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## Spider-Man idea would stop cars fleeing police

*Engineer's proposal wins \$100,000 grant*

**Max Jarman**

The Arizona Republic

Feb. 23, 2006 12:00 AM

At 44, Martín Martínez has helped build more durable computer chips, stronger baseball bats and higher performance golf clubs.

Now the first-generation American is working on ways to disable vehicles fleeing from law enforcement without injuring the occupants or the agents in pursuit.

The market for such a device could be vast, encompassing the military, local law-enforcement agencies and the U.S. Border Patrol.

Martínez's vision for the product is one of Spider-Man spraying sticky web material onto the underside of a moving vehicle.

"It all gets wrapped up in the moving parts and immobilizes it," Martínez explained.

It's an acknowledged "crazy idea" that has gotten the attention of the U.S. Department of Homeland Security.

In December the department's Advanced Research Projects Agency awarded Martínez a \$100,000, Small Business Innovation Research Grant to do a feasibility study on his idea.



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Martín Martínez's company, Engineering Science Analysis Corp., has received a \$100,000 federal grant to pursue his "crazy idea."

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### Martín Martínez

**Born:** Tucson.

**Age:** 44.

**Education:** Bachelor's degree in engineering, University of Arizona.

**Position:** President,

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The agency funds out-of-the-box research into products and ideas at small companies that could make America safer.

Martinez has six months to prove that his product works. If he can do that, he and his company, Engineering Science Analysis Corp., could be in line for a \$750,000 grant to develop a prototype of the product.

Although Martinez's company has a long history of helping other companies develop their products, the vehicle disabler would be the first product of its own.

That means Martinez, an "engineer at heart," is having to act more like an entrepreneur. He has taken marketing classes and enrolled in the Technopolis program, which helps entrepreneurs turn technological ideas into commercial products.

He also is working with a senior engineering class at Arizona State University that is helping write a plan to commercialize the product.

Martinez formed Engineering Science Analysis Corp. in 1991 to accommodate some moonlighting he was doing at Intel Corp.

During the day he worked as a mechanical engineer at Allied-Signal Inc. and at night he was helping Intel solve a problem with stress cracking in the casings of their semiconductors.

"It was my hobby," Martinez said of the computerized stress-testing business he was building on the side.

But when he wound up on the street in 2000, his hobby became his full-time job. He had moved from Allied Signal to computer-chip tester Cerprobe Corp. and was laid off when the tech bubble eventually burst.

His options were to look for another job or to try to make his sideline business a full-time proposition.

"I started calling on all my contacts and eventually got a guy I worked with at Allied Signal to give me a P.O. (purchase order) for \$100,000 worth of product-analysis work," he said.

He ran the business out of his Phoenix home and slowly got more contracts.

"I just bootstrapped the business up one job at a time," he said.

Today the business has seven full-time employees and has contracts with some of the Valley's largest high-tech companies.

Engineering Science Analysis Corp. uses computer software to determine how substances and

Engineering Science Analysis Corp.

**Headquarters:** Tempe.

**Business:** Computerized structural analysis.

**Founded:** 1991.

**Employees:** Seven.

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products react to different stresses and pressures. Then it recommends design solutions to overcome any design flaws.

"It's virtual product development," he said.

For example, the company helped the Louisville Slugger Co. develop softball and baseball bats that were less likely to break or inflict the hitter with painful vibrations.

The company also has performed similar work on golf clubs to enlarge the "sweet spot" to pull the most performance out of the club.

The company was even able to design a club that made a specific sound when hit properly.

Martinez grew up in Tucson, the son of Mexican immigrants. His father worked in the copper mine at San Manuel but wanted a better life for his children.

"He kept pushing education," Martinez said. His father helped him get a scholarship from the mining company to attend the University of Arizona.

"I was the first member of my family to go to a university," he said.

A summer job at the mine convinced him that his father was right. After completing his degree in mechanical engineering, Martinez moved to the Valley and went to work for Garrett Pneumatics, which became part of Allied Signal.

"It was fantastic," he said. "There were so many things to work on there that we all got a broad education in a whole bunch of areas."

He got interested in remote ways to disable vehicles when he saw the Homeland Security Advanced Research Projects Agency's request for proposals on the subject. He brainstormed ideas with friends and eventually the idea for sticky weblike tendrils began to gel.

"It was a wild and crazy idea that they really went for," said Sharon Ballard, a coach at ASU's Technopolis program who helped Martinez with his grant application.