





RURAL TECHNOLOGY PIONEER: THE EARLY YEARS IN MONUMENT

Dr. Brown is a pioneer in many ways—as an academic, entrepreneur, engineer, and community leader. After completing her doctorate at the University of California Los Angeles (UCLA), she founded NAVSYS Corporation to deliver positioning, navigation, and timing (PNT) technology development supporting government and commercial organizations. But she did not elect to locate her company in an established technology urban center such as northern or southern California or the Netplex in northern Virginia. Instead, she chose Monument, Colorado, which back in 1986 was a small rural town in the Colorado Front Range.

“I grew up in Scotland and love open spaces,” Dr. Brown observes. “While Monument is no longer a rural area, when I founded NAVSYS I didn’t want to live in a congested area but I wanted to purchase some property, own a horse, and enjoy everything that comes with living in the country.”

When it came time to move into a permanent office location, Dr. Brown didn’t want to simply move into an existing office space. She wanted to build her own from an existing historic building in the community.

“The Woodcarver Museum had gone bankrupt,” Dr. Brown recalls. “The state of Colorado was in the midst of a recession in the late 1980s. Chip manufacturing was being moved overseas and local businesses were being shut down. The state put together a program to incentivize local businesses to move into abandoned buildings, which existed all over the state, that provided low interest loans and tax credits. Plus, the area where the building was located had been designated an enterprise zone.”

NAVSYS gradually transformed the building—expanding the building, creating a second floor for other tenants, and setting up a classified area (a requisite since NAVSYS does business with the U.S. military and government). Seeking a collaborative environment, Dr. Brown and her team created a large open area that formerly displayed carved totem poles and sculptures. They hung a volleyball net up in the area so that tenants could take a break from their work to have fun. The building houses NAVSYS along with various startup businesses that are part of the Tri-Lakes Business Incubator that Dr. Brown founded and currently serves as the director.



A TREK TO THE UPPER ARKANSAS VALLEY

NAVSYS HIGHLIGHTS

Founded: 1986

*Technology: Positioning, Navigation, and
Timing (PNT)*

Headquarters: Monument, Colorado

*Other Offices: Salida, Colorado,
Whitehorn, Colorado and Lake George,
Colorado*

URL: www.navsys.com

Dr. Brown was not the only person to find and stay in Monument. Through the late 1990s and early 2000s, the small town grew into a thriving metropolitan area. Dr. Brown found herself no longer in the country. “Monument was no longer the small town that I discovered in 1986,” she jokes. “I reached a crossroads in my professional and personal lives around 2012. Did I want to sell the company and retire? Did I want to relocate? All of them came with strings requiring me to move out of Colorado, and I wasn’t terribly excited about doing so.”

But with a customer base scattered all around the country and world, she concluded it was unnecessary to relocate outside of Colorado. “I wanted to relocate within Colorado to a rural setting more fitting of my lifestyle,” Dr. Brown says. “We could keep our main offices and engineering team in Monument and I could work remotely most of the time. Plus, as I travel often to meet with customers, I was already away from the main office regularly.”

Nestled in the Rocky Mountains and surrounded by some of the tallest peaks in Colorado, Salida is known as one of the coolest town’s in the U.S. for outdoor adventure. It is no big surprise that Dr. Brown choose it as her next home and second office for NAVSYS. “I wasn’t ready to retire,” she notes. “I like what I’m doing, and I’m not sure that I ever want to retire.”

Just as Dr. Brown did when she located NAVSYS in Monument, she elected to move into a non-traditional office—a historic building needing a lot of restoration and remodeling. The Historic Twitchell Building was built in 1890 and originally served as a flophouse where individuals or even families or businesses could rent rooms. Dr. Brown enjoys challenges and believes the historical roots of rural American need to be retained, and she jumped at the opportunity to renovate and occupy the Twitchell Building. “The building is one of the most iconic in Salida,” Dr. Brown comments. “It includes a large mural of an old-fashioned lady and gent with bicycles.”



ALISON BROWN

ACADEMIC CREDENTIALS

Ph.D., Mechanics and Aerospace, UCLA

SM, Aero Astro, MIT

MA, Engineering, University of Cambridge

PROFESSIONAL CREDENTIALS

MA, Engineering, University of Cambridge

*Director, Salida Business Incubator
(since 2014)*

*Director, Tri-Lakes Business Incubator
(since 2008)*

*Consultant, Institute of Defense Analysis
(1998 – 2005)*

*Member, Air Force Science Advisory Board
(1994 – 2003 and 2016-2020)*

*Fellow of the Institute of Navigation
and Sidney Sussex College, Cambridge University*

With required work on the building tallying more than \$600,000, Dr. Brown arranged for a zero-percent interest loan through the U.S.

Department of Agriculture's Rural Economic Development Loan and Grant program. As the sponsoring organization, the Sangre de Cristo Electric Association elected to provide the loan to Dr. Brown and NAVSYS. Even though the cooperative does not serve Salida, the CEO and board concluded that the loan would bring jobs and economic revitalization to an adjacent rural economy. The project commenced work when Dr. Brown and NAVSYS closed on the purchase in early 2013.

A new roof was installed on the building and various updates were made, including installation of an elevator, to bring it up to code. The basement and ground floor were completely renovated. "The basement predates the brick building," Dr. Brown remarks. "It was actually the foundation for the original wood building on the lot."

Just as she did when she renovated the Woodcarvers Museum in Monument, Dr. Brown also launched a business incubator with the opening of the Twitchell Building. "It is a multi tenant building," she explains. "The basement and second floor are comprised of offices. NAVSYS occupies several of those on the second floor, with other professional companies while startups that are part of the Salida Business Incubator occupy the remaining offices on the second floor and all of those in the basement. One of them, a digital media company called Ark Valley Voice, just won six Colorado press awards. I am very proud of them and their accomplishments."

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Dr. Alison Brown, CEO and President, NAVSYS Corporation

Election to the National Academy of Engineering

When one of her staff handed her a package that had just arrived in the mail, Dr. Brown had them set it aside for her review at a later time, thinking that it was a request for paid membership in an association. But within minutes when she started receiving congratulatory emails from engineering peers around the globe, she knew that was not an ordinary package. She had been elected to the National Academy of Engineering (NAE)—a culmination of a professional and academic career dedicated to technology innovation.

Currently, there are nearly 2,600 engineers in the NAE—2,309 in the U.S. and 281 internationally. Dr. Brown was one of only 20 women engineers in the United States selected this year to achieve this honor. Nominations are conducted annually and in secret. A total of 87 U.S. and 18 international members were elected this year. The newly elected class will be formally inducted during a ceremony at the NAE's annual meeting in Washington, D.C. on October 4, 2020.



A MOVE UP TO TWO MILES: **WHITEHORN**

Dr. Brown's nomadic journey to the rural countryside was not finished with her move to Salida in 2013. In 2018 she decided to move again—this time to an even more rural city. With an elevation nearly two miles above sea level, Whitehorn, Colorado is located northwestern Fremont County.

In its heyday, Whitehorn was a booming mining town around the turn of the 20th century—touting a population around 1,000, 10 developed blocks, countless businesses, boardwalks along the streets, and even its own newspaper. When the gold ore played out a decade later, the town's residents moved on. Today, the town claims a population of four. “It doesn't really matter where I live and work,” Dr. Brown comments. “Technology enables me to work from virtually anywhere—whether from my home in Whitehorn, our offices in Salida or Monument, or on the road while visiting customers.”

With the advent of COVID-19 and shelter-in-place mandates, the entire NAVSYS team found themselves mainly working from home.

Because the team already worked from their homes part of the time, the transition has been relatively seamless. “We had implemented Slack for collaboration to facilitate the transition to work from home,” Dr. Brown says. “It has proven to be a highly productive tool, enabling our disparate team to stay focused on their work, communicate and collaborate between ourselves and to continue delivering on the requirements of our customers.”

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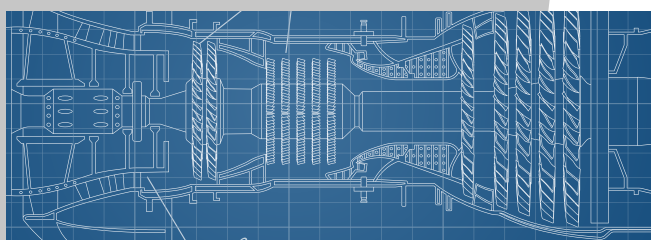
Dr. Alison Brown, CEO and President, NAVSYS Corporation

The decision to implement Slack has even had unexpected benefits for NAVSYS. Because of all the extra network traffic, the cell phone system in areas around rural Colorado began crashing during the early days of shelter in place. “All of us were jumping from one Wi-Fi calling platform to another, which were also failing due to call loads,” Dr. Brown recounts. “We simply transitioned over to Slack, and all of our connectivity issues for voice calls went away.”

LAYING A STEM FOUNDATION FOR LOCAL GIRLS

When Dr. Brown still lived in the Monument area, she volunteered at the University of Colorado at Colorado Springs working with a STEM program with the objective of instilling early interest and academic training for girls. “The numbers show that if you don’t get girls interested in math, science, and engineering when they are 13 or 14 years old, they will not take the necessary prerequisites to succeed in a STEM-related field,” Dr. Brown notes. “They must take the more advanced mathematical and science courses in high school in order to enter into those fields of study in the university.”

To stimulate interest in STEM for young girls, Dr. Brown oversaw a geocaching program, an outdoor recreational activity in which a small cache—typically a small waterproof container containing a logbook—is hidden and is sought by the participants who sign and date the logbook and place it back where they found it. “It was a lot of fun for both the organizers and the kids,” Dr. Brown notes. “In order to locate the caches, the kids had to learn how to use a Global Positioning System receiver. The objective was to get them interested in technology. It also gave the girls a chance to meet women engineers and to ask them questions about their academic studies and professional life.”



When she arrived in Salida, Dr. Brown sought to launch a similar STEM program and went directly to the local high school principal with the idea. He liked it, and their first project consisted of a 3D printing competition. “Not only were high schoolers involved, but we were able to include middle school students as well,” she notes. “I was even able to bring in some of the volunteers from the program with the University of Colorado in Colorado Springs to help with it. They came out with 3D printed models built from the designs and gave out awards and took photos with the winning students.”

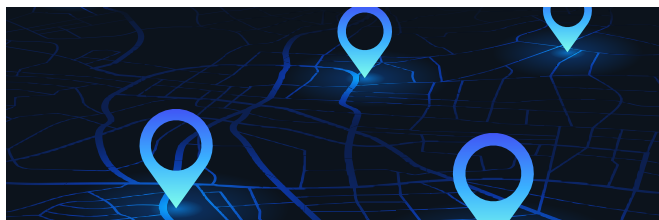
Building on the success of this first STEM project, Dr. Brown and the local high school principal engaged an organization based in Colorado Springs, the Space Foundation, to oversee a second STEM project—one involving a LEGO Robot competition.

“The kids just ate it up,” she says. “There aren’t any computer classes in the local schools. But that doesn’t matter. These projects create that level of interest from the ground up and teach programming skills in a day using Arduino.”

The latest STEM project that Dr. Brown has directed involved drones. “The kids in rural Colorado are very good at taking things apart and putting them back together again,” she ruminates. “In all of this is a valuable engineering skill. If you’re ever in the field with equipment, the very best engineers are the ones who can make all of it work—regardless of what breaks and needs to be fixed.”

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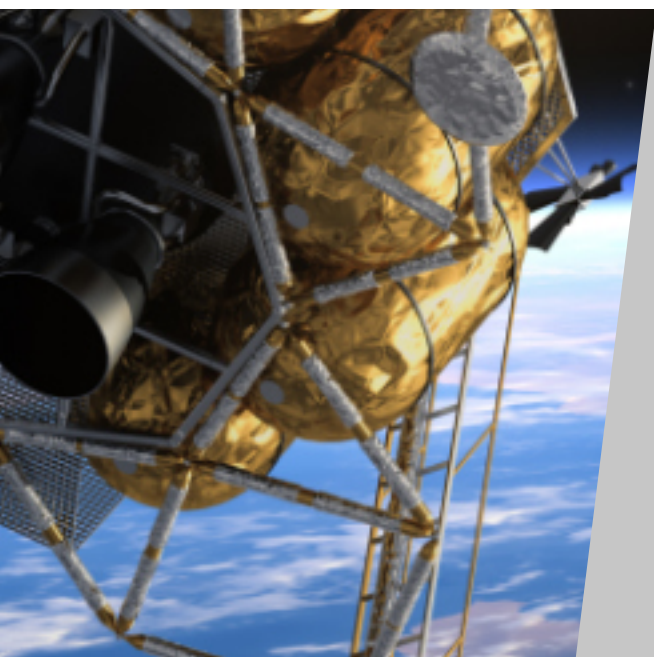
Drones fall into the category of equipment that breaks frequently, according to Dr. Brown. “I donated some drones to the high school, and the principal twisted the arm of the auto shop teacher,” she says. “While there were some doubts, I reassured everyone that the kids would figure out the programming—and I was right. The program has been a big hit. The kids do programming and projects, learning to fly drones and coming up with different ideas on how drones can be used. Suddenly, we have a bunch of kids thinking about careers in technology and graduating high school with a vocational credential as FAA certified drone pilots.”

"JUST FOR FUN" — TAPPING THE POTENTIAL OF RURAL AMERICA

With leaders like Dr. Brown helping to facilitate and sponsor transformative initiatives, the future of technology in rural communities in the U.S. is bright. From her perspective, no experience should be off-limits. Her year of study at MIT is a fitting microcosm. The school was trying to recruit more women into the engineering field, and around 40 percent of the graduate program in Aero Astro was women.

“The entire program was full of geeks,” she jokes. “We had intramural teams, and anyone could be on any team.” And Dr. Brown played just about every sport that was offered. “I played softball, American football, rugby, and even hockey,” she conveys. “We bent the rules a bit to allow even beginners to join in sports and have fun. As an example, for ice hockey, in the D-league the next team member could come onto the ice while you were crawling back to the pen if you fell over.”

Rural communities hold great potential. Those willing to show the same entrepreneurial and professional intensity and commitment to technological learning as Dr. Brown are certain to succeed—and to have a lot of fun at the same time. Indeed, the combination of these factors will elevate rural America, enabling it to assume the mantle of the next American technology corridor.



ABOUT

NAVSYS

NAVSYS is a growing, respected firm providing high-quality technical products and services in GPS hardware design, systems engineering, systems analysis, and software design. NAVSYS has a standing commitment to provide high-quality products and services to both governmental and commercial customers. The company provides specialized GPS products and services for customers by leveraging core technologies, unique technical expertise, innovative engineering approaches, a strong work ethic, and high standards of excellence. Founded in 1986 by Dr. Alison Brown, NAVSYS is dedicated to promoting the use of GPS in a wide variety of commercial and military applications. To learn more, visit www.navsys.com

TechSTART

Fremont Economic Development Corporation is a 501(c)6 professional economic development organization focused directly on business attraction, retention and expansion in Fremont County, Colorado. With an established and growing network of business, academic and governmental partners, we directly assist companies with competitive location or expansion projects by connecting them with the right people, the appropriate resources and the most meaningful and relevant information. FEDC's TechSTART program is an award-winning tech sector co-working community, creating an innovation catalyst for rural Colorado.

FEDC TechSTART is a proud supporter of the Upper Arkansas Technology Sector Partnership, the second tech sector partnership in the state of Colorado.

