

Thursday, May 21, 2009

THE WALL STREET JOURNAL. U.S.

GET 2 WEEKS  
**FREE**  
SUBSCRIBE NOW!

▶ THE PRINT JOURNAL

▶ THE ONLINE JOURNAL

U.S. Edition ▾ Today's Paper ▾ Video ▾ Columns ▾ Blogs ▾ Topics ▾ Journal Community

Log In ▾ Register for FREE ▾

Home World U.S. Business Markets Tech Personal Finance Life &amp; Style Opinion Careers Real Estate Small Business

Politics Washington Wire Capital Journal The Obama Budget Stimulus Package Journal Reports Columns &amp; Blogs

TOP STORIES IN  
U.S.1 of 10  
FBI Arrests Four in  
Bomb, Missile Plot2 of 10  
Obama Defends  
Move to Close  
Gitmo3 of 10  
Industries Grapple  
With Climate Bill

PAGE ONE | MAY 21, 2009

# In the Spirit of Spider-Man, the Border Patrol Casts Its Web

*Homeland Security Tries Gizmos Like 'the Squid' to Ensnare Bad Guys*

Article

Video

Comments (4)

more in US »



Email

Printer  
Friendly

Share:

Yahoo Buzz

Save This



- Text +

By STEPHANIE SIMON

With drug-related violence on the rise in Mexico, there has been a lot of talk lately about putting more boots on the ground at the border.

Anh Duong has different advice: Try Squid.

Ms. Duong directs a small unit in the Department of Homeland Security charged with adding a little whiz-bang wonder to the drudgery of desert patrols and vehicle checkpoints.

Her engineers scour the nation to find crazy-yet-promising concepts -- like the Safe Quick Undercarriage Immobilization Device, or Squid -- then team up with private entrepreneurs to turn them into working prototypes. They're not ashamed to admit that they draw inspiration from comic-book superheroes and science-fiction novels as they dream up the gizmos and gadgets they hope will keep bad guys at bay.



The Squid is designed to stop a car by using 'tentacles' to foul its drive train.

in Tempe, Ariz., so he hardly expected his riff on Spider-Man's web to get serious attention from Homeland Security. But as it happened, the government had just put out a call for ideas on stopping "uncooperative vehicles...using nonlethal methods." Mr. Martínez sent in his sketches. Among 29 entries, the Squid stood out -- and Mr. Martínez found himself with \$850,000 in grant money, a team of federal advisers and a chance to bring his invention to life.

The Squid, a lightweight disc about the size of a manhole cover, lies on the road and ejects rubbery tentacles on command to ensnare fleeing vehicles and drag them to a stop.

Martín Martínez came up with the idea one evening in late 2005, over beers. Several beers. "Light up a nice El Rey del Mundo cigar, start pouring Guinness, and you can get pretty creative," he explains. He had been watching a car chase on TV, thinking, "I could find a way to stop that guy." He still has the napkin with his squid scrawls.

Mr. Martínez, who is 48 years old, runs a small engineering shop, Engineering Science Analysis Corp., from his home



In the latest round of battle against drug smugglers, the Department of Homeland Security is deploying high-tech gadgets straight out of a comic book. WSJ's John Jurgensen reports. Watch this video and more on [www.esacorp.com](http://www.esacorp.com) under "SQUID Technologies".

years, she developed explosives for the Navy, culminating in a thermobaric bomb that can hit bunkers and deep caves. Along the way, she raised four children with a no-violence policy so strict she fast-forwarded over the fight scenes in Disney's "Pocahontas."

The first prototype dragged a pickup going 35 miles per hour to a stop in about 30 feet. Mr. Martínez says he hasn't been able to test the device at getaway speeds because he's now short of both money and volunteers willing to run into the tentacles at 120 mph. So he's focused on redesigning the disc to look more like a speed bump. He says it will be ready next year. Ms. Duong can't wait.

"All you have to do is spend a day with our agents on the border...and see how these guys sweat, and you want to come up with the latest and greatest tools for them," she says.

Ms. Duong, 49, once dreamed of writing poetry. She says she cried for days when her father insisted she take up chemical engineering. But it proved a good fit. For 25

Continued ▾

**Sprint**

Check out the call quality in your area. ▶

Sprint has been awarded "Highest Call Quality Performance Among Wireless Cell Phone Users in the West Region in a Tie" by J.D. Power and Associates.

\*Source

THE WALL STREET JOURNAL

STAY CONNECTED 24/7 VIA EMAIL NEWSLETTERS & ALERTS FROM WSJ.COM

FREE Registration

Sign up Today

## People Who Viewed This Also Viewed...

On WSJ.com

In My Network

[UAW Fades as It Shrinks in Size, Power](#)[Sexual-Harassment Cases Plague U.N.](#)[FBI Arrests Four in Bomb, Missile Plot](#)[World Economies Plummet](#)[The Stanley Cup Could Use an Editor](#)

## Video ▶

**Congress Against Obama's Request to Close Gitmo**  
1:56**FBI Thwarts Terror Plot in New York**  
1:33**An India-Pakistan Alliance?**  
1:28

## More in US

[FBI Arrests Four in Bomb, Missile Plot](#)[A Battle Over Benefits for Gay Spouses](#)[Using Spidey Sense on the Border](#)[Obama to Address Gitmo-Closing Issues](#)[UAW Fades as It Shrinks in Size, Power](#)

Last summer, Ms. Duong took charge of the Borders and Maritime Security Division within Homeland Security's Science and Technology Directorate. She has a staff of 30 and a budget that President Barack Obama has proposed increasing by 20% next year, to \$40 million.

A few projects are decidedly low-tech. Take the plan to flood the border with a particular breed of wasp with a taste for Carrizo cane, a massive weed that grows in dense stands along the Rio Grande, providing cover to smugglers. Ms. Duong's scientists, working with the Department of Agriculture, tracked down the wasps in Spain and have spent two years watching the critters in a secure greenhouse -- gauging their appetites, assessing their role in a swampy ecosystem and finally breeding them into a swarm suitable for deployment on the Texas border. The first invasion is set for this summer, near Laredo.

Other projects in the works: giant nets, dropped from helicopters to trap speedboat smugglers. Electromagnetic sensors fitted into airborne drones to sniff out illegal tunnels. Shipping crates that send Mayday signals to federal agents if they're diverted from their intended destination, perhaps by smugglers or terrorists.

Some of these concepts will never make it past the lab. A plan to fry the electronics of fleeing cars with microwave beams generated excitement among Ms. Duong's team -- until someone pointed out the beams might fry nearby pacemakers, too.



ANH DUONG

"If we inadvertently cause someone to have a heart attack, that's a showstopper right there," Ms. Duong says, a tinge of regret in her voice.

Another disappointment: a new generation of sensors to detect motion, sound and vibration. They didn't work well in the snow and ice on the northern border.

They did fine in the Southwestern desert, however, so scientists there began sprinkling the sensor grid with alfalfa and rabbit chow to lure animals and record their movements. Eventually, they hope to program the sensors to distinguish between a deer and a drug smuggler.

The aggressive push for new technologies unnerves some law-enforcement veterans.

Don Reay, executive director of the Texas Border Sheriff's Coalition, still remembers a contraption he was persuaded to try years ago to stop speeding cars. It involved embedding steel posts under key roads. The posts were supposed to pop up at the press of a button, blocking a getaway. But the timing was often off. On occasion, the posts hit the undercarriage of a passing car. "We paid tort claims on that," Mr. Reay says. His first question about any razzle-dazzle device? "What kind of liability are we going to face?"

Also skeptical: T.J. Bonner, president of the union representing 16,500 Border Patrol agents. While technology can help, "in the final analysis," he says, "it's people who catch people."

Which is where the "puke ray" might come in handy.

Officially, it's a Light Emitting Diode Incapacitator, or LEDI, and no, it doesn't always make its targets vomit. But it does disorient them -- and can cause nausea -- with a strobe light that flashes in a pattern and spectrum the brain simply cannot process.

"It's extremely uncomfortable," says Bob Lieberman, president of Intelligent Optical Systems Inc., the Torrance, Calif., firm that developed the device with grants and advice from Homeland Security.

Resembling a large flashlight, the LEDI works, night or day, at a range of up to 25 feet and is designed to make a belligerent suspect close his eyes just long enough for authorities to get the advantage. It will be field-tested this year by the Los Angeles County Sheriff's Department.

The puke ray and other gizmos-in-development are on display this week at a Homeland Security technology conference in Washington. Science-fiction author Greg Bear is hosting the event. On Monday, he and other writers led a workshop: "Science Fiction in the National Interest."

Ms. Duong says she counts on the futurists to help her team imagine the impossible.

As for Mr. Bear, he draws unexpected inspiration from the feds. He has been to these conferences with Homeland Security before and has seen devices that would work perfectly in his science fiction. "It turns out, the engineers are just as crazy as we are," Mr. Bear says. He plans to take notes.

Write to Stephanie Simon at [stephanie.simon@wsj.com](mailto:stephanie.simon@wsj.com)

Printed in The Wall Street Journal, page A1

## Editors' Picks



Forgotten Market Online:  
Older Women



Mow Power, Less Gas



Share Where You Are  
When You Want



Tatum's Art Changed  
Jazz



Buffalo's Wright Stuff

THE WALL STREET JOURNAL