

A large, dark silhouette of a plant with long, thin, arching leaves and a central stem, set against a dark gray background with a fine, light gray diamond grid pattern.

ALUMNI

OF

INFLUENCE

For nearly 150 years, our university has endeavored to go beyond the surface to find solutions to some of the great challenges of our time. And, for nearly 150 years, our alumni have made exploring and expanding the frontiers of human potential, understanding and achievement their mission.

Five years ago, Missouri S&T launched a new tradition by recognizing our first Alumni of Influence honorees. We continue that tradition as we recognize our 2016 Alumni of Influence.

In the following pages, you will read the stories of entrepreneurs, pioneers, discoverers and creators. From outer space to energy, construction to communications, molecular science to military leadership, these graduates have advanced knowledge, accelerated innovation, empowered others and defended freedom.

They come from diverse backgrounds and found their stride in a variety of fields; however, their courage and devotion to excellence unite them. From their professional accomplishments to their willingness to mentor the next generation of leaders, these individuals have helped to place Missouri S&T on the map.

What strikes me most about our Alumni of Influence is not only their outstanding contributions to their professions and the wider world, but also their bold support of their alma mater as advisors, mentors and philanthropists. As honoree Joe Ballard so eloquently put it, "No matter how hard you work, someone has to be willing to open the door and let you in."

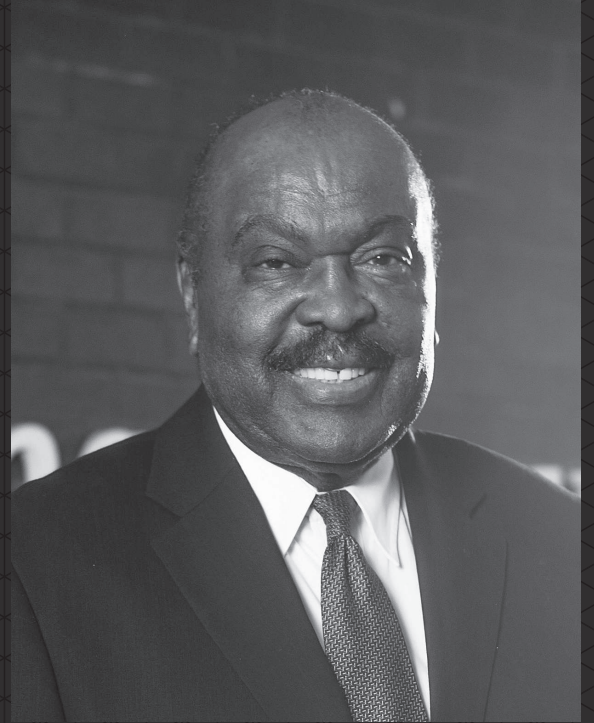
I hope you enjoy learning about these extraordinary alumni. From the risks they took to the creative solutions they found, they exemplify what it means to be Miner!

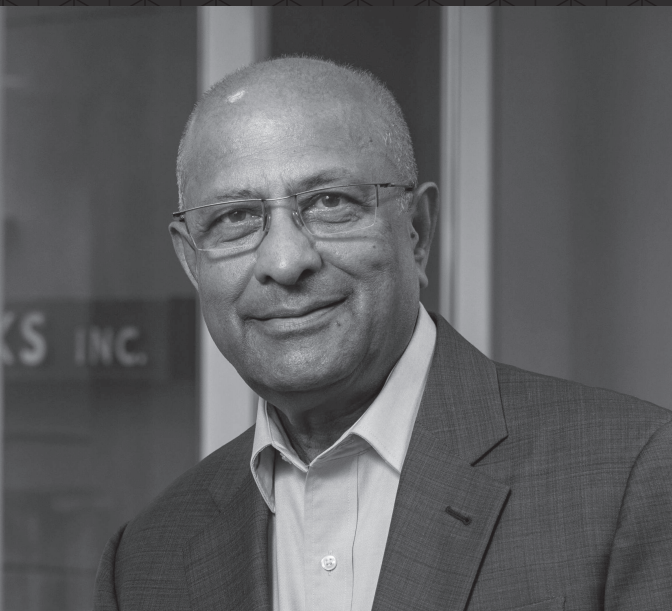
Warmest regards,



Cheryl B. Schrader, Ph.D.
Chancellor, Missouri S&T

ALUMNI OF INFLUENCE





ABOVE AND BEYOND

By Maridel Allinder, allinderm@mst.edu

If influence is about shaping outcomes, the 10 alumni spotlighted on these pages have achieved remarkable results. Across diverse fields and demanding challenges, they have made a difference through the power of technology, the sure footing of national security, the engine of job creation, the exploration of outer space and earth's resources — and as builders raising the roof on a better quality of life.

Their achievements differ a great deal, but their paths share a similar arc. As students, they forged their future in Rolla's classrooms and labs. As leaders, they found their calling at the forefront of their professional fields. As Miners, they raised Missouri S&T's reputation for excellence. And now, as Alumni of Influence, they have earned the university's highest honor.

Five years ago, Missouri S&T's first Alumni of Influence celebration launched a new tradition. That historic gathering in November 2011 marked a milestone as the campus community and alumni nationwide gathered to honor a distinguished group of graduates for their legacy of influence.

The tradition continued this past November, with a gala honoring our 2016 Alumni of Influence. While the group portrait published on page 52 captures the collective spirit of our honorees, it is in their individual stories that we find influence to the power of 10. They are stories about bold moves, better ideas and bootstrapping. They are also stories about big hearts and giving back. We salute these Miners for the lasting impact of their leadership and service — and we thank them for making the world a better place.



A black and white photograph of Joe Ballard, a man with a mustache, wearing a dark suit jacket over a light-colored button-down shirt. He is standing outdoors with his hands clasped in front of him. In the background, there is a building with a curved roof and the text "The Ravens Group, Inc." on it. To the right of the building are tall evergreen trees under a cloudy sky.

The Ravens Group, Inc.

JOE BALLARD:

CHIEF AND COMMANDER

Joe Ballard, MS EMgt'72, says it was Chicago winters, the Army — and Bernard Sarchet — that brought him to Rolla.

After earning a bachelor's degree in electrical engineering from Southern University in Baton Rouge, La., and completing two tours of duty in Vietnam, Ballard joined Illinois Bell in Chicago. "But it was just too cold for me," he says. "I was looking for another job when I received a letter from the Army asking me to return to active duty and offering to pay for a graduate degree."

There was only one hitch: Ballard and the Army couldn't agree on the degree program. "I wanted an MBA, and the Army wanted me to get a master's in electrical engineering," he says. "Then someone mentioned a new program in engineering management started by a man named **Bernard Sarchet**. I called him, we talked, and I ended up leaving Chicago

for Rolla. It was probably the best thing that ever happened to me."

Ballard, now a retired lieutenant general, served in the Army for more than three decades in leadership positions from Korea to Germany to the Pentagon. In 1996, President Bill Clinton appointed him chief and commander of the U.S. Army Corps of Engineers, a federal agency responsible for a huge infrastructure encompassing hundreds of harbors and dams, thousands of miles of waterways and power plants producing nearly a quarter of the nation's hydroelectric power.

"I'd never worked on the civil works side of the Army," says Ballard, the first African-American to serve as chief and commander. "It



"I ENDED UP LEAVING
CHICAGO FOR ROLLA.
IT WAS PROBABLY THE
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was a culture shock. I spent the first two years reorganizing the corps into more of a business organization focused on project management."

After his retirement in 2000, Ballard made good on a promise to his family to "plant a tree and build a house around it." After so many years of Army moves, they wanted to settle down. Ballard also planted new roots in 2001 when he founded the Ravens Group, a company that provides professional services and technical support to U.S. government agencies. (The company name comes from the poem by Edgar Allan Poe, who captured Ballard's imagination as a 7th-grader assigned to research him.)

Ballard also credits another childhood influence with shaping his future — a neighbor

and U.S. Navy veteran who had a home business repairing appliances. "He got me interested in electronics, and he encouraged me to study engineering," Ballard says. "He was my first real mentor."

Ballard is grateful for the opportunities that took him from a segregated sawmill town in Louisiana to Capitol Hill. And he is determined to open doors for future generations. In 2014, he and his wife, **Tessie**, launched the Ravens Group Challenge at Missouri S&T with matching funding for new scholarship endowments benefiting African-American students.

"One of the lessons I learned early in life was that no matter how hard you work, someone has to be willing to open the door and let you in," Ballard says. "Scholarships open the door." ▣



Photos by Jeffrey David Lautenberger

MISSOURI S&T MAGAZINE 5



BOB BRACKBILL:

PETROLEUM PIONEER

Photos by Gerald J. McCarthy

Bob Brackbill, MinE'42, remembers the day he put his career plans on hold to serve his country. It was a December afternoon in 1941, and he was hanging out with the guys at the Sigma Nu house in Rolla.

"It was Sunday, and some of the fellows had gone home for the weekend," says Brackbill. "We were gathered in the chapter room listening to music on the radio. All of a sudden, President Roosevelt came on and announced that we had declared war on Japan. We were stunned."

Brackbill already had a job lined up with Shell Oil Co., but he enlisted in the Army Air Corps cadet training program at Yale University. He earned the rank of major, flew five missions with a B-17 bomb group, including two over Berlin, and was awarded the Bronze Star Medal.

After the war, he took up where he left off — in the oil fields. In 1946, Shell sent him to western Oklahoma to oversee the drilling of one of the deeper wells in the world at the time.

**"WE USED TECHNIQUES THAT
HAD NEVER BEEN USED BEFORE."**

"We used techniques that had never been used before," says Brackbill, a pioneer in the development of wellsite analysis and testing to determine reservoir production capabilities.

One of his next assignments took him to the Northwest Territories of Canada to drill wildcat oil wells. "It was 67 degrees the day I left Tulsa and minus 40 degrees by the time I got to Calgary," says Brackbill. "We waited for the muskeg swamps to freeze so we could skid drilling rigs and housing in on skis."

Brackbill's career with Shell took him to the top as the New York City-based chief executive for petroleum engineering before he was recruited to lead Texas Pacific Oil Co., where his engineers oversaw a landmark project: the conversion of an ore freighter into a drillship that drilled many wells in the Gulf of Thailand and offshore of the Philippines.

When he retired as chair of Texas Pacific, Brackbill bought a few drilling rigs with some business partners and co-founded Robertson Onshore Drilling as chair. The company's strategy — providing small operators with tightly engineered and managed drilling at a fixed rate — proved lucrative. "When we sold the company and our 15 drilling rigs, it returned nearly eight times our initial investment," he says.

Today, this oilman's legacy reaches from the industry he loved to the university he has strengthened with his service as president of the alumni association board and a member of the Academy of Mines and Metallurgy. A trustee emeritus and recipient of an honorary doctor of engineering degree and the Chancellor Medal, he has supported scholarships (including the Class of '42 Scholarship he helped to found with his classmates) and other major projects, including the state-of-the-art classroom in McNutt Hall he funded with his late wife, **Cay**, their daughter, **Mary Hargis**, GeoE'84, and son-in-law, **Mark Hargis**, GeoE'84.

"I didn't have anything when I got to Rolla," says Brackbill, who worked 10 hours a day as an office mail boy in St. Louis to save the money for his first semester. "I want to help students become engineers because our future depends on them." ■





BOB BRINKMANN:

BUILDER AND BIG THINKER

“WE’RE BIG ON
MENTORING —
AND WE’RE ALSO BIG
ON GIVING BACK.”



Photos by Sam O’Keefe\Missouri S&T

Bob Brinkmann, CE’71, credits a mindset he calls looking for “the second right answer” with growing the company he founded more than 30 years ago.

“Engineers are problem solvers, so they look for the first right answer and move on,” says Brinkmann, founder and CEO of Brinkmann Constructors. “The biggest task is getting them to look for the second right answer, which may be a better solution.”

Brinkmann credits this emphasis on creative problem solving with building the company into an industry leader with a 30-state, \$3 billion project portfolio. “We are a service organization as much as a construction company,” he says.

After graduating from Rolla with a degree in civil engineering, Brinkmann joined the Illinois Department of Transportation and worked on the construction of Interstate 64 from St. Louis to Virginia. “I was usually in the middle of nowhere on a stretch of highway with a

survey crew,” he says. “I spent a lot of time blue-topping a sledgehammer.”

During the next decade, jobs with construction companies taught him how the business works — and how it could be done better. In 1984 he founded the R.G. Brinkmann Co. The first two years were a struggle, but by the end of the third year business had tripled.

“I went through every nickel I had that first couple of years,” Brinkmann says. “Being an entrepreneur is about hard work and risk.”

While the company is known today for the client service that brings 80 percent of customers back, its founder says the best part of the business will always be building stuff.

“The fun is in being in your boots putting the footings in,” says Brinkmann, who has two

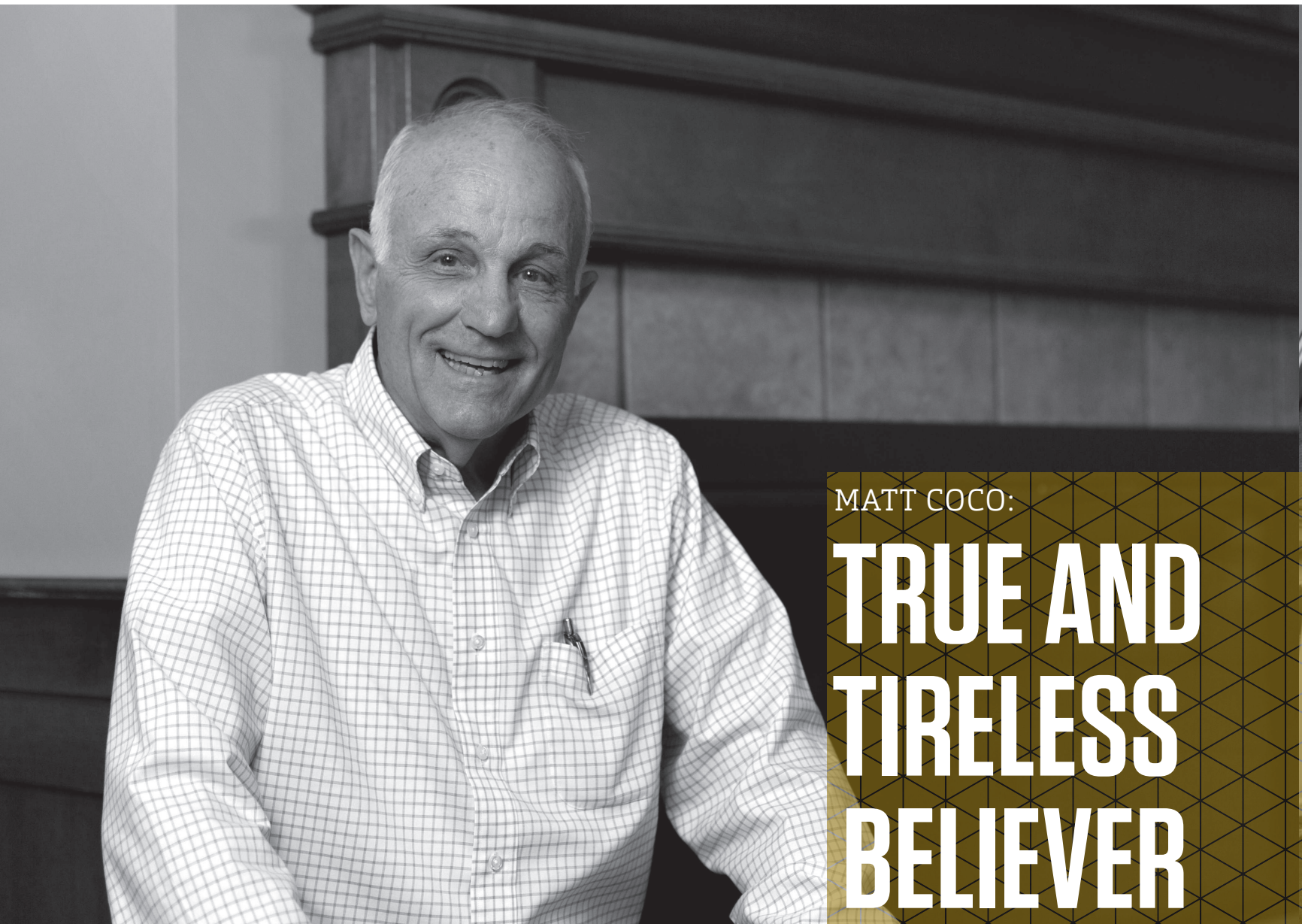
other passions that have shaped the company — mentoring and giving back.

Every employee has a mentor, and every employee participates in Monday training sessions that take place 52 weeks a year.

“Mentoring in the formal sense didn’t exist when I was coming up through the ranks,” Brinkmann says. “My mentors were superintendents and carpenters. We’re big on mentoring — and we’re also big on giving back. Everyone should be involved in a charity.”

For many years, Brinkmann and his wife, **Kim**, hosted a gala in their home to raise money for S&T student design teams. Brinkmann was also among the first donors to the Kummer Student Design Center, and he recently completed a two-year term as president of the S&T Board of Trustees.

Brinkmann Constructors celebrated two milestones in 2014: its 30th anniversary and the sale of the company to employees through an Employee Stock Ownership Plan. “Who better to own the company than the people who built it?” says Brinkmann. ■



MATT COCO:

TRUE AND TIRELESS BELIEVER

Matt Coco, CE'66, was a student the first time he served on the Phi Kappa Theta building committee after a fire destroyed his fraternity house in 1964. "I wanted the new house to have a red brick exterior and a fireplace," he says. "I didn't get either."

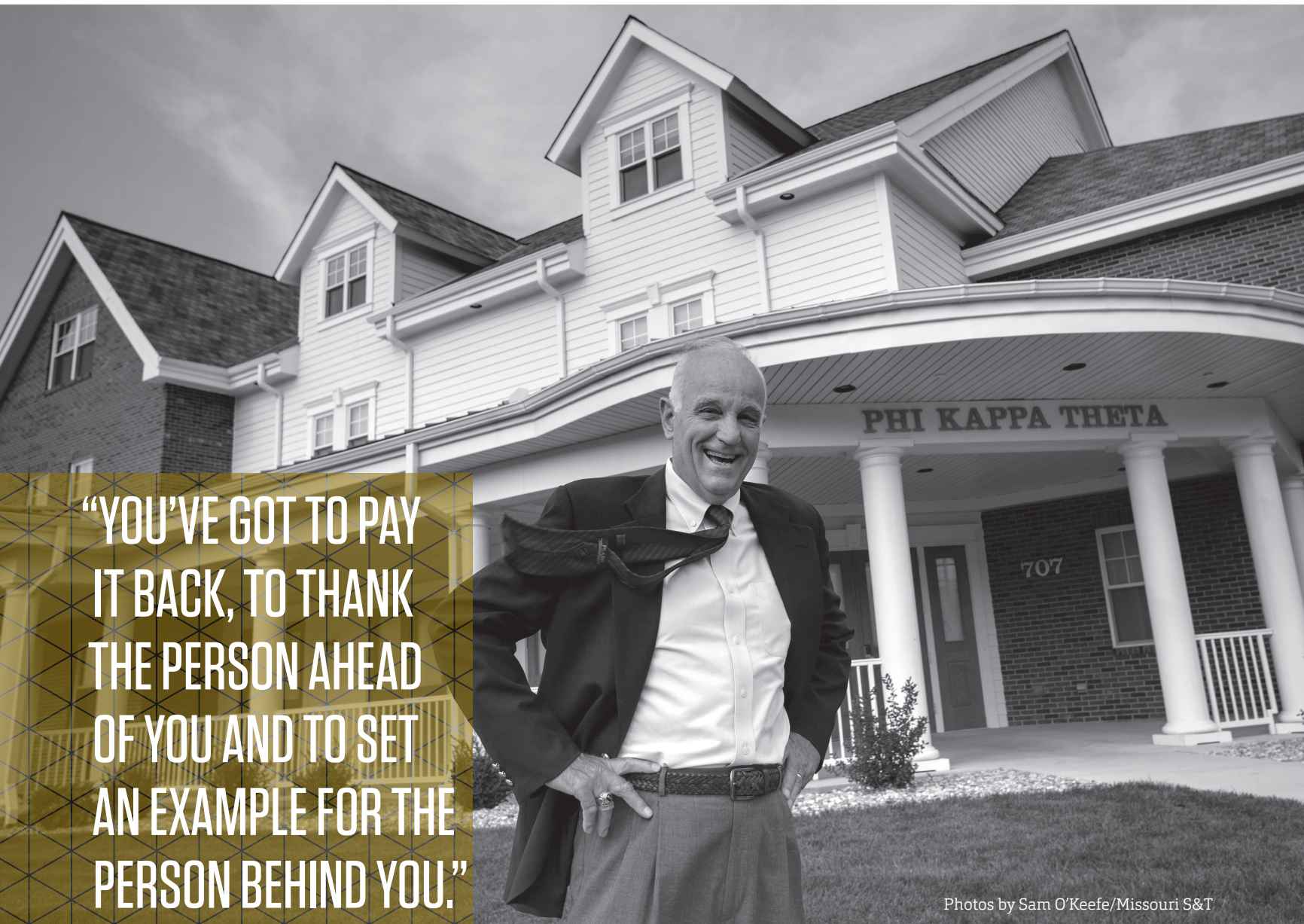
Fifty years later, as the volunteer project manager overseeing the construction of Phi Kappa Theta's current campus home, he got both.

Things have a way of coming full circle for Coco. He has a cookie story to prove it.

"It was a party weekend on campus, and I asked a girl from St. Louis but she couldn't make it," says Coco. "Friday night I was out with friends, and when we returned to the house, there was a girl sitting on the steps. She said she had a box of cookies to deliver to Matt Coco."

The cookies were from the girl he'd invited to be his date. But it was the courier who turned out to be his destiny: they were married a few years later.

Today, the Kathleen and Matteo Coco Great Room in Hasselmann Alumni House bears the names of the couple those cookies brought together. The Miner Alumni Association named the room in recognition of Coco's extraordinary service on the largest project in association history, Hasselmann Alumni House.



“YOU’VE GOT TO PAY IT BACK, TO THANK THE PERSON AHEAD OF YOU AND TO SET AN EXAMPLE FOR THE PERSON BEHIND YOU.”

Photos by Sam O’Keefe/Missouri S&T

Coco spent more than two years involved in every detail of the undertaking, from fundraising and land acquisition to design and construction. In March 2015, at a standing-room-only dedication ceremony, the alumni association announced its naming gift honoring Coco and his late wife.

“Many individuals put their heart and soul into this project, but Matt made it his full-time job — without any compensation except our gratitude,” said Miner Alumni Association Executive Vice President **Darlene Ramsay**, MetE’84, speaking to the packed house. “He oversaw every detail of this monumental project as if it were his own home.”

To anyone who knows him, it was classic Coco.

After graduating from Missouri S&T with a civil engineering degree, Coco joined St. Louis-based Alberici Constructors and went

on to a 40-year career with the company, working on hundreds of projects across the United States.

“I’ve built everything from rocket plants to a hockey rink,” says Coco, a former alumni association president and S&T trustee who retired from Alberici in 2006 as vice president of the building division. “I enjoy the construction process, especially industrial construction because you have to make sure something works.”

Coco’s enthusiasm for making things work is matched by his commitment to making a difference, whether as a member of the Academy of Civil Engineers, a scholarship donor or a fan cheering at a Miner football game.

“You’ve got to pay it back, to thank the person ahead of you and to set an example for the person behind you,” says the guy who hasn’t missed a Homecoming weekend in 50 years. ■

Photos by Gerald J. McCarthy

ROGER DORF:

COMMUNICATIONS PIONEER



As a commuter student, **Roger Dorf**, ME'65, carpooled to Rolla to earn his degree. On days when he finished classes before the others riding with him, he'd head to the student union to study. But what Dorf remembers most about those afternoons is the magical hour when studying succumbed to slapstick.

"Every day around 4 p.m., when it was time for *The Three Stooges*, the TV room was packed," he says. "You couldn't find a seat. I laugh when I think about all those serious engineering students getting their daily dose of comic relief."

With "a love of cars, farm equipment and pretty much all machinery," Dorf chose to major in mechanical engineering. Then, as a co-op student with IBM, he gained a fortuitous foothold in the explosive-growth computer industry that led to a 21-year career with the company.

"I started in the industry when an IBM mainframe took up an entire room and touch-tone dialing was the cutting edge," says Dorf, who worked on the manufacturing side of the company as "a guy making parts." After completing a master's degree in engineering and manufacturing at Boston University, he transitioned into management.

During the next 40 years, he worked at the front line of a communications revolution, bringing cellular service and wireless networking to countries from Honduras to Mauritius to Bulgaria. "It's been absolutely fascinating," he says, "and it has made a difference in so many lives, especially in rural areas."

In a career filled with executive leadership roles, Dorf served as chief operating officer of AT&T Paradyne, vice president of AT&T Network Systems in the Caribbean and Latin America, vice president and general manager of Nortel Networks Broadband Access, president and CEO of Navini Networks, and general manager and vice president of Cisco Systems Broadband Wireless Group. He retired from Cisco in 2009.

As a former president of the Board of Trustees, former president of the Academy of Mechanical and Aerospace Engineers, and a generous donor to countless Missouri S&T initiatives including scholarships, lab funds, new buildings, student design teams and athletics, Dorf continues to invest in the future — and the lives of those who will lead it.

"Education is the No. 1 leveler in the world," he says. "Engineering education is the No. 1 escalator." ■

"I STARTED IN THE INDUSTRY WHEN AN IBM MAINFRAME TOOK UP AN ENTIRE ROOM AND TOUCH-TONE DIALING WAS THE CUTTING EDGE."





BIPIN DOSHI:

INDUSTRY CHAMPION

Photos by Matthew Cashore



“MAKING THE TRANSITION FROM THE CORPORATE WORLD TO PRIVATE BUSINESS WAS A GOOD CHALLENGE.”

Nearly 30 years ago, **Bipin Doshi**, ChE'62, MS ChE'63, left corporate America to buy a struggling gear manufacturing company. As a chemical engineer, his expertise did not encompass gears, axles or transmissions, but he believed he could turn the company around.

He was right. Since Doshi bought Schafer Gear Works in 1988, the company's annual revenue has increased 30-fold, and the number of employees has grown from 50 to over 300.

“Making the transition from the corporate world to private business was a good challenge,” says Doshi, who was no stranger to transition or challenge. At age 20, he traveled 8,000 miles from India to Rolla to study chemical engineering (after earning a bachelor's degree in chemistry at the University of Bombay).

“I came to America with nothing but the suit on my back,” says Doshi, who now serves on Missouri S&T's Board of Trustees. “I was actually wearing it when I landed. Good thing, too, because it was January and there was 8 inches of snow on the ground.”

After earning bachelor's and master's degrees in chemical engineering, Doshi joined the U.S. Rubber Co. (later Uniroyal) as a research engineer in the chemical division. Over the next 20 years, he advanced from process engineer to project manager to vice president of a company subsidiary.

Then, as Doshi puts it, “the corporate raiders of the 1980s came on the scene.” Massive changes were occurring in the corporate world, and Uniroyal was no exception.

“Uniroyal was selling off subsidiaries, and I attempted to buy the one I was running,” he says. “I didn't succeed, but my quest eventually led me to Schafer Gear Works.” He credits his wife, **Linda**, with being his sounding board.

“When you go out on your own, you need a strong business partner,” he says.

In July 2016, he completed the acquisition of another company, his sixth since purchasing Schaefer 28 years ago. “The new acquisition was a good strategic fit for us,” says Doshi, who has guided the company into a strong position serving industries as diverse as agriculture and the off-highway leisure market. “We design and manufacture machined parts for everything from golf carts and ATVs to conveyor belts and Segway.”

Today, as leaders in their industry and the community of South Bend, Ind., the Doshis are also generous contributors to higher education institutions, including Missouri S&T, where they were the first donors to step forward in support of the new chemical and biochemical engineering building after **Jim Bertelsmeyer**, ChE'66, announced his naming gift. The Doshis' major gift named the **Frank Conrad** Unit Operations Laboratory in memory of Doshi's mentor, advisor and friend.

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



DON GUNTHER:

GLOBAL GROUND-BREAKER

“LIFE IS A
LOT MORE
MEANINGFUL
WHEN YOU
HAVE PROBLEMS
TO SOLVE.”



Photos by Angela Seaman

In a construction career that took him from Iowa to Abu Dhabi, **Don Gunther, CE'60**, says that the toughest challenge he ever faced was in Canada, building the colossal Syncrude refinery in northern Alberta.

“The project was immense,” says Gunther, who retired as vice chair of the Bechtel Group in 1999. “We had 10-story cranes and more than 14,000 people working up there, 150 miles north of Edmonton. It was darn cold.”

Gunther’s 40-year career with Bechtel, the nation’s largest construction and engineering company, began with some advice from his father and fellow Miner, **Roy Gunther, CE'27**.

“When I graduated in 1960, my father said the whole world was moving to California, so I should go to work for the best construction company there,” says Gunther, who did his research, wrote to Bechtel and landed a job as a field engineer. His first project was building a fertilizer plant in Iowa. Before long, he had a résumé full of fertilizer plants.

After completing the Syncrude project, which still stands as a construction benchmark in the oil industry, Gunther took his talents into upper management, first as the head of Bechtel’s refinery and chemical

division and soon as the head of an expanded division that included mining and government projects.

When Bechtel formed its first executive committee, Gunther was a founding member. Before long, he was in charge of the company’s international division, where he led a reorganization. “We had a map of the world in our conference room,” Gunther says. “We asked ourselves ‘Where’s the money to build things?’ Then we set up engineering offices in the 20 top markets.”

From India to Oman, the company was ahead of its time in promoting local procurement practices, cultural sensitivity and government relations. “When the big jobs came in, we were ready,” says Gunther. “We increased our international work considerably.”

After retiring from Bechtel, Gunther continued to consult for the company. He also went to work making things better for others.

As an original member and later chair of the Naples Winter Wine Festival, he has helped to raise more than \$150 million for the Naples Children & Education Foundation, which supports nonprofit agencies serving at-risk children in south Florida. As chair of the board of The Immokalee Foundation, he led efforts to provide scholarships for children of agricultural workers from the Caribbean and Latin America. He and his wife, **Rosemary**, also have supported Missouri S&T in many ways, including a scholarship endowment and major addition to Butler-Carlton Civil Engineering Hall.

“When I retired, I thought I’d buy a boat and play golf,” says Gunther, an S&T trustee emeritus and member of the Academy of Civil Engineers. “But I wasn’t having any fun because I wanted to be needed. Life is a lot more meaningful when you have problems to solve. My Rolla education was basic training for that.” ■

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SANDRA MAGNUS:

SPACE SOJOURNER AND SUPER ROLE MODEL

Photo by James Kirby Photography

For a woman who flew three space missions, including a four-month stint aboard the International Space Station conducting experiments, installing structural upgrades and blogging about it with children, **Sandra Magnus**, Phys'86, MS EE'90, is low-key about her legacy.

"I don't think we know what our greatest contributions are," says the former NASA mission specialist who now serves as executive director of the American Institute of Aeronautics and Astronautics. "I'm just hoping at least one young person I interacted with along the way was inspired to achieve a dream."

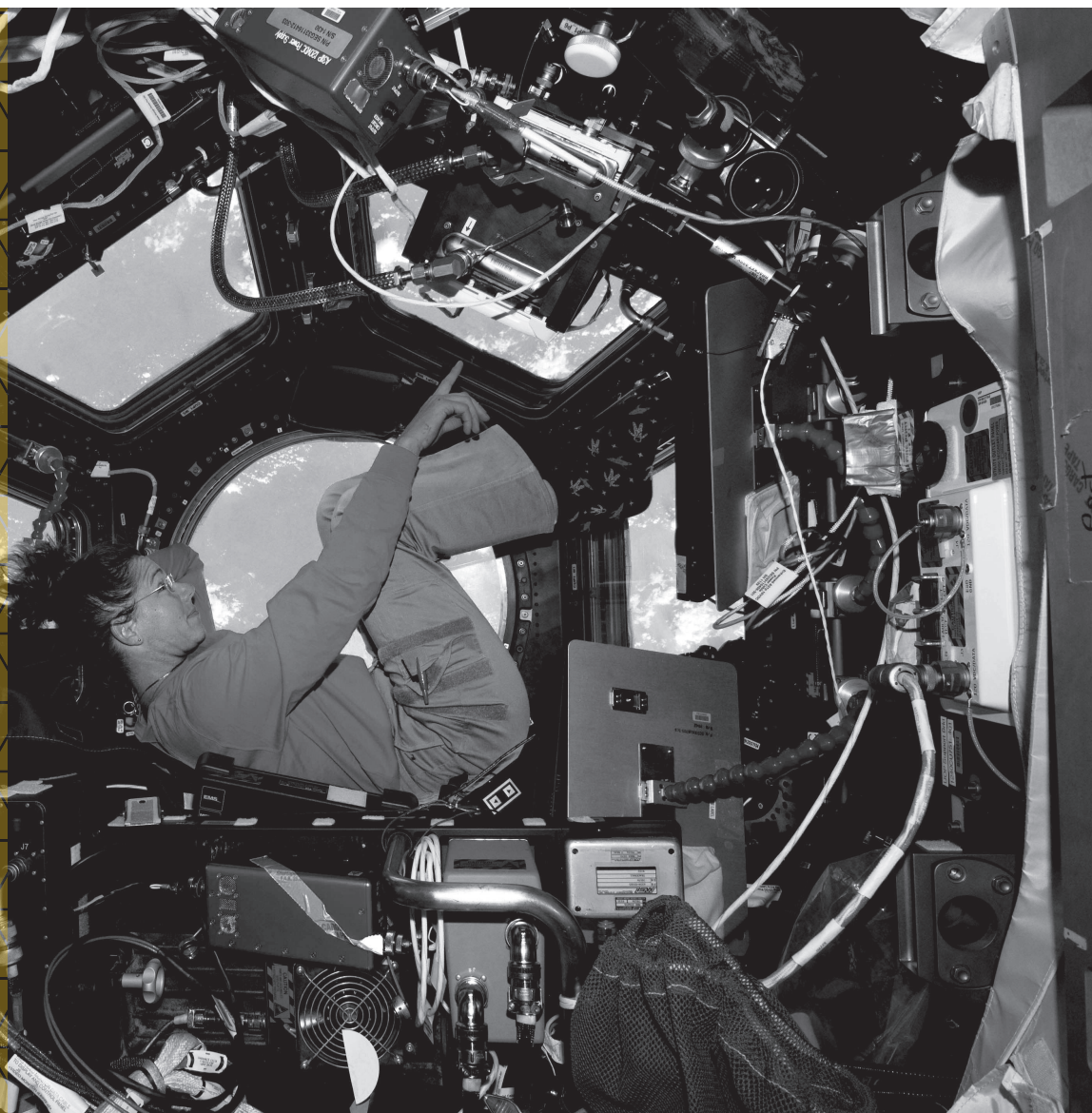
Last year, Magnus got her answer, when a young fan circled back as a college senior to say thanks.

"I was the guest speaker at a senior banquet at the University of Maryland," Magnus says. "After dinner, a young woman came up to me with a letter I wrote to her when she was 7. That was a special moment, especially since she was graduating with a degree in aerospace engineering."

Magnus flew her first mission to the International Space Station in 2002 aboard the space shuttle *Atlantis*. She returned to the space

“I WAS LUCKY
BECAUSE
THE WHOLE
ARC OF MY
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Photo courtesy of NASA



station in 2008 for a four-month assignment as a science officer — and an inspiration to hundreds of children through her “spacebook” blog hosted by Missouri S&T. She made her last flight in 2011 as one of four crew members on the final journey of *Atlantis*, the mission that closed the book on NASA’s shuttle program.

“I was lucky because the whole arc of my career was spent in an international environment,” says Magnus, who holds a doctorate from Georgia Institute of Technology. “The NASA class of 1996 was the start of a transition. We were the International Space Station group.”

Magnus has witnessed the transformation of the space program from the Cold War tension of her childhood to the international cooperation of her years as an astronaut. Now she is

intrigued by the future of space exploration in the private sector: “It will be fascinating to see how the commercialization of space evolves and changes the industry.”

She continues to mentor future generations of scientists and engineers — and to make a difference at Missouri S&T. She visits campus to talk with students, and she supports the Kummer Student Design Center, the departments of physics and electrical and computer engineering, and athletics (Magnus was an intercollegiate soccer player).

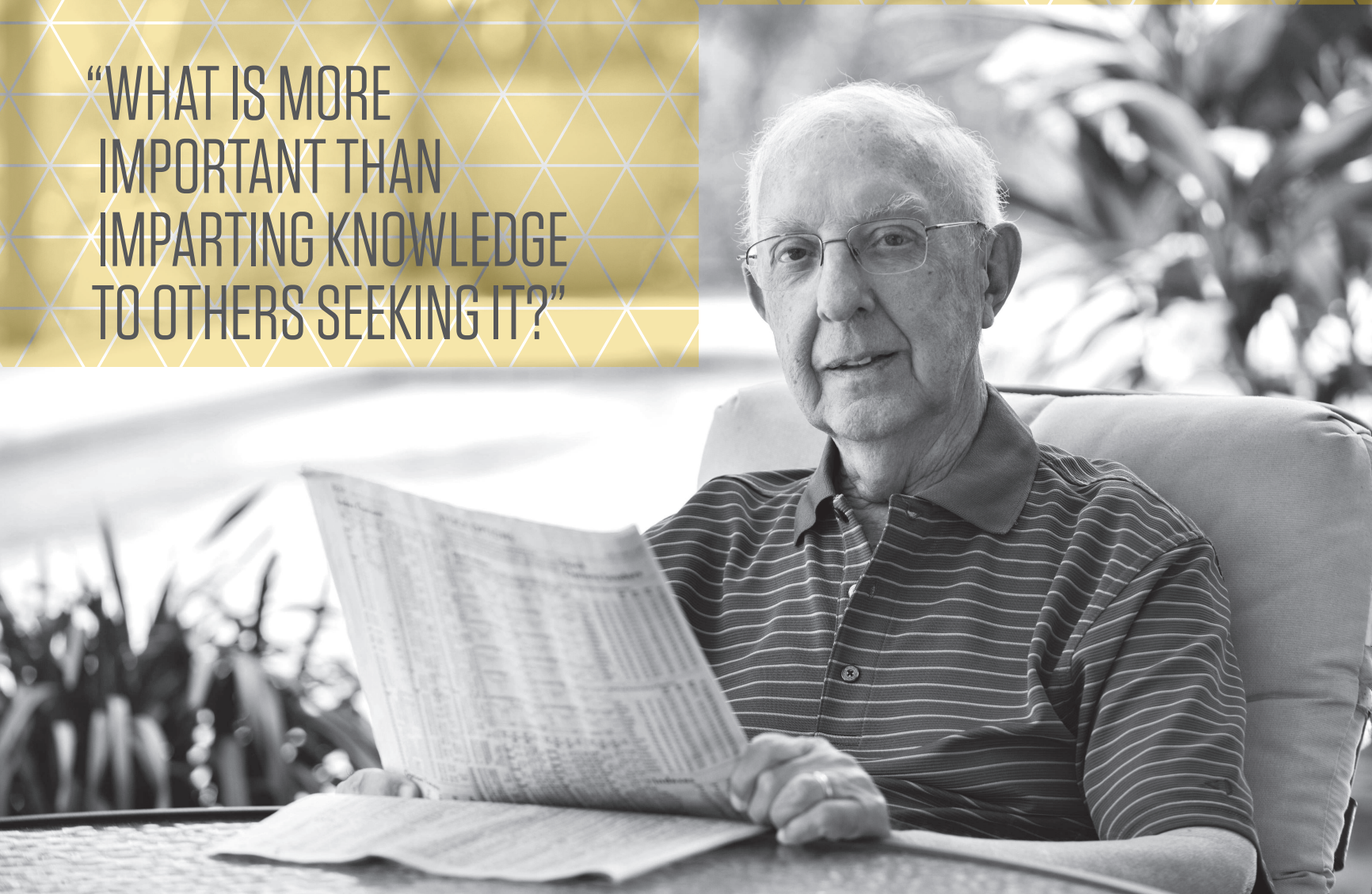
Although she doesn’t spend much time beyond the reaches of gravity anymore, Magnus still enjoys a good space film. *The Martian* is her favorite for sentimental reasons. “It’s the only film that made me homesick for space,” she says. □

A black and white portrait of an elderly man with white hair and glasses, smiling slightly. He is wearing a dark suit jacket over a light-colored button-down shirt. The background is dark and out of focus. The image is framed by a decorative border at the top and bottom consisting of a repeating geometric pattern of triangles in a mustard yellow color.

Photos by Steven B. Williams

DICK VITEK:
**CHEMIST, ENTREPRENEUR
AND CRUSADER**

“WHAT IS MORE
IMPORTANT THAN
IMPARTING KNOWLEDGE
TO OTHERS SEEKING IT?”



Dick Vitek, MS Chem’58, started his career as a research chemist — an archetypal scientist in a white lab coat mixing substances and studying the results. He worked for the Atomic Energy Commission producing uranium from ore. Then, as a scientist with Allied Chemical Co., he developed solid oxidizers for rockets and missiles for the U.S. space program’s Advanced Research Projects Agency — a project that led to his first patent.

But it wasn’t until he went to work for Aldrich Chemical Co. that he found he had a talent for something else: business development. As the national sales and marketing director for Aldrich, he grew the company’s chemical sales exponentially — and learned a great deal about running a business.

In the late 1970s, Vitek founded three startups, including FOTODYNE, the first company to manufacture lab instruments for DNA research. “I was reading a chemistry journal and came across an article on how DNA

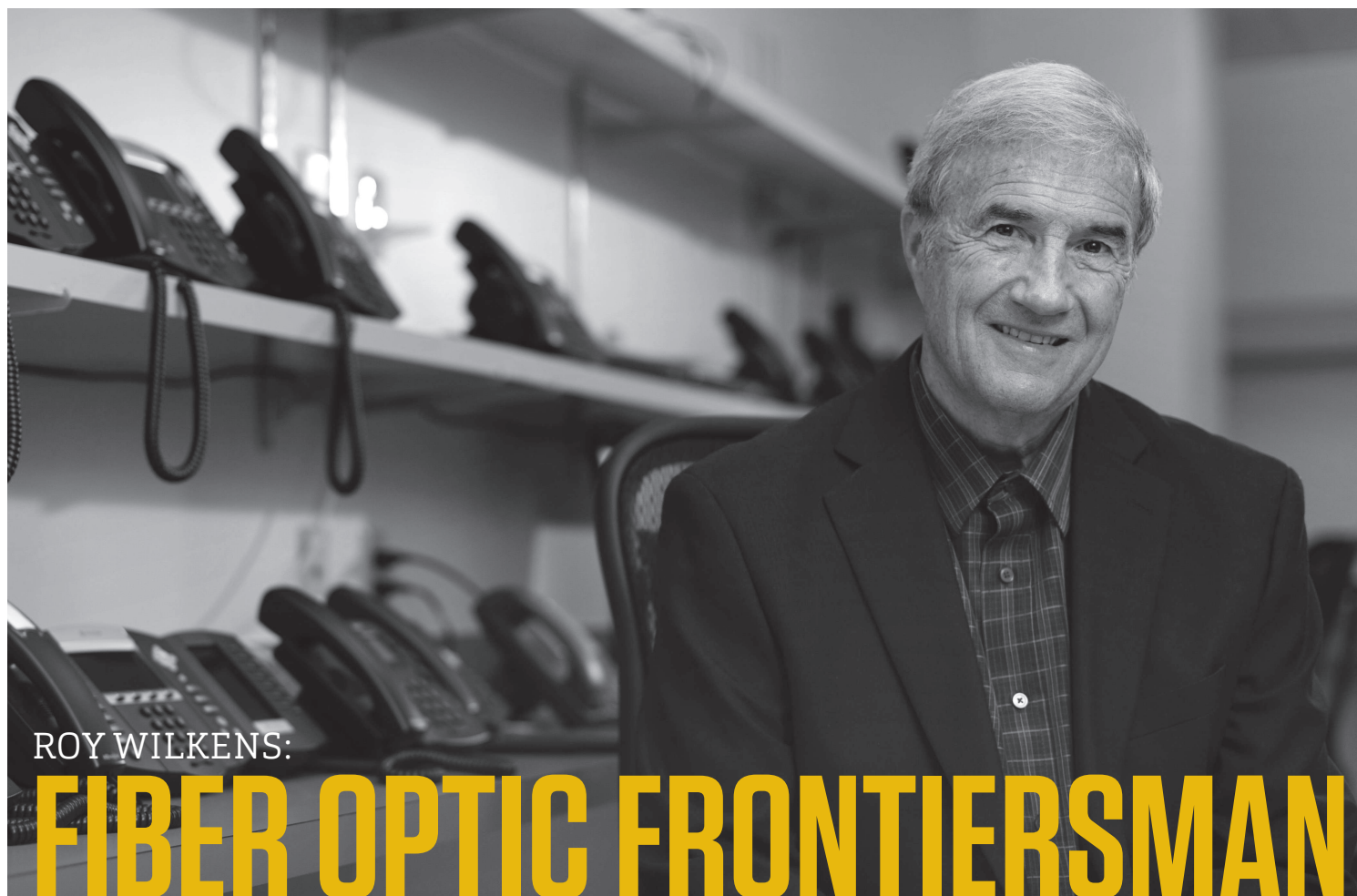
is visualized under UV radiation,” says Vitek, who earned his bachelor’s degree in chemistry at Albion College. “I knew I could build an instrument that would illuminate and photograph DNA.”

From that kernel of an idea grew a company that became a pioneer in molecular imaging. But the entrepreneur and crusader in Vitek didn’t stop there. Working with the U.S. Coast Guard, Vitek developed UV imaging instruments capable of analyzing oil spills to identify the tankers responsible. He then developed a method of testing arsenic levels in wine that made headlines and eventually led the Environmental Protection Agency to impose stricter limits on pesticide use in U.S. vineyards.

Vitek retired as chair and chief executive officer of FOTODYNE in 2002. He continues to make a difference through many philanthropic endeavors, including his support of the Vitek Institute for Robotic Surgery at Mission Hospital in Mission Viejo, Calif. At Missouri S&T, his legacy includes an endowed chair in biochemistry and a graduate fellowship in analytical chemistry. He is also a past president of the Board of Trustees and trustee emeritus, and co-founder of the S&T Foundation for Chemical Research.

Although Vitek says his greatest satisfaction comes from his contributions to environmental issues, he also cites FOTODYNE’s educational division, which offers teacher workshops, equipment loan programs and other resources dedicated to encouraging the next generation of molecular biologists.

“What is more important than imparting knowledge to others seeking it?” he asks. ▣



ROY WILKENS:

FIBER OPTIC FRONTIERSMAN

As the CEO of a major pipeline company, **Roy Wilkens**, EE'66, never expected to take an entrepreneurial risk midway through his career. But he had an idea that catapulted him from a corporate office suite to a basement startup operation with six employees.

He never regretted the move, and he went on to make headlines as the innovator who built a telecommunications network by stringing fiber optic cable through abandoned natural gas pipelines.

"I guess I had more of an entrepreneurial streak than I thought," says Wilkens, who was CEO of Williams Pipeline Co. in 1982 when the breakup of the Bell System monopoly opened the long distance communications market to competition.

"I saw the telecommunications industry exploding, and Williams Pipeline had a vast network of decommissioned oil and gas pipelines doing nothing," says Wilkens, who did what any self-respecting problem-solver does: He put two variables into an equation and found their commonality. In this case, the variables were pipelines and fiber optic cable.

In 1985 Wilkens launched WilTel as a business unit of The Williams Companies (then led by late Rolla alumnus **Vernon Jones**, CE'53). With an 11,000-mile fiber optic network, the company began providing long-distance service to customers as well as selling bandwidth to other carriers as a wholesaler.

"It was a time of enormous opportunity," says Wilkens. "Technology was moving extremely fast, and lots of people jumped into the industry. It was the wild, wild West for five to 10 years."

Although the telecommunications industry has circled back to dominance by a few carriers, another idea Wilkens championed revolutionized television broadcasting: video transmission via fiber optics rather than satellite. In 1990, a WilTel business unit, Vyvx, broke ground by using fiber optics to


transmit video of Super Bowl XXIV from New Orleans to CBS. Today, Level 3 Vyvx continues to bring viewers some of the world's most watched television events.

In 1997, two years after LDDS Communications (later MCI WorldCom) acquired WilTel for \$2 billion, Wilkens retired from the company. He went on to become CEO of network services for McLeodUSA, co-founded Adaption Technologies and served as a director on numerous boards in the telecommunications private and public sectors.

An S&T trustee emeritus and member of the Academy of Electrical and Computer Engineering, Wilkens endowed a professorship in telecommunications at S&T in 2004. He also has supported many other university endeavors, including the Kummer Student Design Center.

For the risk-taker who looked at miles of buried steel pipe and saw a digital empire, there is no training ground for leading the charge into the entrepreneurial unknown.

"No matter what you study in school, you are never prepared," Wilkens says. "The only thing that prepares you is the ability to solve problems. I think that's the definition of an engineer — and the definition of a Rolla graduate." ■



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Photos by Shane Bevel Photography LLC



THE INFINITY OF INFLUENCE UNVEILED

Dozens of Miner alumni, friends and guests from the Rolla community gathered outside Hasselmann Alumni House on Saturday, Nov. 5, for the unveiling and dedication of *The Infinity of Influence*.

This three-piece kinetic sculpture, which stands on the Vaninger Family Plaza outside Hasselmann Alumni House, was created to honor Missouri S&T's Alumni of Influence.

Following remarks by Chancellor **Cheryl B. Schrader** and **Darlene Ramsay**, assistant vice chancellor for university advancement, a curtain was dropped to unveil the sculpture. After the unveiling, guests were treated to high tea.

See the story at right for more information about the sculpture and its creator.



Photo by Iris McLister

INFLUENCE IN MOTION: A NEW SCULPTURE HONORS S&T ALUMNI



Mark White's kinetic art starts with something familiar to every Rolla grad: problem-solving. The movement of his large-scale metal sculptures is often described as mesmerizing and meditative.

But make no mistake. Achieving this hypnotic quality is a complex balance of math, metal fabrication and Mother Nature.

"Making kinetic sculpture is first and foremost problem-solving," says White, the New Mexico-based artist who created the new art installation in the Vaninger Family Plaza at Hasselmann Alumni House. The site-specific piece, *The Infinity of Influence*, was dedicated during the university's Alumni of Influence celebration on Nov. 5.

By calculating movement and counter-movement, White creates 3-D works in copper and stainless steel that weave revolving optical illusions in the wind. His sculpture is designed to respond to wind velocity ranging from the slightest breeze to a 100-mph gale. "These pieces have to hold up in tough weather conditions," he says.

A native of Centralia, Ill., White earned a bachelor's degree in sociology from Southern

Illinois University and pursued graduate coursework in art as well as studying independently with American sculptor Lincoln Fox and Russian master Valentin Okorokov.

After a stint as a social worker and economic development planner, White returned to the job he did to put himself through college: creating architectural metal work for buildings. And this is where his second career was born.

"I started cutting out dance figures in copper because my daughter was a modern dancer at the time," says White. "I suspended them in the air like mobiles and watched them spin. Then I started abstracting everything to get to the essence of movement."

White's pieces are included in private and public collections nationwide. He has also completed many civic and corporate commissions for large-scale outdoor works. His sculpture owned by the late Joffrey Ballet co-founder Gerald Arpino was seen in the 2003 film, "The Company."

From his studio on Canyon Road in Santa Fe, White continues to make art melding metal and air. Meanwhile, the winds of south-central Missouri are moving his newest work in a tribute to influence on the Missouri S&T campus.







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2016 ALUMNI OF INFLUENCE GALA

Missouri S&T rolled out the red carpet at Hasselmann Alumni House on Nov. 5 to commemorate the university's second Alumni of Influence Gala. Ten remarkable Miners were honored for their leadership and accomplishments. The following pages feature scenes from the evening.

1. Guests left their cars with the valet and entered the gala on a red carpet.
2. **Darlene Ramsay**, MetE'84, greets 2011 honoree **John Mathes**, CE'67, MS CE'68.
3. **Nuran Ercal**, the Richard K. Vitek/ Foundation for Chemical Research Endowed Chair in Biochemistry, visits with **Cynthia Tang**, Econ'85, and **Francisca Oboh-Ikuenobe**, interim chair of geosciences and geological and petroleum engineering.
4. Honorees and guests mingled during a reception before dinner in the Kathleen and Matteo Coco Great Room.
5. Alumni of Influence honoree **Bipin Doshi**, ChE'62, MS ChE'63, visits with 2011 Alumni of Influence honoree **John Fairbanks**, EE'71.
6. Honoree **Roy Wilkens**, EE'66 (second from right) poses with Dale Hubbard (left), Eric Wilkens (second from left) and Todd Wilkens (right).
7. **Ralph Flori**, PetE'79, MS PetE'81, PhD PetE'87, associate professor of petroleum engineering, poses with his wife, **Beverly**, Chem'79, MS Chem'85.
8. Current and former faculty were among the guests who turned out to help honor the 10 Alumni of Influence at the reception that kicked off the gala.



2016 ALUMNI OF INFLUENCE GALA

1. The Alumni of Influence Gala featured a dinner with elegantly adorned tables in the Kinyon-Koeppel Grand Hall.
2. A program of the evening's events was placed at every seat.
3. Chancellor **Cheryl B. Schrader** leads the evening's festivities.
4. The Kinyon-Koeppel Grand Hall is full of celebration during the program.
5. Col. **Tom Akers**, Math'73, MS Math'75, serves as master of ceremonies.
6. **Alyssa Snider**, a senior in petroleum engineering, escorts honoree **Bob Brackbill**, MinE'42.
7. **Elizabeth Bowles**, a Ph.D. candidate in chemistry, escorts honoree **Dick Vitek**, MS Chem'58.
8. **Racheal Lawal**, center, a senior in chemical engineering, recognizes honoree **Bipin Doshi**, ChE'62, MS ChE'63.
9. **Cody Seckfort**, a senior in geological engineering and an Army ROTC cadet, recognizes honoree **Joe Ballard**, MS EMgt'72.
10. The evening closed with a program honoring the Alumni of Influence. Current S&T students introduced themselves, recognized the honorees and spoke about the impact that each of them had on their lives.



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2016 ALUMNI OF INFLUENCE GALA

1. Honoree **Roger Dorf**, ME'65, poses with his wife, **Sandra**.
2. A pianist entertains guests in the Kathleen and Matteo Coco Great Room.
3. Honoree **Bob Brinkmann**, CE'71, visits with **Jeff Schrader** and guests.
4. There were 180 alumni, faculty, staff, students and friends in attendance at the gala.
5. 2011 honoree **Jim Bertelsmeyer**, ChE'66, poses with his wife, **Glenda**.
6. 2011 honoree **Cindy Tang**, Econ'85, visits with **Warren K. Wray**, vice chancellor for Global and Strategic Partnerships, and his wife, **Mary Sheffield Wray**, in the John O. Farmer Alumni Lounge.
7. **Matt O'Keefe**, MetE'85, chair of materials science and engineering, poses with honoree **Matt Coco**, CE'66, and **Ben Hackett**, a senior in mechanical engineering and Phi Kappa Theta member.
8. 2011 honoree **Gary Havener**, Math'62.
9. Honoree **Joe Ballard**, MS EMgt'72, visits with guests during the reception.



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ALUMNI **OF** INFLUENCE





Before the Alumni of Influence gala, the honorees gather for a group photo and a cocktail reception in the Black Box Theatre in Castleman Hall. Chancellor **Cheryl B. Schrader**, with **Joan Nesbitt**, vice chancellor for University Advancement, gave a toast to honor the 2016 Alumni of Influence.

Photo far left, front row from left: **Dick Vitek**, MS Chem'58; **Bob Brackbill**, MinE'42; and **Bipin Doshi**, ChE'62, MS ChE'63. Back row from left: **Roger Dorf**, ME'65; **Joe Ballard**, MS EMgt'72; **Roy Wilkens**, EE'66; **Matt Coco**, CE'66; and **Bob Brinkmann**, CE'71. Not pictured: **Sandra Magnus**, Phys'86, MS EE'90; and **Don Gunther**, CE'60, who were unable to attend the gala.



Missouri S&T launched a new tradition in 2011 when we honored our first Alumni of Influence. That initiative was a combined effort by the alumni, faculty, staff and students who selected our inaugural honorees. For this year's celebration, we asked a committee made up of our 2011 honorees to review nominations and make recommendations. We thank those who served on the selection committee, and we salute our full delegation — 2011 and 2016 honorees — for your high achievement, inspired leadership and dedicated service.

Thomas Akers, Math'73, MS Math'75
Dick Arnoldy, CE'69, MS EMgt'73
Keith Bailey, ME'64
Joe Ballard, MS EMgt'72
Robert Bay, CE'49
Jerry Bayless, CE'59, MS CE'62
Jon Bereisa, EE'67, MS EE'70
Jim Bertelsmeyer, ChE'66
Bob Brackbill, MinE'42
Bob Brinkmann, CE'71
Philip Chen, MS ME'65
Matt Coco, CE'66
Delbert Day, CerE'58
Roger Dorf, ME'65
Bipin Doshi, ChE'62, MS ChE'63
Farouk El-Baz, MS GGph'61, PhD GGph'64
John Fairbanks, EE'71
Gary Forsee, CE'72
Don Gunther, CE'60

Gary Havener, Math'62
Thomas Holmes, MinE'50
Vernon Jones, CE'53
Fred Kummer, CE'55
Sandra Magnus, Phys'86, MS EE'90
John Mathes, CE'67, MS CE'68
George Mueller, EE'39
Zebulun Nash, ChE'72
Mariana Rodriguez, CE'80
Richard Stegemeier, PetE'50
Steve Sullivan, EE'89
Cindy Tang, Econ'85
John Toomey, ME'49, MS ME'51
Ed Tuck, EE'53
Dick Vitek, MS Chem'58
Ted Weise, EE'67
Gary White, CE'85, MS CE'87
Roy Wilkens, EE'66
Joan Woodard, Math'73

