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CSU honors inventor of tornado radar with Award for Innovative Excellence

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A CSU engineering professor whose research is helping to revolutionize weather radar has been honored with the Award for Innovative Excellence by CSU Ventures.

CSU Ventures, which handles technology transfer for Colorado State, on Wednesday honored V. "Chandra" Chandrasekar, a professor of electrical and computer engineering, for his work to create a series of small radars that could revolutionize the way meteorologists detect storms.

"Professor Chandra is a dedicated faculty member whose work in the area of weather prediction and emergency preparedness is already making a difference with emergency services personnel," said Todd Headley, president of CSU Ventures. "We are proud to honor him for his innovation."

Photo by Dan Bihn

CSU Ventures unveils new marketing strategy

CSU Ventures also Wednesday unveiled a new look and brand to build on its success as a support system for university researchers who are transferring inventions into the marketplace. Branding efforts include the creation of a new logo, website and social media pages.

Previously, the University's technology transfer and commercialization functions operated under CSU Research Foundation or CSURF, a not-for-profit affiliate of CSU. CSU Ventures - a wholly owned subsidiary of CSURF - is a private, non-profit advocacy arm of the university whose mission is to actively support and promote the transfer of CSU research and innovations into the marketplace to benefit society.

Much of Chandra's innovation has come from his work as a key player in the National Science Foundation Engineering Research Center for Collaborative Adaptive Sensing of the Atmosphere, or CASA – an Engineering Research Center, that is developing a network of radar systems for deployment across the country. He is the leader of the sensing thrust of the project and also the deputy director for CASA. He is the co-Principal Investigator for the CSU-CHILL National Radar facility as well as a member of remote sensing research team in NASA.

Radar to be tested in Dallas-Fort Worth

The first radar network testbed created from the CASA partnership, called CASA IP-1 radars, were tested for severe weather detection in Oklahoma's "tornado alley," which experiences about 22 tornadoes a year. The CASA IP-1 system was designed by researchers, faculty and students from CSU, the University of Massachusetts at Amherst, the University of Oklahoma and the University of Puerto Rico at Mayagez. The low-power radar is highly reliable, inexpensive, adaptive and operates collaboratively in a system of similar radars, which has been shown to detect tornadoes earlier than the current state-of-the-art systems.

This year, the team will concentrate its efforts in the Dallas-Fort Worth region – the first time it will be tested in a major metropolitan area.

In 2008, Chandra taught a nationwide audience of broadcast meteorologists a course on dual polarization radars that were developed at CSU. Dual-polarization radar is the latest technology to be used by forecasters to warn the public about developing severe weather and was adopted in 2009 as the new National Weather Service standard.

Dual-polarization works by transmitting and receiving electromagnetic waves at both horizontal and vertical polarization. This technique allows better discrimination of particle shapes, which means more accurate information can be gathered on rain and hail, snowflakes and other particles in clouds.

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