst.edu or call 573-341-4145 for more information.

Homecoming 2011

Homecoming 2011 will be held Oct. 7 and 8. Make plans now to attend. More details will be published in the summer issue of *Missouri S&T Magazine*. For hotel information and other accommodations in the area, go to www.rollanet.org/business/motels.html.





**Get connected with
mineralumni.com**

We're excited to announce a new Miner Alumni Online Community designed just for you and your fellow graduates.

Already an online community user? Simply log in with your existing username and password.

Calendar of events

For a listing of section events go to: mineralumni.com

April

	SUN	MON	TUE	WED	THU	FRI	SAT
14: Board of Trustees Meeting						01	02
14-16: Academy Meetings							
15-17: OGS Weekend — Branson, Mo.	03	04	05	06	07	08	09
15: Assoc. Committee Meetings/ Scholarship Banquet	10	11	12	13	14	15	16
16: Miner Alumni Board of Directors Meeting	17	18	19	20	21	22	23
28: Grad Finale for 2011 Graduates	24	25	26	27	28	29	30

May

3: Grad Finale for 2011 Graduates	01	02	03	04	05	06	07
6-7: Commencement	08	09	10	11	12	13	14
6: Graduate student graduation							
7: Undergraduate student graduation	15	16	17	18	19	20	21
23-24: Golden Alumni Reunion The Class of 1961 will celebrate its 50th anniversary	22	23	24	25	26	27	28
	29	30	31				

June

25: St. Louis Scholarship Golf Tournament			01	02	03	04	
	05	06	07	08	09	10	11
	12	13	14	15	16	17	18
	19	20	21	22	23	24	25
	26	27	28	29	30		

Future dates to save

OCT
7-8 Homecoming

For more information on any of these events
contact the alumni office at alumni@mst.edu or call 573-341-4145.

Alumni, family and friends gather in 56 sections around the world. Here is a glimpse of their activities.

carolinas piedmont

Oct. 9 – Oktoberfest at Waldhorn Restaurant – Pinerville, N.C.

Brent Blizewski '72, '73; Richard '89 and Anette Geisler; Elliott Giles '09; Gene '50, '52 and Lenny Langston; John Mains '96; Pat Martin '81, '84, and friend, Lynn; Mandi Mueller '09; Ernesto Rodriguez '05; Brian '97 and Jolie Tenholder; and Susan '85, and Bryan Vinson.

driftless

Sept. 18 – Tailgate, Missouri S&T football game Iverson Park – Stevens Point, Wis.

Paula '85 and Wayne '84 Britson; Ben and Melanie '93 Gonja; Adam '04 and Nichole Lewis; Wallace '58 and Joan Northup; Kurt Oakes '85; Amy '07 and Sam '06 Patterson; Erin '98, John '98, Alex and Gwen Schille; and Jim '62 and Linda Teske.

central ozarks

Aug. 28 – Shrimp Feed, Lions Club Park – Rolla, Mo.

Ed '78 and Sue Albee; Kim '98 and Tony '99 Arnold; Dale and Sue Arthur; Jerry Bayless '59; Carol Bennett; Cynthia Bolon '06; Joel Burken; Ryan Buschjost '94; Joon-Ho Kim Choi; David Conradi; Janey Dean '91; Justin Dobrynski; Robert '43 and Adele Eck; Andrew Eyberg; Betty Eyberg; Harold '66 and Joyce Fiebelman; Dixie Finley '68; Jessica Gibbs; Clinton Guenther; Steve '85 and John Michael Hargis; Gary '73, '81 and Peggy Henderson; Tom Herrick '58, '68; David Hoffman; Doug Holmes '01; Bill and Jeanne Jenks; George Karr '92; Frank Kern; Sun-Hee Kim Choi; Zach LaGrone; Dave Licklider; Kent Mace '89; Jeff '94 and Amy Medous; Nancy Mengel; Jack Mentink '83; Whitney Metcalf; Dan Oerther; Gary '60, '66 and Barbara '61, '65, '85 Patterson; William '07, '09 and Bill '75 Peach; Henry '60 and Ida Ponzer; John Powell '47; Chuck Remington '49, '50; Justin Reynolds; Mocara Rice; Angie '84 and Mark Rolufs; Stew '73 and Annie Scott; Mary and Chris Sheffield; Eric Showalter; Jan '82, '96 and Jensen Skouby; J. Stephenson; Lisa and Ethan Stephenson; Rick Stephenson; O. Stevens; Bill Stoltz '68; Tommy Tran; Donna Wagner; Hod Wagner; Patrick Wallace; Warren K. Wray and Frank Yates '73. Missouri S&T representatives: Marianne Ward and Nancy Zamazanuk.

enchanted

Oct. 8 – Chancellor's visit, St. Clair Winery and Bistro 1 – Albuquerque, N.M.

Will Atkins '05, '07; Geoff '01, '02 and Mandy (Young) '02, '07 Brenneka; Harrell '64 and Joanna LaRose; David Shahin; Fred '49 and Dale Springer; Michael Vahle '71; Joy Stein '05 and Jonathan, '03, '04 Van Houten; Vince Wahler '65; James and Joan Woodard '73; and Yixiang Xie '96, '98. Missouri S&T representatives: Chancellor John F. Carney III and Marianne Ward.

prospective student receptions

Woodridge, Ill.

Nov. 2 – Woodridge, Ill.

Dan '06 and Katie '06 Aiken; Mike Marx '77; Tommy Mills '02, '04; and Joe Monie '74. Missouri S&T representative: Courtney Wallace.

Peoria, Ill.

Nov. 9 – Peoria, Ill.

Randy Brown '70; Dennis Buchheit '08; Joel Logue '09; and Rachel Wilkinson '08. Missouri S&T representative: Courtney Wallace.

Annual Meeting

Oct. 1 – Section leaders meeting – Miner Alumni Association, Castleman Hall, Rolla, Mo.

Kenneth Bandelier '97; Gretchen Brockfeld '90; Dave Bufalo '66; Preston Carney '02, '03; James Carter '66, '68, '70; Randy Dreiling '81; Tom Feger '69; Pam Leitterman '75; Doug Marquart '82; Chris Mayberry '98; Ed Midden III '69; Milt Murry '64, '80; Russ Pfeifle '74; Nathan Rues '02 and Nicole Talbot '77. Missouri S&T representative: Nancy Uri.

falls of the ohio

Aug. 28 – Dinner at Captain's Quarters at the Riverside Grille, Harrods Creek, Ky.

Dirk '91, '98 and Nickie Gowin; John Lina '63; Gary '71 and Ellen Hamilton; Bob '69 and Bev Morfeld; Bob '54 and Ludie O'Brien; Tom '62 and Judy Phillips; John '52 and Scott Robertson; and Donna Stephens.

houston

Dec. 4 – Holiday party, Phil '70 and Arni Ilavia Residence – Houston, Texas

Bill '73 and Carolyn Brune; Mike '81 and Rosie Flannigan; Carlos Fernandez '99; Dan Gualtieri '90; Jim Hoenefenger '72; Allison Ibendahl '05; Phil '70 and Arni Ilavia; Dave '71 and Charlene Jones; Gail '67 and Ed '67 Kettenbrink; Betty Koechner; Jim '67 and Carolyn Medlin; Russ Pfeifle '74; Robert Simmons '97; Nicole Talbot '77; and Fred Thompson '74. Missouri S&T representative: Katie Layman.

lincolnland

Oct. 27 – Dinner at the Pasta House – Springfield, Ill.

Ralph Barr '65; Tom Feger '69; Lynn Frasco '68; Dan Kerns '74, '79; Mark '69 and Janna Martin; Ed Midden III '69 and Anne Midden; Jerry '70 and Mary Parsons; John Stutsman '77; Will '66 and Carol Sudduth; and Randy '88 and Jerri Vogel. Missouri S&T representative: Marianne Ward.

portland

Dec. 5 – Happy hour, Jake's Famous Catfish – Portland, Ore.

Giuseppa '80 and Dave '79 Heineck; Matthew Houser '97; Dale Merrell '67; Bruce '50 and Geri Miller; and Bill '58 and Lu Walker. Missouri S&T representative: Katie Layman.



St. Louis Section holiday party

st. louis

Nov. 10 – Chancellor's reception and fall gathering at Boeing – St. Louis

Steven Belarde '96; Alex Beyer '97; Brian Beyer '97, '06; Mike Calandro '81, '91; Dwayne Car '87, '90; Chris Carpenter '85; Dana Dachroeden '83; Matt Daniels; Travis Durand '85; John Eash '79; Mike Emanuel '87; John Fiore '06, '08; Kally Gehly '03; Kevin Gibson '89; Mark Grimes '04; Lindsey Hoffmann '07; Elizabeth Hopkins '04; Scott Hunter '92, '98; Lynn E. Johnson '82; Chris Keithley '02, '03; Robert Kramer '82; Jim Leonard '76, '84; Greg Loomis '01; Bart Moenster '71; Chris Moll '06; James Nelson '99, '03; Paul Niewald '85; Bernd Peters '10; Mike Roberts '82; Charles Saff '76; Carl Schmitz '10; John Schoenecker '74; John Schwarz '86; Katie Weinkein '03, '04; Nicole Williams '98; and Chris Wilson '01, '02. Missouri S&T representatives: Chancellor John F. Carney III, Angie Rolufs and Lynn Stichnote.

Dec. 9 – Happy hour, Mattingly's – St. Louis

Andy Allen '00; Tom Costello '06, '07; John Eash '79, '90; David Fernandez '00; Rhonda Galaske '79; Steve Garrett '83, '90, '95; Stephanie Hurtado '09; Jeremiah King '06; Dave Krausch '69; Chris Lange '04; Domenico Puleo '06; Sue Rothschild '74; Tom Schneider '75; and Dale Spence '97, '05.



Central Ozarks Shrimp Feed

**We want your
section news**

**Submit your section
news by April 5
to alumni@mst.edu
for inclusion in the
Summer 2011 issue.**



John Berwick:

Century Club member

Proudly displayed on a wall in the late **John D. Berwick Jr.**'s home was a wooden plaque from the Miner Alumni Association. The plaque signifies that Mr. Berwick, MetE'39, was a member of the Century Club.

The Century Club has no meeting hall. There is no ritual of initiation and its members don't gather for meetings or celebrations. That doesn't make those members any less loyal, though.

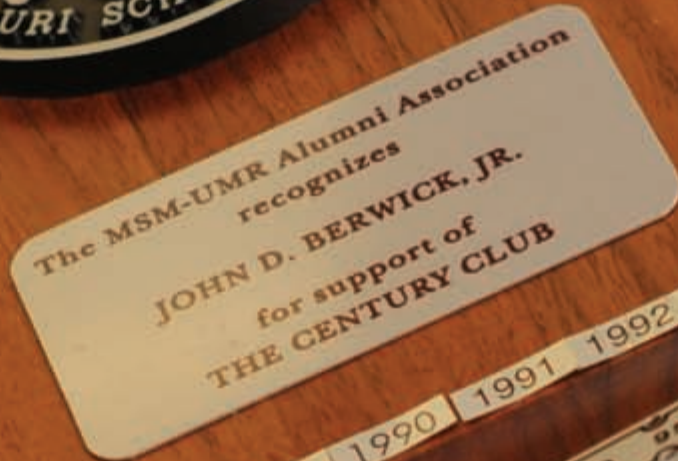
The Century Club is a designation that recognizes people who donate \$100 or more to the Miner Alumni Association. Mr. Berwick had been receiving club recognition for more than a quarter of a century. And hanging from his plaque was a dangle for every one of those years.

Mr. Berwick, a metallurgist who specialized in the continuous casting of brass and copper products, retired from Scovill Manufacturing in Connecticut. In recent years he had taken to wearing his college ring. It shined up nicely with regular wear.

Mr. Berwick passed away last fall. He is survived by three sons, Scott, John III and Kent, five grandchildren and three great-grandchildren.

While settling his father's accounts, Mr. Berwick's son, Kent, found a record of his ongoing giving to The Miner Alumni Association.

"Now I know what the beautiful MSM-UMR Century Club plaque with all the little plates hanging below it actually means," Kent Berwick wrote in a letter to the Miner Alumni Association in September. "He was proud of his school, so I am going to slip one last Century Club donation your way."





Miner Alumni Association

107 Castleman Hall, 400 W. 10th St.
Rolla, MO 65409-0650

ADDRESS SERvic E REqu ESt ED

Parents: If this issue of Missouri S&T Magazine is addressed to your son or daughter who has established a separate permanent address, please notify us of the new address: 573-341-4145 or alumni@mst.edu.



Millennium Arch

Because it looks cool in a Flintstones' sort of way.

St. Pat's tradition. We love it that St. Pat and his court arrive aboard a **manure spreader.**



"Look to your left; look to your right."
How dramatic!

Solar Village.

It's kinda like Greenwich Village, only not so much.



Stonehenge.

One of the Seven Wonders of Phelps County.

A partial reconstruction of the ancient megalith, the Missouri S&T Stonehenge is the largest monument ever to be cut with a waterjet. Approximately 160 tons of granite were used in the structure, which was dedicated on the summer solstice in 1984.

Solar car.

Cruising North America on zero gallons of gas.



140 things we love



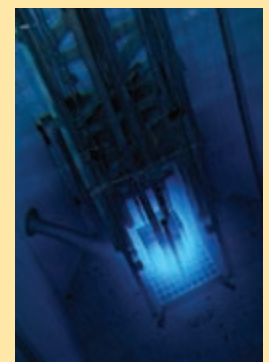
Burrito Fridays.

See you at The Grotto.

Miner Swimming Team: pool sharks

Nuclear Reactor. Our school has a spent **fuel pool.**

Our reactor has been in operation since 1961 and was the first nuclear reactor in Missouri. Known as a "swimming pool" reactor, it sits near the bottom of a large concrete pool of water. But we wouldn't recommend swimming in it.



The Puck.
The circle of life.

Sure, Mizzou has its columns. Texas has a tall tower. Georgia has some famous hedges that football games are played between. But S&T has the one and only Puck.



Joe Miner.

He carries a gun.
And a slide rule.

Share the love: magazine.mst.edu/140things.html