



NSF Convergence Accelerator's 2022 Cohort Phase 1 Award

Project Title

Precision Agriculture for a Resilient Vegetable Supply Amidst Climate Change (Precision Ag4Veggie)

Awardee

Virginia Tech Applied Research Corporation

Award/Contract

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Award Contract Type

R&D

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NSF Funded Program

NSF's Convergence Accelerator

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Track J: Food & Nutrition Security

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PROJECT ABSTRACT

The U.S. vegetable production system, essential in supporting the nutritional needs of all Americans and much of the world, is in jeopardy due to climate change-induced drought and other severe weather events. There is an urgent need to address climate-induced shifts in vegetable production yield and capacity by accelerating technical, workforce, and economic efficiencies for vegetable producers in the U.S.

The Precision Ag4Veggie team led by the Virginia Tech Applied Research Corporation (VT-ARC) will converge (1) education and workforce training, (2) precision agricultural practices and technologies, (3) artificial intelligence/machine learning-based analysis strategies, and (4) economically driven production and sustainability decision making into a cohesive program seeking to increase vegetable production capacity in the face of climate change throughout the U.S. The Precision Ag4Veggie team is composed of researchers and thought leaders from academia, industry, government, and non-profits with expertise in precision agriculture, environmental science, artificial intelligence, data analytics, cyber biosecurity, community education and engagement, economic development, and policy to collectively build capacity and economic security for underserved, rural small-to-moderate-sized vegetable producers.

Through the National Science Foundation's Convergence Accelerator, the Precision Ag4Veggie team seeks to increase vegetable production capacity throughout the U.S. by developing climate-smart, technologically, and economically efficient, and environmentally sustainable precision agricultural practices that enable more effective and adaptive decision making, as part of our nation's agricultural priorities.

This team will deliver sensor platforms, predictive analytic applications, and training programs that achieve broader impacts such as adaptable and transferrable precision agriculture, adopt-into-practice strategies for other agricultural sectors (e.g., fruit production), cyber biosecurity awareness and training, AgTech venture creation, and workforce development for underrepresented and underserved rural populations.