Science Societies

Working together to drive agricultural scientific innovation

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June 25, 2021


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USDA-NIFA's $8.65 million investment in 22 plant-breeding research projects range from exploring CRISPR gene editing on winter wheat to facilitating partnerships to research plant breeding for peppers, sorghum, avocados, and other crops. Photo by Joseph Iboyi.

It's an exciting time at the USDA National Institute of Food and Agriculture (NIFA). Our innovative workforce of scientists and professionals are hard at work creating opportunities to bring together agricultural scientists from across the nation to form a scientific powerhouse that defines NIFA and our partners—all of you—as world leaders in agricultural scientific innovation.

Farming for Tomorrow

When I last spoke to ASA, CSSA, and SSSA, I mentioned that agriculture is the foundation of our society, no matter where we live. I believe that has been true, and I believe it will continue to be true. And crucial to ensuring that our foundation stays strong is the continual support and effort in research.

One recent example that relates directly to your work is a $8.65 million investment in 22 plant-breeding research projects. These projects, funded through the Agriculture and Food Research Initiative, range from exploring CRISPR gene editing on winter wheat to facilitating partnerships to research plant breeding for peppers, sorghum, avocados, and other crops.

Another example is our recent announcement of a $15.5 million investment in cyberinfomatics tools to boost agricultural production. It's no secret that big data and artificial intelligence (AI) are here to stay and lead the way in the future of agriculture.

We need to make these technologies work for, and be accessible to, researchers, farmers, and consumers.

Through these funds, our partners will work on a variety of projects, including researching AI-based solutions for decision-support tools and improved production systems; establishing platforms and networks for wireless research and sharing information; and leveraging machine learning for better measurement and mapping tools.

In addition, last year, NIFA partnered with the National Science Foundation to invest $140 million in seven new AI institutes. Two of those institutes are focused on revolutionizing food systems and improving resilience. If we can continue to harness these tools for American farmers, we can lay the foundation for the farm of the future.

Inclusive Innovation

One of USDA's top priorities is to commit ourselves to equity and inclusion. We want to ensure that all of our programs are equitable and accessible to all Americans. Without equal representation and ensuring that all voices and concerns are heard and represented, how can we be the best we can be? How many scientific solutions have been missed or passed up simply because a person or a community wasn't given a voice?

"It's my mission to make NIFA as inclusive as possible. We're currently working hard to

ensure racial equity and root out discrimination within our agency and throughout the USDA."

It's my hope that partners like you will be involved and keep us honest, constantly pushing us to be better and more welcoming. By being more inclusive, our innovations will better serve all, not just some.

Combatting Climate Change

Fighting against climate change is something close to my heart and home. In my home state of Louisiana, climate change is already altering our coasts and marshlands, threatening our fisheries. In coming decades, increasing temperatures, changes in rainfall, and increased chances of drought may fundamentally alter agriculture in the Mississippi Delta.

We support climate change science through a whole-of-NIFA approach—investing in research, education, outreach, and innovation across the spectrum of our grant programs to attack this problem from all angles. We want to ensure the innovations we develop with our partners are good for producers as well as the climate.

Secretary Vilsack sees opportunities for American farmers and landowners to lead the way on climate change. Considering that, we recently announced $21.7 million in key programs to help producers manage the impacts of climate change on their lands while improving soil health. Our "Signals in the Soil" and "Soil Health" grants will enable researchers to observe how the changing climate is interacting with farm and soil

systems and develop long-term solutions.

It is crucial to me that we continue to strengthen partnerships among USDA agencies, land grant universities, research institutions, marginalized communities, and professional societies like yours.

"I believe together we will be the leaders in agricultural science innovation for American farmers and researchers—with a positive impact felt around the world."

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