Science Societies

USDA Agriculture Innovation Agenda targets the solutions of tomorrow

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Editor's note: This month, Science Policy News and Federal Corner team up for a joint column. Learn more about how ASA, CSSA, and SSSA are responding to the Agriculture Innovation Agenda Request for Information and how you can submit your comments at **www.agronomy.org/science-policy/issues/ag-innovation**.

American agriculture has been successful in clothing, feeding, and fueling the world, and agricultural research has played an important part in this process by providing innovative technologies from both the public and private sectors that have significantly increased ag productivity over time. But this is no time to rest on our laurels! There are many challenges ahead, including increased demand from a growing world population and sustained productivity of natural resources required to support agricultural activities.

To help meet these future demands, Secretary Perdue has challenged the USDA to stimulate innovation so that American agriculture can achieve the shared goal of increasing U.S. agricultural production by 40% while cutting its environmental footprint in half by 2050. The USDA Agriculture Innovation Agenda was developed to help meet these objectives and represents USDA's commitment to the continued success of American farmers, ranchers, producers, and foresters. The program aligns USDA's resources, public-facing programs, and research to provide farmers with the tools they need to be successful in the future.

Seeking Your Input

As part of this effort, we are seeking input from the public on the greatest opportunities, challenges, and key innovative technologies that are needed over the next 10 to 30 years to significantly increase ag productivity and reduce our environmental footprint. To help guide our planning, we leveraged a 2019 study from the National Academies of Sciences, Engineering, and Medicine entitled *Science Breakthroughs to Advance Food and Agricultural Research by 2030*, from which we derived four innovation clusters that present broad potential for transformative innovation. These clusters are:

- *Genome Design*—Use of genomics and precision breeding to explore, control, and improve traits of agriculturally important organisms.
- *Digital/Automation*—Deployment of precise, accurate, and field-based sensors to collect information in real time to visualize changing conditions and respond automatically with interventions that reduce risk of losses and maximize productivity.
- *Prescriptive Intervention*—Application and integration of data sciences, software tools, and systems models to enable advanced analytics for managing the food and agricultural system.
- *Systems-Based Farm Management*—Leverage a systems approach to understand the nature of interactions among different elements of the food and agricultural system to increase overall efficiency, resilience, and sustainability of farm enterprises.

We would first like you to consider the biggest opportunities and challenges you see for increasing ag productivity and/or decreasing the environmental footprint over the next 10 to 30 years. The idea is to DREAM BIG and think beyond the one- to five-year time frame. Once these opportunity statements are identified, the idea is to view each opportunity statement through the lens of the innovation cluster and imagine the kinds of solutions that might be developed in each area. We also want to know about any federal barriers to achieving your opportunity statement and promoting technology adoption. This information can be provided in the Request for Information recently published in the *Federal Register* (**https://bit.ly/3dyDyrW**).

By working together and bringing as many people to the table as possible, we aim to identify common themes and technologies that emerge to help inform research and innovation efforts in the Department, the broader public sector, and the private sector. Every voice counts, and we strongly encourage you to participate!

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