

THE FUTURE OF FARMING

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How Federally-Funded Fundamental Research Is Planting The Seeds For Innovation In Agriculture

November 2018

The Great Plains Irrigation Experiment, funded by NSF, examined irrigation's effect on climate conditions to inform future agricultural planning.

Soilborne diseases pose a major threat to potatoes. USDA-funded research aims to preserve soil health and sustain American potato production.

USDA-funded research will protect grapes from fast-adapting fungi that can resist traditional pest-specific controls.

> DOE-funded research will advance disease resistance in corn's cousin, sorghum, to support crop health.

> > Phosphorus from fertilizer can negatively impact surface water, groundwater, and air quality. Thanks to USDA-funded research, we might soon prevent these impacts.

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SCIENCE MATTERS

To learn more about how federally-funded fundamental research improves lives, visit **www.sciencecoalition.org**.



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UNIVERSITY OF NEBRASKA



The Great Plains Irrigation Experiment at the University of Nebraska-Lincoln—funded by the National Science Foundation (NSF)—will help Americans better understand how irrigation affects climate conditions and will inform future agricultural planning and weather forecasting.

WASHINGTON STATE UNIVERSITY



With support from the U.S. Department of Agriculture's (USDA) National Institute of Food and Agriculture (NIFA) Specialty Crop Research Initiative, researchers at Washington State University will seek to improve how we detect and predict how harmful fungi develop resistance to traditional pest-specific controls. Based on the results, these findings could be applied to all specialty crops—from apples and cherries to hops and potatoes—and prevent damage from fungi.

UNIVERSITY OF ILLINOIS



Corn is an American staple, but research into its cousin—sorghum might hold the key to more stable crops in the future. At the University of Illinois, researchers are investigating how genes in sorghum confer resistance to harmful fungi. This research, funded by the U.S. Department of Energy (DOE), could lead to greater stability and yields in both crops.

UNIVERSITY OF MINNESOTA

The USDA's NIFA Specialty Crop Research Initiative funded research to better understand the complex factors affecting soil health and potato soilborne diseases, a major threat to the crop. Led by investigators at the University of Minnesota, this research will enhance environmental quality and sustain the economic production of potato operations in the U.S.

AUBURN UNIVERSITY, UNIVERSITY OF WISCONSIN-MADISON, AND THE UNIVERSITY OF CALIFORNIA, RIVERSIDE



RIVERSIDE

Researchers at Auburn University, the University of Wisconsin-Madison, and the University of California, Riverside are investigating how to prevent poultry and dairy waste—and the phosphorus they contain—from negatively impacting surface water, groundwater, and air quality, thanks to funding from the USDA's NIFA Agriculture and Food Research Initiative.

