SUCCESS
Mission

The College of Engineering’s mission is to do purposeful work that impacts our global society. This important work includes:

• providing an excellent education for students,
• generating new knowledge,
• applying that knowledge to develop and implement solutions for global problems,
• working with internal and external partners to conduct meaningful engagement, and
• stimulating local, regional, and global economic development.

Just a few months ago, I had the honor of presenting the charge to our most recent graduates. I challenged them to use their tools wisely and help others succeed, to be innovative in order to solve problems that our society faces, and to be active in their communities so they might shape the future for the better. I reminded them that the diploma they would receive was but one milestone in their journey of lifelong learning.

As I reviewed the profiles presented in this publication, I was reminded of that charge to our graduates. These profiles are incredible examples of engineering graduates who have gone on to make a difference in their communities and the world. This is success at its best. In my freshman year as dean of the College of Engineering, I have quickly learned that alumni like these are representative of so many others.

I invite you to visit campus in the near future, so that you might share your story of success.

David McLean, Dean
College of Engineering
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Clearing the Smoke

On a planet of more than 7 billion people, about 3 billion people in the developing world rely on wood, charcoal, and other biomass to cook their food. Traditional cookstoves and open fires are inefficient and dirty, and smoke inhalation from these sources contribute to 4 million premature deaths annually.

Danny Wilson is among the scientists working to reduce the grim figures, by building and distributing better and cleaner cookstoves that meet families’ cultural, economic, and household needs. And the College of Engineering graduate will have the support of a Fulbright Fellowship to pursue his goals in India.

“It is so encouraging to receive funds from the U.S. Fulbright Program to pursue my research on cookstoves in India,” Wilson says. “I wake up every day excited to be part of the solution to this global problem.”

Wilson’s engineering ambitions took root in a haunted house on Harmony Road. Throughout junior high and high school in Fort Collins, Wilson and his friends learned how to build homemade infrared cameras and to use pneumatic actuators and mechatronic devices to move spooky and scary figures and critters. “We just loved it,” Wilson says, adding that the group ran and improved the haunted house each year until they graduated high school. The activities sparked Wilson’s technical curiosities, and led him to study engineering at Colorado State University.

While at CSU, Wilson pursued a degree in mechanical engineering and a teaching license. As an undergraduate, he worked with Aaron Benally, who runs the College’s Women and Minorities in Engineering Program, and Dr. Michael De Miranda, from the CSU School of Education, to develop the STEM (Science, Technology, Engineering, and Mathematics) Institute, a summer program for underprivileged middle-school and high school students. “I was pretty deep on the education side even before I graduated,” Wilson says, “and I felt passionate about teaching. I’m so thankful for all the opportunities CSU gave me. I especially appreciate all the scholarships and financial aid I received.”

Wilson graduated in 2008 and followed that passion as a student teacher at Poudre High School in Fort Collins. Wilson taught shop, including machining and robotics classes, and oriented his students toward engineering and technology projects, using three-dimensional computer-aided design programs and the school’s lathe and milling equipment (purchased through a grant from the Bohemian Foundation).
Following a year of teaching, wanderlust compelled Wilson to travel to Southeast Asia for a four-month backpacking tour, including a month in Burma. “That experience had a big impact on me and what I wanted to do,” says Wilson. “I spent a lot of time interacting with people living in poverty. The problems I noticed, related to access to energy, clean water, or sanitation services, are all problems that engineers solve, and I thought I could apply my skills toward alleviating some of these challenges in the developing world.”

Upon returning to the states, Wilson initially worked for Triumph Aerospace in Seattle, developing landing-gear and brake systems for commercial jets. Nick Boone, a CSU classmate and engineering graduate, helped him land the job, after the two had worked together on their senior design project, which resulted in an award-winning entry in the Society of Automated Engineers’ Aero Design competition. “I just don’t think that there’s any way that I’d be able to do the work that I’ve done were it not for the experiences and help that I got at CSU,” Wilson says.

In Fall 2010, Wilson began a graduate program in mechanical engineering as a National Science Foundation Fellow at the University of California, Berkeley. Wilson currently works under the supervision of Dr. Alice Agogino and Dr. Ashok Gadgil. While receiving his master’s degree, Wilson began supporting the lab’s research on cookstove design and life-cycle assessment of cookstove emissions. His contributions helped an existing research project in Darfur, Sudan, which has worked with a nonprofit organization to provide 27,500 cookstoves, designed specifically for regional uses and to counter the strife related to food security and safety. (Just as Wilson and scientists at Cal-Berkeley are meeting the global challenge to design and distribute clean cookstoves, researchers at the CSU Engines and Energy Conversion Laboratory have also developed cookstoves that can alleviate health issues and poverty.)

Wilson’s industrious endeavors were rewarded this year with a Fulbright Fellowship, which will fund nine months of his doctoral research in India. “Working on issues in the developing world can be challenging in many ways, not the least of which is funding,” he says. “I am excited for the opportunity to work improving residential biomass combustion from cooking, because air pollution from cooking fires causes 4 million deaths per year.”

Wilson plans to study the impacts of black carbon aerosol emissions on climate as well as factors that influence cookstove usage. He will also investigate how households might adopt cookstoves that have an integrated thermoelectric generator, which can convert heat to electricity to be used to power lights or charge cellphones or other devices.

He is looking forward to the travel and the opportunity to help other people improve their health and their livelihoods. Beyond completing his Ph.D., Wilson would like to maybe run an engineering consulting firm that supports nonprofits and humanitarian programs that lack technical expertise. But, really, that’s the backup plan.

“My dream job,” Wilson says, “is to be on faculty in mechanical engineering at CSU.”

Danny Wilson

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Liftoff

In the complex and highly specialized field of space engineering, Brittany Stinson helps to ensure that spacecraft are launched as reliably and safely as possible, managing the technical elements that operate between a craft and rocket. Based in Centennial, Colo., Stinson is an engineering integration manager for United Launch Alliance in Centennial, a joint venture between Lockheed Martin Space Systems Co. and the Boeing Co., that develops launch vehicles and systems and provides related services for NASA and the U.S. Department of Defense.

“I’m responsible for making sure the mechanical, electrical, ground operations, and any requirements that cross the interface between the spacecraft and the rocket are met,” she says. It’s a critical job with different challenges from mission to mission, and Stinson says she wouldn’t be where she is today without her experiences at Colorado State – and a formative night at the movies.

Born and raised in Fort Collins, Stinson started considering a career in space engineering after seeing the film, Apollo 13, while in high school. “I went home and told my sister how great I thought the movie was,” Stinson recalls, “and she, basically, turned to me and said, ‘Why don’t you go do it?’ and that’s what I did.”

She took her newly ignited interests to CSU, a logical choice for the daughter and sister of alumni and someone interested in space. As a student in the College of Engineering, Stinson pursued a double major in engineering science, with a concentration on space engineering, and civil engineering.
Through an internship with Dr. Paul Wilbur, she worked on ion propulsion research for NASA’s Interstellar Precursor Mission, which dispatches unmanned probes and spacecraft to the edge of the solar system and beyond.

The research and other activities outside the classroom “really enhanced my educational experience,” Stinson says. “The education, the experiences, and the opportunities that CSU provided helped set up my career, from the technical aspects to learning how to work with people and how to lead.”

After graduation, Stinson took a summer internship with Lockheed Martin, which led to a full-time position with the company. She started off as a coupled loads analyst, examining how launch vehicles and spacecraft will respond to liftoff, engine startup, accelerations, and other forces to reduce space-mission risks. Lockheed Martin then selected Stinson for its Engineering Leadership Development Program, offering her entry and experiences into various fields within the space-engineering industry.

The opportunities helped her hone her skills and interests in structural design and dynamics. It also led her to go back to school and receive her Master of Science in aerospace engineering sciences at the University of Colorado, Boulder, in 2006.

The same year, Stinson moved to United Launch Alliance, developing launch-vehicle designs and support programs. She’s been in her current position since 2011, where she is responsible for lead oversight and management of mission-specific designs, analysis, and operations support. She typically works on one or two mission projects at a time. “With a rocket, you work a mission all the way through the launch, and I like the pace,” Stinson says.

Her major professional highlight – so far – has been working on New Horizons, NASA’s robotic spacecraft mission to Pluto. Launched in January 2006 – back when Pluto was still recognized as a planet – the craft is scheduled to fly within 6,200 miles of the now “dwarf planet” and its moons in July 2015 before continuing through the Kuiper Belt and into interstellar space. In addition to supporting the project design and launch, Stinson got to see the craft and rocket on the launch pad before liftoff.

“It was technically challenging, and being part of a team to launch something to the edge of the solar system was an incredible experience,” Stinson says. Contributing to both the design and launch preparation, she adds, “it’s the best of both worlds.”

Brittany Stinson

“The education, the experiences, and the opportunities that CSU provided helped set up my career, from the technical aspects to learning how to work with people and how to lead.”

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The Process Optimizer

**Families and consumers** never head out to the store to pick up some propylene oxide, but life without the chemical compound is hard to imagine. Propylene oxide, or PO, is a “chemical intermediate” and one of the raw materials for polyols and polyethers used to make foams and fillers found in vehicles, furniture, and carpets, as well as propylene glycols, which are added to soaps, pharmaceuticals, cosmetics, and paints.

“It’s a very large-volume chemical intermediate,” says Angela McVey, a process engineer for Dow Chemical, which globally supplies more than 4 billion pounds of PO annually. And thanks to McVey, the company does so as efficiently and safely as possible.

McVey graduated from Colorado State University with a chemical engineering degree, a course of study she “stumbled into,” she says. Originally from Greeley, McVey attended CSU on a partial music scholarship, playing the French horn, but gravitated toward engineering based on her interests in math, science, and chemistry.

During the summer before her senior year, McVey interned with Dow Chemical at its Freeport, Texas, facility and offices, an hour south of Houston. The experience introduced McVey to process engineering – the design, operation, and control of chemical processes using computers and software. It also opened the door for a career with Dow, which offered McVey a full-time position as she was finishing school. McVey graduated from CSU in May 1992, with fewer than a dozen fellow chemical engineering majors, and started her career that June.

“I had spent four years getting the degree, and I was ready to go out and use it and get some practical work experience,” McVey says.

Back in Freeport, her first job was as a manufacturing engineer, working on the commissioning and startup of a new “ethylene cracker” – a petrochemical production facility. “That experience was very good, because I got to actually see how a plant ran, and we developed a lot of the automation,” McVey says. “It’s about the only way to inherently learn and understand how a plant operates.”

McVey wanted to do more technical and design work, and her next position in the process engineering group enabled that, serving as “one of my more formative jobs.” Starting down the career path of a process engineer, she has worked on process simulations, and designing pumps, heat exchangers, and other equipment and improving existing processes. Her technical experiences also sparked additional interests and skill sets in process safety to prevent accidents and understand the consequences of what happens when things don’t go right.

McVey has advanced at Dow and, now, serves as lead technology manager for propylene oxide facilities. Over the years, she has worked with teams to improve processes and operations at various multimillion-dollar capital projects. In her current position, McVey oversees PO facilities, which utilize what’s known as chlorohydrin technology, all over the world. One of her primary responsibilities is auditing technology centers and process safety at facilities to make sure operations and maintenance are functioning optimally.
“My career has evolved over time,” McVey says. “Now I have more of a global role,” including supporting Dow’s chlorohydrin PO plants in Germany, Brazil, and Australia. “I’ve always felt like I’ve had a home with Dow. I haven’t ever gotten bored,” she says. “I get a lot of satisfaction from project work and completing something.”

McVey also met her husband at Dow, which has been one more bonus of the work. Meanwhile, she’s proud to be a female pioneer in chemical and process engineering. “I’d say acceptance of women in technical and engineering fields has changed,” McVey says. “Now, honestly, I don’t think people think twice about it.”

Having come through CSU as someone who was part of a small class of chemical engineering graduates, McVey has remained grateful for her experiences in Fort Collins and at the College of Engineering. She now contributes to the college and its scholarship programs to enable and support others.

“I have continued to donate back to the Department of Chemical Engineering, and I’ve done that almost since graduating,” McVey says. “I feel like that’s important because when I was in school I was a recipient of a scholarship from the department, and every bit helps to defray the costs of education and to create opportunities.”

Angela McVey

“I’d say acceptance of women in technical and engineering fields has changed. Now, honestly, I don’t think people think twice about it.”
Combination of Love and Success

When Jamie Reichler began considering launching his own engineering firm, he turned to a strong and informed advocate he had met at Colorado State University: his wife, Diane. The Reichlers met in the classroom at CSU, and have, together, built a small and successful company that executes on some large and impressive projects, such as constructing dams, landfills, and other works, from Alaska to the Big Apple to the Rocky Mountain Arsenal.

Jamie was a university transfer student driving to California in 1989, when he stopped in Fort Collins and altered his plans. After seeing the landscape, Jamie decided to resume his education at CSU, getting his bachelor’s in civil engineering in 1991.

While teaching a geotechnical lab course in 1992, Jamie met Diane Scherer, a construction management major, whose parents, sister, and even maternal grandmother – among other relatives – had preceded her at CSU. The instructor and student had some good conversations and recognized a shared fondness for skiing, the outdoors, and dogs. After the semester, Diane asked Jamie out.

“Jamie told me he wouldn’t have dated me unless I was an ‘A’ student, so I was lucky I did well,” says Diane.

In fact, both Jamie and Diane excelled at CSU, making the dean’s list, forming relationships with professors, and benefiting from the curriculum at the College of Engineering. “The CSU education and, particularly, the undergraduate civil engineering experience, is very diverse,” Jamie says. “I got such a great background [among several disciplines]. It really set us up for great careers.”
The couple married in 1997, staying in Colorado. Both Jamie and Diane received master’s degrees in geotechnical engineering from CSU, even as they pursued their careers. Jamie gained several years’ experience working for Smith Geotechnical Engineering Consultants in Fort Collins and then Woodward-Clyde/URS in Denver. Diane worked for the city of Loveland and also GEI Consultants in Denver. With each other’s encouragement and support, they decided to start Reichler Engineering Inc. in 1999, specializing in dam and landfill construction and consulting services.

Seeking to provide professional geotechnical expertise while also offering highly personal client services, Reichler Engineering has kept extremely busy as a two-person operation. Jamie acts as project facilitator and manager for the company’s civil and environmental engineering projects, while Diane handles quality control for the business; manages the finances, contracts, and accounting; and helps wrangle Jamie’s schedule. The couple’s complementary skills and warm relationship come through as an obvious asset.

Among the completed projects and accomplishments, Reichler Engineering opened – and successfully closed – two hazardous-waste landfills at the Rocky Mountain Arsenal, the reclaimed, former chemical weapons complex in Commerce City. Jamie also led construction of the 180-foot-tall, $38 million concrete Elkwater Fork Dam in West Virginia, and consulted on development of a complex drainage system and 90-foot-high retaining wall in Ketchikan, Alaska, to mitigate and control landslide damage on a remote island. Reichler Engineering’s latest project is the $500 million-plus reconstruction of the Gilboa Dam in New York’s Catskill Mountains for New York City’s water supply.

“I really like to see the projects completed,” Jamie says. “That’s what is so rewarding about dam projects.”

The company’s workload and client base has grown steadily, and while they field various calls and requests for their services each month, the Reichlers focus on just one or two projects at a time, enabling them to give customers the attention and detail they deserve. “For a little company, we get to work on all these big projects that large corporations want to get, too,” Jamie says, “and I attribute it to our full client services.”

They also clearly immerse themselves in projects, even bringing their three children along to field sites for vacations in new places – and to see their parents in action. The couple also has two dogs, including a Maltese named Gilboa (after the dam) who often accompanies Jamie to the New York site.

Amid their success, the Reichlers have remembered their roots at CSU. Having both received financial support, including scholarships and research funding, as Colorado State undergraduates and graduate students, they now contribute to the Geotechnical Engineering Scholarship fund in the College of Engineering.

“We’re grateful for what CSU has done for us,” Diane says. “It played a big part in our lives, so we’re really happy to be able to give back.”

“I travel around and work with a lot of engineers and construction and project managers all over the country,” adds Jamie, “and I truly believe the engineering department at CSU is top-notch.”

**Jamie Reichler**

“The CSU education and, particularly, the undergraduate civil engineering experience, is very diverse. I got such a great background [among several disciplines]. It really set us up for great careers.”
Flying High/Taking Off

When Ginger Evans tells engineering graduates that the sky’s the limit, she’s not shelling out pithy advice. Over a 30-plus-year career, Evans has reached the heights of the civil engineering and aviation fields, overseeing the development of illustrious and groundbreaking airports around the world.

Evans grew up in Springfield, Colo., a small farming town in the southeastern corner of the state. After graduating high school, she made a nearly foregone decision about college. “Like most good Colorado farm kids, I went to CSU,” Evans says, adding that she earned a Boettcher Scholarship to cover her in-state tuition. She picked engineering as her focus “completely out of the blue,” and without knowing too much about the field after reading about possible careers.

“It was very tough, and I struggled in the first year and a half,” Evans recalls, “but the larger community [at the College of Engineering] let me know I could do it. I found the faculty to be engaging and supportive, and it was a positive, life-changing experience.”

Evans pursued civil engineering, getting her bachelor’s in 1977 and then receiving her master’s degree at CSU in 1979. During her time on campus, she participated in the Engineering Legislature and other student committees.

Evans first worked for a small engineering firm on a range of municipal and industrial development projects, such as stormwater and drainage systems for subdivisions and coal mines. Her experience in managing design projects helped her land a position with Denver International Airport in 1986, and she’s been in the aviation field ever since.

Evans initially began designing a new runway for Stapleton International, then Denver’s aging airport, located just three miles from downtown. But her bosses soon assigned her a new project: overseeing the design and construction of an entirely new, colossal airport near Commerce City, which could meet growing demands for
airfield and runway capacity and serve as the major inland U.S. hub for air travel.

Evans managed master plan contracts for Denver International Airport, supervising the configuration of the runways, terminals, and road network, and the associated personnel. The new airport opened in 1995, receiving awards and recognition for its architectural design and aesthetics. DIA currently ranks as the fifth busiest airport in the world, and it’s the U.S.’s largest in terms of total area.

“Everyone said we were crazy,” Evans says, for taking on the huge project and trying to make Denver into a national aviation hub. “Guess what? We weren’t. We saw a unique opportunity, and we took it. It’s become a tremendous economic asset for Denver and the region.”

Denver’s new airport helped usher in the modern era of airport development. Cities and developers now view and build airports to be functional and architectural achievements.

The project also set the stage for Evans’ career going forward. For a decade, starting in 1997, Evans worked as aviation manager and principal for Carter & Burgess, a major transportation engineering company (since acquired by Jacobs Engineering Group). In 2008, Evans joined Parsons Corp., where she is senior vice president and manager of the aviation division.

Her projects and accomplishments read like a “where’s where” of international airports and destinations. Over the years, she’s worked on major U.S. airport expansions in New York, Washington, D.C., and back in Denver, for instance. With Parsons, she is now overseeing – among other projects – the $9 billion expansion at the Abu Dhabi International Airport in the United Arab Emirates. At its projected completion in 2017, the renovated airport will be able to serve a whopping 27 million passengers annually and have a gargantuan 7-million-square-foot terminal, more than three times larger than Denver’s.

Ginger Evans

“The most satisfying thing is being able to advance people’s careers on both clients’ staff and on your own staff. That’s really the most enjoyable part of the business for me.”

Evans’ successes have earned her praise from colleagues and professional groups. The American Society of Civil Engineers has awarded her its President’s Medal, and the Environmental Protection Agency and American Public Works Association’s Colorado chapter have also recognized Evans’ work. As a sign of the times, she was the youngest person and first woman to win Engineering News Record’s “Man of the Year” award in 1994. “It was literally a cigar-smoke-filled room at the Plaza Hotel in New York,” Evans recalls with a laugh. The honor has since been renamed the Award of Excellence with respect to her and other female trailblazers. Last year, she was elected to the National Academy of Construction.

With expansive worldwide growth and aviation projects reaching “staggering” scales, Evans mentors young employees and offers guidance and opportunities to students, including CSU engineering and construction management majors. “It’s very important, and there’s a huge need in our industry for that skill set and talent,” Evans says. “The most satisfying thing is being able to advance people’s careers on both clients’ staff and on your own staff. That’s really the most enjoyable part of the business for me.”
Team Player

Like most former athletes, Stephen Malyszko holds onto some special memories from his playing days. Malyszko came to Colorado State University in 1971 to play football for the Rams. CSU wasn’t a gridiron powerhouse at the time, and a severe knee injury ended Malyszko’s career during his second season, but it hardly dampened his connection to CSU and the surrounding landscape of Fort Collins and Colorado.

“I’ll always remember when we would be out on the practice fields, south of Moby Gym, during football season, and standing in the huddle and seeing the most stunning, spectacular sunsets,” Malyszko says. “Those are the kinds of scenes I remember, not whether we won or lost games. It was just a great experience.”

Malyszko graduated from CSU with a bachelor’s degree in electrical engineering, with distinction, in 1975, and received his master’s in the same field in 1977. Today, he runs his own engineering firm, building and programming electrical systems that automate manufacturing lines for a wide range of food, pharmaceutical, and consumer products. And he remains a zealous fan of both Rams sports and Colorado’s mountains and natural beauty. Based in St. Louis, he keeps his office decked out in green and gold.
Coming out of high school in St. Louis, Malyszko says he was “fortunate and blessed” to receive an NCAA football scholarship from CSU, enabling him to attend college, which his family otherwise couldn’t afford. He played on the defensive line for the Rams of the early ’70s until his knee injury forced him to have surgery. In order to retain his scholarship and his connection to the team, Malyszko worked for the athletics department, first serving as equipment manager and then operating video cameras during practices and games. At a time when sports weren’t ubiquitously filmed, Malyszko also recorded CSU basketball games, wrestling meets, track, and cross-country running events. To keep up his own athletic activity, he became an avid skier and helped start the “Ski Bums” – the predecessor to the CSU Snowriders Club – and organized day trips to the slopes.

Academically, Malyszko enjoyed science and math and began studying electrical engineering, fueled by “a fascination with electricity.” During his senior year, a professor, Dr. Tom Brubaker, offered him a graduate research position and a chance to get his master’s. Malyszko accepted the offer, realizing it was a great opportunity to continue his education – and get in two more years of skiing in Colorado.

His CSU education prepared him to design and program systems for automated equipment and production lines. He landed his first job with Ralston Purina, back in St. Louis, as the company’s first specialized control systems engineer. On the job, he designed and programmed systems that ran mixers, extruders, dryers, and other equipment to make pet food. After five years, Malyszko went to work for another company that specialized in manufacturing automation systems.

By 1993, he and his wife, Nancy, realized he could take his management experiences and technical know-how and form their own company. Malisko Engineering Inc. started as a husband-and-wife business, and now employs 38 people in Missouri, Wisconsin, and Colorado. The company provides systems for manufacturing automation, running equipment that helps produce everything from salsa, cookies, instant coffee, and beer to car batteries, eyecare products, pharmaceuticals, and refrigerated supermarket displays.

“We’re behind the scenes, and it’s such a variety,” Malyszko says, “but I know our systems had something to do with the manufacturing of products that many of us use on a daily basis. I sleep at night knowing we provide the best solution for our clients. We’re all about quality and commitment. Going on 19 years, we’ve always been in the black.”

Meanwhile, Malyszko and his family maintain a love affair with Colorado. Both his son and daughter graduated from CSU, and Malyszko travels regularly between Missouri and Colorado. Around St. Louis, he volunteers as a CSU Alumni Ambassador, representing the University at college fairs and high schools. “I can cite the statistics, but it’s not just the facts that provide the real education,” Malyszko says “It’s the experience that people have and carry away with them when they graduate from Colorado State University. That’s how I felt.”

Valuing the importance of financial assistance, Malyszko also supports scholarship funds, such as the University annual appeal, College of Engineering annual appeal, and the Ram Club. “I want to show my appreciation, and to give potential students the opportunity I had,” he says, “because when I went to CSU I didn’t know just how much it would change my life.”

“I don’t look at myself as being someone extraordinary. I’m an ordinary alumnus, and I want to give back to the school.”
Energy Tapped

At the helm of a startup oil and gas exploration company in 2002, Douglas Chapman and two partners turned their attention to a relatively untapped energy resource. Underground shale plays holding natural gas and sometimes liquid oil had long been considered too expensive to drill. But with the emergence of technology, such as horizontal drilling and hydraulic fracturing, Chapman sensed a shift in the economics, and he and his partners acquired leasing rights to the Cana-Woodford Shale formation in Oklahoma.

“We felt like these shale plays were going to be the future. Our game plan was to be on the front edge,” Chapman says. “And we guessed right.”

Chapman – and his colleagues in Source Rock Resources – guessed real right. Their initial leases and activities in the region proved a valuable foothold, and Source Rock eventually partnered with and then sold off its working interests to a large independent oil and gas company. The firm’s activity in shale plays has contributed to the ongoing domestic natural gas boom, and has also allowed Chapman to support students at Colorado State University, where he got his start in engineering.
Chapman and his wife, Karen, moved nine times over the following eight years as he worked all over the country and learned about drilling practices, transportation, and other planning, policy, marketing, and financial management within the industry. “The learning curve was really steep,” Chapman says, “and it was very beneficial.”

Throughout the 1980s, after Chapman left Conoco, he worked for several companies in and out of the oil and gas industry, including launching his first business. Chapman often focused on the management and financial aspects, while teaming with partners who shared an engineering or geophysical background and additional skills. In 1996, he helped execute a management buyout of Torch Energy, a Texas company that raises funds to purchase oil- and gas-producing properties and assets to move resources between production areas and facilities.

The partners at Torch soon split over the company’s direction, with Chapman and two others wanting to focus on shale plays. The other principals disagreed and bought out Chapman and his supporters who used the payment as seed money to start Source Rock Resources in 2002.

Chapman and Source Rock have repeated the approach they used in Cana-Woodford at other shale formations in Indiana and Texas. The firm has remained a small operator that identifies potential prospects, leases lands, and then partners with large companies as drilling ramps up.

“We thought it was a matter of time before the science [and technology] would catch up with the natural resource,” Chapman says of his firm’s foresight. “We just had a strong feeling, and we were ahead of our time.”

Following the successful Cana-Woodford venture, Chapman and his family established the Douglas B. Chapman Family Giving fund at the College of Engineering to support worthy students. The scholarships are administered by the National Christian Foundation. Based in Houston for years, Chapman and his wife, now married 44 years, still visit Colorado a handful of times a year, along with their two children and their families. The family has a place in Steamboat, and they enjoy all the wonderful things Colorado has to offer, including skiing, golfing, fishing, hiking, and bike riding. “I’m thankful for the quality of students who have received these scholarships,” Chapman says, “and I’m elated to be part of the educational program.”

Born in Steamboat Springs and raised in northwestern Colorado, Chapman grew up playing sports and was high school valedictorian. His father worked for Chevron, but without a college degree didn’t climb the corporate ladder. “We didn’t have a lot of excesses,” Chapman says, “and I always appreciated somebody who really got the most out of what they were given.”

Chapman came to CSU in 1965 and started taking mechanical engineering classes after a roommate suggested he apply his math interests to the major. He also served as a member of ROTC and formed close bonds with a handful of friends, who he still stays in touch with. Simply put, Chapman says, “My CSU experience was a great one.”

A summer job for Conoco, the year before he finished school, introduced Chapman to the energy industry and started him down his professional path. After graduation, he went to work for Conoco and joined the company’s executive management development program, gaining experience at jobs across “the entire spectrum of the oil and gas business.” Through a military deferment, he served in ROTC Officers’ School for 15 months and then rejoined Conoco and resumed his career. He and his wife, Karen, moved nine times over the following eight years as he worked all over the country and learned about drilling practices, transportation, and other planning, policy, marketing, and financial management within the industry. “The learning curve was really steep,” Chapman says, “and it was very beneficial.”

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Throughout the 1980s, after Chapman left Conoco, he worked for several companies in and out of the oil and gas industry, including launching his first business. Chapman often focused on the management and financial aspects, while teaming with partners who shared an engineering or geophysical background and additional skills. In 1996, he helped execute a management buyout of Torch Energy, a Texas company that raises funds to purchase oil- and gas-producing properties and assets to move resources between production areas and facilities.

The partners at Torch soon split over the company’s direction, with Chapman and two others wanting to focus on shale plays. The other principals disagreed and bought out Chapman and his supporters who used the payment as seed money to start Source Rock Resources in 2002.

Chapman and Source Rock have repeated the approach they used in Cana-Woodford at other shale formations in Indiana and Texas. The firm has remained a small operator that identifies potential prospects, leases lands, and then partners with large companies as drilling ramps up.

“We thought it was a matter of time before the science [and technology] would catch up with the natural resource,” Chapman says of his firm’s foresight. “We just had a strong feeling, and we were ahead of our time.”

Following the successful Cana-Woodford venture, Chapman and his family established the Douglas B. Chapman Family Giving fund at the College of Engineering to support worthy students. The scholarships are administered by the National Christian Foundation. Based in Houston for years, Chapman and his wife, now married 44 years, still visit Colorado a handful of times a year, along with their two children and their families. The family has a place in Steamboat, and they enjoy all the wonderful things Colorado has to offer, including skiing, golfing, fishing, hiking, and bike riding. “I’m thankful for the quality of students who have received these scholarships,” Chapman says, “and I’m elated to be part of the educational program.”
Harnessing the Flow

When it comes to hydraulic engineering, Colorado State University has an unrivaled institutional legacy. Elwood Mead taught at CSU in the late 19th century, before going on to serve as commissioner of the U.S. Bureau of Reclamation and overseeing the construction of Hoover Dam. (Its reservoir, Lake Mead, honors his role.) Another engineering pioneer, Ralph Parshall, developed the Parshall Flume at CSU in 1921 to accurately measure stream flows; the invention is used around the world to manage rivers and irrigation systems.

Among those historic titans, Neil Grigg has contributed to CSU’s engineering and hydrology reputation, putting in more than 35 years of service at the University since receiving his Ph.D. in 1969 and applying his technical and policy expertise on water management issues worldwide. “I’m a problem-solver,” Grigg says modestly.

Grigg grew up in the South and graduated college from the U.S. Military Academy in 1961, and then went to work with an engineering battalion with the Army Corps of Engineers in Germany and around Europe. The service sparked his interest in opportunities abroad. When he returned to the U.S., he decided to attend CSU for his Ph.D. after having visited Colorado during summers in college. Grigg arrived in 1967, a few years after floods on the South Platte River devastated the Front Range. The aftermath and efforts toward flood recovery familiarized Grigg with local rivers and provided an ideal field lab. “I could see the problems on the ground, and I was also studying them in the classroom,” he says.

During an era when CSU was growing in size and reputation, Grigg worked with several notable engineering faculty members, including Maury Albertson, Daryl Simons, and Everett Richardson, who had followed in the footsteps of Mead and Parshall. “I had a stellar group of professors who were very influential and inspirational for the study of hydraulics,” Grigg says.

After completing his doctoral degree in 1969, Grigg co-founded an engineering firm in Denver, working on flood control and stormwater planning projects, and began teaching at the University of Denver. By 1972, he was teaching at CSU, and also contributing to water-resources management programs and education projects in Brazil and, later, Egypt. With each project, he learned more about the social and policy elements involved in water management. Those experiences led him back east in 1977 to direct the University of North Carolina Water Resources Research Institute, and then to serve as North Carolina’s assistant secretary for natural resources from 1979 to 1982, supervising several state agencies.

Grigg returned to Fort Collins for good in 1982: “CSU needed someone with my experience, and this is where I wanted to be for the long term,” he says. Over the years, he has headed

Neil Grigg

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the civil engineering department, published more than 200 articles in academic journals and books, and run several water research institutes at CSU. His global expertise in navigating water management challenges has also earned him appointments to local, national, and international boards. Since 1988, Grigg has served as river master of the Pecos River, appointed by the U.S. Supreme Court, to oversee sharing of the flows between Texas and New Mexico and to manage conflict among the basin’s stakeholders who have fought over allocation and use for centuries.

In 2004, Grigg helped officials in Colombia revise their national water laws and policies while accounting for political strife in the country. The Army Corps hired him in 2011 to “sort out” public perceptions and opposition to the agency’s flood management practices in the Missouri River Basin. In each case, Grigg seeks to understand the human and natural dynamics at play to aid water managers in their decisions and planning.

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In that context, Grigg remains committed to educating and preparing students as the next generation of hydraulic engineers and water managers, just as his CSU professors did for him. Grigg still teaches and enjoys his relationships with students, and he is proud of how the College of Engineering has grown to attract international scholars. Now, when he travels abroad, some of the leading engineers he encounters are former students.

“My motivation has been to try to understand what's going on and then to organize the information and knowledge about that, so I can explain it to students and other people,” Grigg says. “There are not many people who do what I do.”
A Nuclear Power

During an era when nuclear energy was on the rise, Herbert “Buzz” Bruner helped ensure the industry grew at a safe and sound pace, leading construction of power plants. Now retired, after a 36-year career with Bechtel, Bruner can recall a life and career full of achievements that first took root at Colorado State.

Bruner was born into a CSU family: His parents both went to Colorado State, along with at least 22 relatives, by his own count. Still, he confesses he hardly considered college when he graduated high school during the Korean War. Bruner joined the Marine Corps Reserve and served two years of active duty before turning to school. He first attended junior college in California, and then decided to follow his father’s footsteps into the fields of civil engineering and construction and gain a degree from CSU.

With ambitions to climb into a project superintendent position working on power plants, Bruner came to CSU on the G.I. Bill and graduated in 1960 with a degree in civil engineering. After he worked summers for Bechtel, the massive engineering company offered him a job. Now the largest U.S. engineering and construction company and the world’s fifth largest such firm, Bechtel had built the first American commercial nuclear power reactor in the late 1950s. As the corporation expanded and built new nuclear, fossil-fuel, and hydroelectric plants during the following decades, Bruner’s career took off.

Bruner started out doing surveying and other basic work on a hydroelectric plant in California. Through a management-training track, he learned about the business side of engineering, such as cost scheduling and craft supervision (overseeing ironworkers and boilermakers), which opened the door to several positions on nuclear plants under construction in Minnesota and Michigan. By 1970, he was tagged to be the field construction manager on a Connecticut nuclear project, ultimately supervising all operations, including engineering and design, labor relations, and quality control.

“I liked being in the field and doing what I was doing,” Bruner says. “I don’t think there’s any more satisfaction than to be
running a large project and to watch it grow, and we were doing well as far as the schedule and costs.”

His success in the field led company officials to promote him again in 1974, bringing him to Maryland to oversee the operations and management for various projects. In the course of 14 years, he held several high-level positions, supervising project and construction management and business development for sites around the country and the world; once even managing a 10,000-person workforce. Bruner’s performance and diligence were rewarded when Bechtel elected him senior vice president and partner in 1986.

“I never thought I’d ever become a senior vice president of a company as big as Bechtel. That wasn’t my goal,” Bruner says. When asked about his success, he responds, “There’s no formula. I just kept my head down, worked every job they gave me, and enjoyed what I did. I just wanted to make sure that I could do the job they gave me to do. And if you do it well enough, there’s a whole lot of things that go along with it.”

Bruner maintained his relationship with CSU, serving as a construction management liaison between his alma mater and Bechtel. Starting in 1976, Bruner spent many years cooperating with construction management faculty on curriculum development, offering guidance and opportunities to students, and giving an occasional lecture back on campus.

“I really enjoyed the interaction and working with students,” Bruner says, adding he has always tried to emphasize the importance of building good relationships among project teams, from labor crews to managers. “Having worked in the field as a laborer and a surveyor, I’ve had a lot of empathy and understanding for craftsmen and how they felt. That’s the message I relate to students and people in construction management and engineering. It’s about how to build teams.”

In 2011, CSU awarded Bruner the Civil and Environmental Engineering Award for his contributions and accomplishments. (Buzz Bruner and his family are pictured at left at the Alumni Awards ceremony.) He now resides with his wife of 59 years, Ann, in Arizona, enjoying retirement. Not surprisingly, several of his children and grandchildren and other relatives have followed the family path to CSU and into the engineering and construction management fields.

Buzz Bruner

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Robert Baker worked odd jobs in the 1940s, learning the values of manual labor. While his family lived off shared crops and a few dairy cows on a rented 40 acres in Western Colorado, he picked fruit, cleaned ditches, and helped harvest hay to earn money. His father, who never completed eighth grade, often worked alongside him to support the family. “We didn’t have two nickels to rub together,” Baker says.

One spring day, while dad and son were “cleaning ditch” together, Baker’s father stopped to take a breather and looked at his boy. Baker recalls, “He said, ‘if you get a chance to go to school, go to school, [because] then digging ditch for you will be an option.’ He said ‘For me, I don’t have any options because I didn’t go to school.’ That really registered with me.”

Baker, a good student, was determined to attend college, saving money whenever he could. As high school graduation neared, he received a letter from an uncle who offered to loan him money so he could come to Colorado State University (then Colorado A&M) to study engineering.

As a student in Fort Collins, Baker first worked in a laundry before classes. Later, he washed pots and pans, bused tables, and cooked in the University cafeteria. Baker was frugal with his money and was able to “pay his own way” after the first year of school.

Baker’s industrious work ethic served him well. When he started job interviews during his senior year, in 1954, several companies expressed interest, but a representative from Chicago Bridge & Iron Co. – the historic multinational engineering and construction firm – won him over despite better offers from other businesses. “I walked in that day to the interview, and the first question he asked me, ‘Are you afraid to get your
Of course, Baker hasn’t forgotten his working-class roots or the benefits of his education at Colorado State. He and his wife established the Robert and Thelma Baker Civil Engineering Scholarship in 2007, to open doors for students who, like him, otherwise wouldn’t be able to afford college. (Robert Baker is pictured at left as a featured speaker at the College’s Scholarship Luncheon.)

Robert Baker

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Shortly after starting work with Chicago Bridge & Iron, Baker was called to active duty for two years with the Army Counter Intelligence Corps. Upon his return to CB&I, he worked in the engineering, fabrication, and construction divisions. In his early career, Baker worked in Salt Lake City, Seattle, San Francisco, and Tulsa, Okla. Later he was assigned to the company headquarters outside of Chicago as a senior product manager for nuclear and hydroelectric power generation for leading domestic and international projects.

Over the course of his career, Baker succeeded to vice president of CB&I. Other posts included seven years in Japan, first as a senior manager and subsequently as executive vice president of a joint venture company. Baker completed his 36½-year career serving three years as managing director of CB&I’s wholly owned Australian company.

Beyond the professional challenges, Baker and his wife, Thelma, now married for 56 years, enjoyed the overseas opportunities for the cultural exchanges. Baker counts work experiences in several countries, with some projects taking him into rural, developing areas that reminded him of his own modest and hardscrabble upbringing.

Baker retired from Chicago Bridge & Iron in late 1990. He and Thelma moved to Sandy, Utah, and after five months he realized he wasn’t entirely ready to retire. Baker spent the next two decades logging hours for two small construction firms until finally calling it quits on his long career last year.

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