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csu has hand in new tornado radar

New twister-detection radar developed by CSU electrical engineer may help people in path

By Bruce Finley
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New tornado-detection radar could give people in the path of a twister an extra 10 minutes of warning and could reduce the National Weather Service's false-alarm rate.

The system, developed by Colorado State University electrical engineer V. "Chandra" Chandrasekar, will get its first urban test this summer in Dallas-Fort Worth.

"It's a civil-defense infrastructure over the whole city," Chandrasekar said. "It's like an umbrella."

The white-domed radar units mounted atop cellphone towers are designed to operate in clusters of six to 10 and increase the average 12-minute lead time by sending images every minute. The system improves resolution by five to 10 times, enabling closer scrutiny of approaching storms that may

spawn tornadoes. It also scans closer to ground level, where tornadoes often form.

Today, many tornadoes never register on radar

because they form below radar beams and because current radar typically sends images only every 5 minutes.

In the U.S., tornadoes cause about 80 deaths and 1,500 injuries a year.

Dallas-area officials expect to pay \$1.5 million to \$5 million over five years for a phased installation, said Molly Thoerner, director of emergency preparedness for the North Central Texas Regional Council of Governments.

"Hopefully, this will help us become more prepared and take preparedness more seriously. People would have more confidence in the information they're getting," she said. "Ten minutes could mean life or death."

Chandrasekar and University of Massachusetts Amherst resource economist Brenda Philips developed the system and tested it over five years in McClain County, Okla.

It is one of several efforts to improve the National Weather Service's false-alarm rate, currently about 70 percent in tornado forecasting.

The Boulder-based Center for Severe Weather Research is analyzing vast data collected last



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summer, when dozens of scientists and technicians roamed the prairie in an armored, radar-equipped armada studying 25 storms that produced tornadoes and 25 that did not.

Scientists suspect last-minute wind surges may play a key role in the creation of tornadoes. They are also looking at the role of temperatures, said center director Josh Wurman.

Even with better radar, it will be difficult to guarantee sufficient early warning, said Dan Lindsey, a National Oceanic and Atmospheric Administration researcher who studied climate conditions around the tornado that ripped through Windsor on May 22, 2008.

Storms must form before tornadoes can be spotted. Those storms speed toward communities as fast as 80 mph, and those that do and don't produce tornadoes can be nearly indistinguishable, Lindsey said.

"It's not just early warning that is going to save lives," he said. "There's a lot to do educating people to take cover, to heed the warnings when they hear the warnings. There are some people who hear the warning and just do nothing."

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