



# Stillwater company's products really are out of this world



BIO MATTERS

**STILLWATER** — Deep in the heart of a test laboratory at Stillwater's Frontier Electronic Systems sits an imposing piece of equipment that looks as if it could have played a role on a space voyage.

In fact, it has. The large steel vessel, with doors that seal, is called a thermal vacuum chamber. It is used by engineers to test critical equipment designed, and built by Frontier before it is fitted into place on NASA's International Space Station.

"This is kind of our crown jewel," said Jim Lee, Frontier's director of manufacturing as he led me on a tour recently of the company's 86,000-square-foot headquarters in Stillwater.

"This allows us to simulate a lower orbit environment for items we build for space programs," Lee said.

How did the design, manufacture and testing of high-tech equipment used in space exploration come to be located on the plains of Oklahoma?

Brenda Rolls provided the answer. Rolls is president and CEO of Frontier Electronic Systems, which was founded as Frontier Engineering in 1973 by her parents, Ed and Peggy Shreve.

Frontier is a high-tech aerospace engineering company that produces avionics, maritime radar and video distribution systems, space flight hardware, automated test systems, and components for defensive weapons systems. Clients include the U.S. Navy and prime contractors such as Boeing, Lockheed Martin and Northrop Grumman, Rolls said.

The company employs 115 people in Stillwater, including 53 engineers with projected revenue of \$28 million this year.

The Stillwater location provides an advantage to Frontier as it pursues



Frontier Electronics Systems CEO Brenda Rolls discusses some of the specialized equipment her company uses to develop, test and manufacture nanotechnology. (PHOTO PROVIDED)



Jim Lee demonstrates an instrument used in Frontier Electronic System's manufacturing and testing processes.

aerospace contracts, Rolls said. The geography works because it's near the center of the country.

"We have a very strong work ethic here in this part of the country, and Oklahoma is a very business friendly state," Rolls said. "And we have the benefit of Oklahoma State University being nearby. That's a great recruiting tool for us."

Funding support for R&D from the Oklahoma Center for the Advancement of Science and Technology has helped, too, she said. "The people we have worked with at OCAST are just incredible in their commitment to actually helping businesses."

Frontier has been recognized as Boeing Supplier of the Year four times. Rolls is quick to laud Frontier's employees for the accomplishments.

"We're the kind of company that flies under

the radar because we can't publicize too much of what we do," Rolls said. "So, our people don't get a lot of accolades. But they are the best of the best!"

Ed Shreve, who died in 2015, was a Ph.D. electrical engineering professor at OSU when he and Peggy founded the company. Peggy Shreve, then the CEO, was named Minority Entrepreneur of the Year in 1984 by President Ronald Reagan.

After reorganization in 1997, the name was changed to Frontier Electronic Systems.

Brenda Rolls returned to Oklahoma after the reorganization and assumed her current leadership role in 2008, with her husband, Mark, working by her side.

Nanotechnology has become new frontier for the company, which is working with University of Tulsa professor

Dale Teeters to develop a lightweight, long-lasting nano-battery that can be used in a new medical device.

As Lee and the Rolles guided me on the tour of the company's manufacturing floor and testing labs, the high-tech, high-stakes mission of its operations was on full display.

"We want our customers to know that they can rely on our products to meet every specification," Brenda Rolls said. "Our end users are people in space, people in the war field, flying airplanes. It's pretty serious."

As we stepped off the manufacturing floor, Brenda Rolls told me about a recent visit by Boeing officials who brought along an astronaut as a guest.

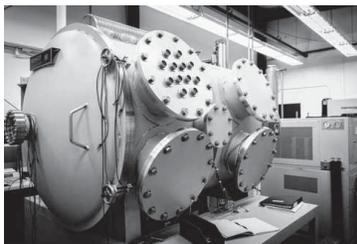
"We are sending hardware into space, and we have customers coming and saying, 'You guys are great at what you do,'" Brenda Rolls said. "And there is an astronaut coming, saying 'We are thankful for companies like you, because when we are up there in space, we need to know the equipment works. We want to come home to our families!'"

"It was really touching for me."

Jim Stafford writes about Oklahoma innovation and research and development topics on behalf of the Oklahoma Center for the Advancement of Science & Technology.



Wire assemblies for an aviation project are being constructed.



A thermal vacuum chamber is part of Frontier Electronic Systems' testing equipment used to ensure that the products will function properly in outer space.

Jan 20  
2016  
Page C002  
Clip resized 33%