

## Local firm proves why San Antonio is becoming a national cybersecurity hub

**HOUSTON, August 26, 2019** – Fred and Roxanne Ramirez do not fit the stereotype for tech entrepreneurs or cyberwarriors: they trace their roots to the Rio Grande Valley, not to Silicon Valley.

Graduates of Texas A&I University and in middle age, neither wears a hoody to work. But when the Department of Defense needs help developing the latest tools to defeat enemies in the virtual world, it calls on their business, CNF Technology.

The Ramirezes' story is a metaphor for how and why San Antonio has become a national cybersecurity hub. CNF's success is a model that others could and will follow.



Roxanne and Fred met at Texas A&I, now called Texas A&M University-Kingsville. Both had grown up in South Texas but wanted to move to a bigger city. After fielding job offers in Houston and Dallas, they decided in 1981 that Fred should take a civilian engineering job with the U.S. Air Force in San Antonio.

Fred's first job as an electrical engineer was developing automated test systems for the F-16 fighter jet. Five years later the Air Force promoted him to work on securing military information equipment from electronic eavesdropping, a program code-named Tempest.

Tempest was the precursor to cyberwarfare. In the most basic terms, intelligence personnel were trying to intercept messages written on electric typewriters, for example, by recording the electromagnetic impulses triggered by tapping on the keys. Fred's job was to prevent the enemy from gaining that intelligence.

I was in the U.S. Army intercepting and analyzing Soviet signals while Fred was on the Air Force's Security Hill in San Antonio. I used Tempest-tested equipment and witnessed how within a decade, communications shifted from Morse code and IBM Selectric typewriters to encrypted digital signals and high-speed computers.

From his post, Fred witnessed the birth of cyberwarfare. He started tracking computer viruses in 1990, and a team he developed later became the U.S. Air Force Computer Emergency Response Team. In 2000, Fred left the Air Force to become a government contractor.

Fred started CNF Technologies in 2005 to provide cybersecurity services to the military, and in 2008 Roxanne retired from her job as a public-school teacher to run the business.

“He says: ‘You can be the receptionist and help me with Quickbooks and do all the financial side of things.’ I had absolutely no idea,” Roxanne said. “I learned everything from answering the phones to working all the way to the top.”



Today, Roxanne is CEO and Fred is CFO, helping with recruiting and ensuring the company meets the strict security requirements for their government contracts. Demand for cybersecurity services is constantly growing, and the Ramirezes recently cut the ribbon on a new building that expands their top secret workspace by 12,000 square feet at the Port of San Antonio.

Smart devices are what keep CNF’s more than 100 employees busy. Whenever a piece of equipment gains a computer chip, it usually joins a computer network. Keeping hackers and spies out of the network and equipment is CNF’s specialty.

“We recently got a contract with the Air Force research lab that allows us to look at the very early stages of applied research and see the things that are possible 20 years from now,” Fred said. “We’re able to get a leg up on where the technology’s heading, and what are we doing to mitigate any vulnerabilities.”

CNF’s arc mirrors San Antonio’s. The city’s tech industry was born from regional talent trained at regional universities and businesses grown out of the military bases that have long underpinned the local economy.

As the home to a major National Security Agency post and the headquarters of the Air Force's intelligence, surveillance and reconnaissance units, these Department of Defense components are constantly looking for contractors to help fulfill their cyber-related missions.

Unfortunately, the Ramirezes face the same problem finding skilled workers as every other employer in Texas, but they are doing something about it. CNF offers paid internships and funds a scholarship at the University of Texas at San Antonio.

They also support programs like Cyber Patriots, which introduces high school students to the industry. As a former teacher, Roxanne wants kids to understand the dangers and her business.



“It does start in middle school and even elementary school, but they only think they know technology,” she said. “They don't know the other side of it. How can that get you in trouble? That's where the cyber comes in, and they need to be educated in that world.”

Cybersecurity security sadly presents an endless business opportunity, something the Ramirezes understand better than most.



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Chris Tomlinson has written commentary on business, energy and economics for the Houston Chronicle since 2014. Before joining the Chronicle, he spent 20 years with The Associated Press reporting on politics, conflicts and economics from more than 30 countries in Africa, the Middle East and Europe. He's also the author of the New York Times bestseller Tomlinson Hill, and he produced the award-winning documentary film by the same name. Both examine the history and consequences of race, politics and economics in Texas.