As Fire Seasons Stretch Longer And Hotter, A University Of Nebraska–Lincoln Start-Up Is Using Drones To Fight Fire With Fire

University of Nebraska-Lincoln

Drone Amplified is headed by Carrick Detweiler, University of Nebraska-Lincoln associate professor of computer science and engineering. The company's drone-mounted technology carries chemical spheres the size of ping pong balls. At the press of a button, the spheres drop and ignite — intentionally sparking small fires that burn vegetation and starve incoming wildfires of potential fuel.

"Our product fills a niche in the market between a helicopter, which is expensive, and hand lighting, where people have to walk or take a four-wheeler," said Jim Higgins, chief engineer and Nebraska alumnus. "It allows crews to ignite large, complex burns without the danger factor."

> *At the 2018 Klondike fire in Oregon, the team helped firefighters use the drone system as part of their daily operations. They have also trained employees from federal government agencies,*

> *who have used the system to fight fires across the United States; one of these agencies, the U.S. Department of Interior, named the technology a 'Top 12 Made in America" invention.*

Today, the team is focused on scaling its business to reach more customers — especially due to recent fatalities involving firefighting helicopters, which is driving an urgency to find safer replacements, says Higgins. The team has sold several dozen systems to companies in the US, as well as internationally.

According to CEO Detweiler, the team's business success has benefitted from local investment by organizations including Invest Nebraska, Nebraska Angels and Nelnet, as well as grant awards from the Nebraska Department of Economic Development and the Small Business Innovation Research program.

The team has also worked with NUtech Ventures, the university's commercialization affiliate, to patent and license the technology for their start-up company.

"NUtech was really supportive throughout the process," Detweiler said. "They helped us lay out the milestones and what we need to be thinking about in the future."

While Drone Amplified's product represents a distinctly different way to fight fires, the team foresees drones becoming a standard tool, as normal as picking up a firehose or calling in a bulldozer. It's a vision they're working to fulfill.

"I think we're right at the leading edge of this wave of using unmanned systems in firefighting," Detweiler said. "We want to save the lives of people doing very dangerous jobs."

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