News from NSF AgTech Engine in North Dakota

Spring 2025 Newsletter

Whitewater Project Rippling Along

Whitewater, an innovative project developing field sensors equipped with satellite technology, has officially moved from the design phase to field testing as of mid-May. The project aims to deliver precise, targeted irrigation insights to farmers. Currently, three farmers in the Oakes, ND area and Grand Farm have had sensors installed in their seeded corn fields. Each sensor covers up to 60 acres and monitors subsurface soil moisture and root water uptake. Unlike traditional methods, Whitewater uses AI to analyze moisture levels below the surface, helping farmers optimize irrigation schedules. This technology should not only boost on-

farm efficiency and reduce operational costs but also contribute to broader water conservation efforts across the region.

FARMS Engine Rebrands to NSF AgTech Engine in North Dakota

We're excited to announce the rebranding of the FARMS Engine to the NSF AgTech Engine in North Dakota—a change that reflects our growing impact and alignment with national innovation priorities. This new name underscores our commitment to advancing agricultural technologies through cutting-edge research, and rural workforce and economic development, all backed by support from the National Science Foundation. As the NSF AgTech Engine, we will continue to serve as a hub for innovation in the region, bringing together producers, startups, researchers, and communities to build a more resilient and sustainable agricultural future. Stay tuned for new opportunities, partnerships, and initiatives under our new identity!

The North Dakota Water Education Foundation's 2025 Water tours begin June 18. The third tour in the series of five is Innovative Irrigation in Oakes on Tuesday, July 15. This session will focus on the role of irrigation in North Dakota agriculture. This tour will include a test site presentation about Whitewater, a project of the NSF AgTech Engine in North Dakota, which utilizes satellite sensors and AI models to measure moisture in the soil profile. The NSF AgTech Engine in North Dakota is a proud sponsor of the 2025 North Dakota Water Education Water Tours.

Learn More & Register Here

Carrington Engages with Workforce Team

In its active engagement with the Workforce Team of NSF Ag Tech Engine in North Dakota, the City of Carrington highlights its robust agricultural ecosystem, a strength that aligns with the community's progressive approach to local business and commitment to a wholesome lifestyle, rich cultural history, and environmental preservation. Community leaders point to a successful high school agriculture education program with a long track record, the local NDSU Research Extension Center, and thriving value-added agriculture enterprises like Dakota Growers Pasta and VanBedaf Dairy/Cows and Co Creamery as significant assets.

"Our strong agricultural foundation, from education to successful businesses, positions Carrington as a valuable partner for the Ag Tech Engine," stated Joel Lemer, Community Leader and Carrington School Board President.
The community's renowned high school agriculture program provides a consistent stream of talent, while the NDSU Research Extension Center offers crucial local research capabilities. Furthermore, the success of Dakota Growers Pasta and Cows and Co Creamery demonstrates Carrington's capacity for agricultural innovation and economic growth.

The Career Builders work-study program, connecting students with companies like Leading Edge Equipment, further strengthens the local agricultural workforce.
Carrington aims to leverage these strengths to contribute to the Ag Tech Engine's goals of advancing agricultural technology and fostering economic development in North Dakota. Community leaders are eager to explore collaborative opportunities and potential community workforce projects.

AgTech Week 2025 in Fargo

AgTech Week 2025 was held June 9-13 in Fargo. This year the NSF AgTech Engine in North Dakota hosted its first solo event, Field Forward, on June 10. This event brought together farmers, ranchers, rural economic development

professionals, innovators, and NSF AGTech Engine Beta Project Teams. The WorkForce Development Team presented recommendations developed from the Community WorkForce Presentations held across the eight Economic Development Regions in North Dakota in 2024 and early 2025. Attendees participated in three facilitated discussions regarding innovation adaption, community-led research and development, and opportunities for small scale agriculture production. The discussion was facilitated by Dr. Eric Raile from Montana State University. The NSF AgTech Engine in North Dakota was also a sponsor of the Cultivate Conference 2025.

NSF AgTech Engine in North Dakota and North Dakota University System Exploring AgTech Dual Credits

An innovative collaborative approach to expand dual credit opportunities in agricultural technology (Ag Tech) is being explored. The concept emerged during the recent NDUS Annual Agriculture Articulation meeting, a key forum where agriculture faculty from across the NDUS system convene to enhance the transferability of agricultural coursework between institutions.

During the meeting, Brooke Thiel, Assistant Professor of Agricultural Education, NDSU and Carmel Miller, Workforce Coordinator, NDSU Extension representing the NSF Ag Tech Engine for ND Workforce Team, initiated discussions regarding a collaboratively offered dual credit course in Ag Tech. The proposed model would involve higher education institutions within the NDUS system working together to develop a standardized curriculum. Furthermore, the initiative envisions training a select cohort of qualified high school Agriculture Education instructors to deliver the course to high school students.

This potential collaboration holds significant promise for introducing high school students to the rapidly evolving field of agricultural technology while providing them with valuable college credit. By leveraging the collective expertise within the NDUS and empowering high school educators, this potential initiative aims to build a stronger pipeline of skilled professionals for North Dakota's vital agricultural sector.
Further discussions and planning for this potential dual credit Ag Tech course are anticipated in the coming months.

Dr. Hollie Mackey on The Discovery Files

Dr. Hollie Mackey, NSF AgTech Engine in North Dakota CEO, discussed AgTech innovation on the National Science Foundation's *The Discovery Files* podcast.

Listen to the Full Interview

US Secretary of Agriculture Rollins Visits Grand Farm

Grand Farm has remained focused on grower-informed innovation, strategic collaboration, and technology validation as part of its role in the NSF AgTech Engine in North Dakota.

In April, Grand Farm had the honor of showcasing U.S. Secretary of Agriculture Brooke Rollins at the Innovation Campus. The visit brought growers, innovators, policymakers, and industry leaders together for meaningful dialogue and demonstrations centered around innovation.

This Summer the Innovation Campus will serve as a testing ground for 28 field trials in partnership with 18 companies and startups from across the country. These projects will help evaluate a range of technologies, validating innovative solutions ranging from autonomous equipment to soil health monitoring. The Sensor Sandbox, Grand Farm's IoT testing environment, is also returning

and doubling in capacity, providing a robust network for real-time data and environmental monitoring.

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