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By David Horowitz (https://bgdailynews.com/author/davidhorowitz/)

A Louisville-based firm on the forefront of weather surveillance technology is set to bolster the Earth, Environmental, and Atmospheric Sciences Department at Western Kentucky University, the company and WKU announced Monday.

The firm, Climavision, is granting WKU students access to its technology as well as expertise from researchers. They'll work collaboratively to identify where research would be impactful in the area around Bowling Green as well as other areas, said Climavision Co-Founder and CEO Chris Goode.

And, first and foremost, the collaboration will bring to the students Climavision's data from its cutting-edge X band radars, which Climavision is using to fill gaps in the U.S.'s radars nationwide, Goode said. The firm has spent most of $100 million in funds to roll out a national radar network that complements the U.S.'s network of roughly 160 government radars; Climavision deploys X-band radars, imports that data into its numerical weather models — which are fed weather observations and output the forecasts — and then sells that data to customers, said department professor Jerald Brotzge.

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"They're an important company in the weather community," said Brotzge. "They're the only company that's deploying an X-band radar network nationwide and improving forecasts from that data …

For students at WKU, it's a new opportunity for learning about the private sector in meteorology, and it's an opportunity to learn about a new technology being used and applied."

Climavision has deployed 29 of these smaller radars so far, and its network when complete will be about 180 radars across the country; they have about 10 times the spatial resolution of the government radars, allowing more details to be seen in storms.

"Students often kind of get caught in this theoretical world, and what this allows now is for real-time laboratory experience with real data from new radar systems that are being deployed," Goode said. "The students can look and see the impact that they're having in different times of the year when coupled with the existing observations that we have."

One gap, in Kentucky, is associated with the I-75 corridor from Cincinnati down to the Kentucky-Tennessee border, Goode said. So, Climavision has deployed two — one in Dry Ridge, and one in Jamestown — to fill in the blindspots and are used by emergency managers in those areas, making it possible to see what hasn't been observed through the traditional government network, Goode said.

In the recent Somerset tornado, for example, Climavision's radars picked up the tornadic signature 13 minutes ahead of the government radar, Goode said.

These radars also utilize dual polarization, a feature that can determine the shape of precipitation and whether it's debris, Brotzge said. For example, Goode said, they can determine whether something is a snowflake, ice crystal, hail, rain or something not naturally found in the atmosphere.

"Kentucky's always had and continues to have a wide variety of high-impact weather and that includes severe storms, tornadoes and floods, and new observations as provided by Climavision can help keep Kentucky safer and more resilient," Brotzge said.

Goode added that there's been an increasing frequency of storms that impact populations living in the coverage gap along the I-75 corridor. Research, he added, is showing that what's known as tornado alley has started to shift to the east — with tornadoes more frequently occurring throughout Mississippi, Alabama, Tennessee and Kentucky.

"It's all about lead time from a public safety standpoint," Goode said. "The more time people have to prepare, the more time that they have to mitigate the negative impacts. We can't stop bad weather from happening, but if we can observe it sooner and predict it sooner, then that's what this is really all about."

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