

# IOWA STATE UNIVERSITY

## College of Agriculture and Life Sciences

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### **Iowa State Wins \$20 million Grant to Research Impacts of Climate on Corn-based Cropping Systems**

AMES, Iowa – The U.S. Department of Agriculture's National Institute of Food and Agriculture (USDA-NIFA) has awarded a \$20 million grant to Iowa State University for regional research on keeping Midwest cornfields resilient in the face of future climate uncertainties.

Iowa State researchers will coordinate a team of 42 scientists from ten land-grant universities and two USDA Agricultural Research Service institutions in nine states in the north central region. The team will collect and analyze data over the next five years. The region produces 8 billion bushels of corn, which is 64 percent of the annual harvest in the United States.

"This project is an excellent example of how Iowa State provides leadership on a critical issue in collaboration with partners at other institutions," said Iowa State University's President Gregory Geoffroy. "This grant will allow researchers from many disciplines to work together, share data and review results that will help shape how we think about sustainable cropping systems."

Lois Wright Morton, Iowa State professor of sociology, interim director of the Leopold Center for Sustainable Agriculture and project director said, "The grant takes a synergistic approach to understanding the effects of climate variability and impacts on the sustainability of corn-based cropping systems throughout the Midwest."

Researchers will begin collecting data on carbon, nitrogen and water movement this spring from 21 research sites in eight states. Special equipment will be used to monitor greenhouse gas emissions at many of the sites. The team will integrate field and climate data to create models and evaluate crop management practices.

"The goal is to create a database of plot, field, farm and watershed data that can be combined with climate data to develop scenarios based on different practices," Morton said. "Then, farmers in the region will have opportunities to participate in on-farm research and evaluate research models. The project will also offer training for teachers and the next generation of scientists to better understand the relationships among climate shifts and agriculture."

Joe Colletti, associate dean of Iowa State's College of Agriculture and Life Sciences, said the project's multilevel approach will help researchers, educators, producers and industry identify and define corn-based cropping systems that are productive and resilient in the face of weather uncertainties and risks.

"This type of transdisciplinary research enables us to integrate and coordinate research, extension and education," Colletti said. "As we gather data for future weather and cropping models, we'll also be talking to producers and asking if the results are economically viable, socially acceptable and environmentally sensible."

The USDA-NIFA program is focused on decreasing greenhouse gas emissions and increasing carbon sequestration. The long-term national outcome is to reduce the use of energy, nitrogen and water by 10 percent and increase carbon sequestration by 15 percent through resilient agriculture and forest production systems.

The grant is part of the USDA-NIFA Coordinated Agricultural Program. This project's researchers include agronomists, agricultural engineers, environmental scientists, hydrologists, soil scientists, sociologists, watershed engineers and natural resource scientists.

The Iowa State grant is one of three grants to be awarded nationally. The grant awards were announced in Washington D.C. on Feb. 18.

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