



Research Roadmap

Update and Path Ahead

George Smith
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agInnovation Initiative

10-Year Research Roadmap

Foundational Focal Areas (Pillars)

Bold and Specific Outcome Goals

Risks of Not Taking Action

Federal Investment Strategy

Stakeholder Input

Implementation



agInnovation Research Roadmap Journey

agInnovation Roadmap Working Group Formed; Facilitator hired

Fall/Winter 2023

Collect, Analyze, and Incorporate Internal and External Stakeholder Input

Summer - Winter 2024

Spring 2024

Working Group Meetings

- In-Person Working Group Session in Chicago
- Multiple ZOOM Discussions

Identified: Vision, Roadmap Pillar topic areas, Outcome Goals, Research Opportunity examples, and Risks of Not Taking Action

Began discussion: Federal Budget Strategy and Roadmap implementation

January 2025

Complete Stakeholder-Informed Research Roadmap, including Budget Strategy and Implementation Plan
Implement Roadmap

Research Roadmap Working Group

*BLC Members

Sreekala Bajwa
Anton Bekkerman
Vernon Jones
Gary Pierzynski
Scott Senseman

**STC Members

George Criner
Shibu Jose
Gene Kelly
Nathan Slaton
John Yang

Facilitator: Ms. K.J. McCorry



Other agInnovation and Partner Members

Rich Bonanno
Robert Burns
Christina Hamilton
Bret Hess
Steve Lommel
Linda Nagel
Rick Rhodes
Carrie Schumacher
George Smith
Doug Steele
Alton Thompson
Gary Thompson
Jeanette Thurston

*BLC = Budget and Legislative Committee

**STC = Science and Technology Committee

Water Resilience Outcome Goals

- Increase water use efficiency by 50% across food and agriculture systems (i.e., production and processing).
- Enhance the health and U.S. Environmental Protection Agency compliance of our rivers, lakes, streams, and coastal waters by reducing water quality impairment within agricultural watersheds by 40%.
- Enhance agricultural system resilience by reducing agricultural production losses to waterlogging, flooding, and drought by 50%.



Climate Solutions

Outcome Goals

- Enhance yield stability and improve soil health through increased soil carbon sequestration and moisture content, reducing the carbon footprint of agriculture by 40%.
- Improve nitrogen fertilizer use efficiency, minimize nutrient runoff, and enhance recycling while reducing costs of production for farmers and related greenhouse gas emissions by 35%.
- Foster new forestry land management, land cover, and harvesting approaches that promote healthy forests resistant to fire and extreme weather events, and aid in the uptake of carbon dioxide emissions equivalent to 30% annually.
- Improve adoption of climate-smart practices and enhance resilience of agriculture, rangeland, and forest ecosystems, optimizing production amid higher rates of extreme weather conditions and events. Doing so can help reduce annual federal crop insurance payments by 25%, or \$3.5 billion annually.



Sustainable Food Systems

Outcome Goals

- Achieve national and food security by producing 95% of our food domestically, increasing local and regional farm net incomes by 20%, and reducing food waste by 50%.
- Bolster supply chain resilience of food systems by strengthening local and regional markets to meet between 15% to 25% of the local demand, while reducing the carbon footprint of food transportation by 25%.
- Reduce food insecurity and decrease diet-related diseases by 40% in all communities.
- Safeguard the food supply through the prevention of foodborne contaminants, plant and animal disease outbreaks, and pests during food production, processing, transportation and retail.



Cross-Cutting Outcome Goal

Annually train an additional 20,000 students in food, agriculture, and renewable natural resources, addressing the growing demand for a skilled workforce in these sectors. Students will be recruited with diverse backgrounds and experiences reflective of the U.S. population.



Risk of Not Taking Action

- **Food system failures** and disruptions from global conflicts, pandemics, economic downturns, and climate change threaten national security, causing food supply interruptions, food spoilage, food insecurity, foodborne and chronic diseases, environmental degradation, economic instability, and mass migration.
- **Declining water availability** for drinking and home use in rural and urban communities, as well as for agricultural production. **Declining water quality** will negatively impact wildlife, recreation, and public health.
- Agriculture is already impacted by **variable and extreme weather**, leading to wildfires and water-caused crop failures. If not addressed, this will worsen, reducing crop yields, harming livestock, forests, and fisheries, and degrading water, air, and soil quality.



Federal Investment Strategy

Federal R&D Budget = Fiscal Year (FY) 2023: \$193 billion

*Increase of 1% Federal Research and
Development (R&D) Budget*

- \$1.9 billion increase annually
- \$19 billion increase over 10 years
- **Total Annual Funding Request*** (current funding and 1% Federal R&D increase) = **\$3.67 billion or 1.9%** of the total annual federal R&D budget (based on FY2023)

**To support capacity and competitive programs at USDA and other federal agencies*



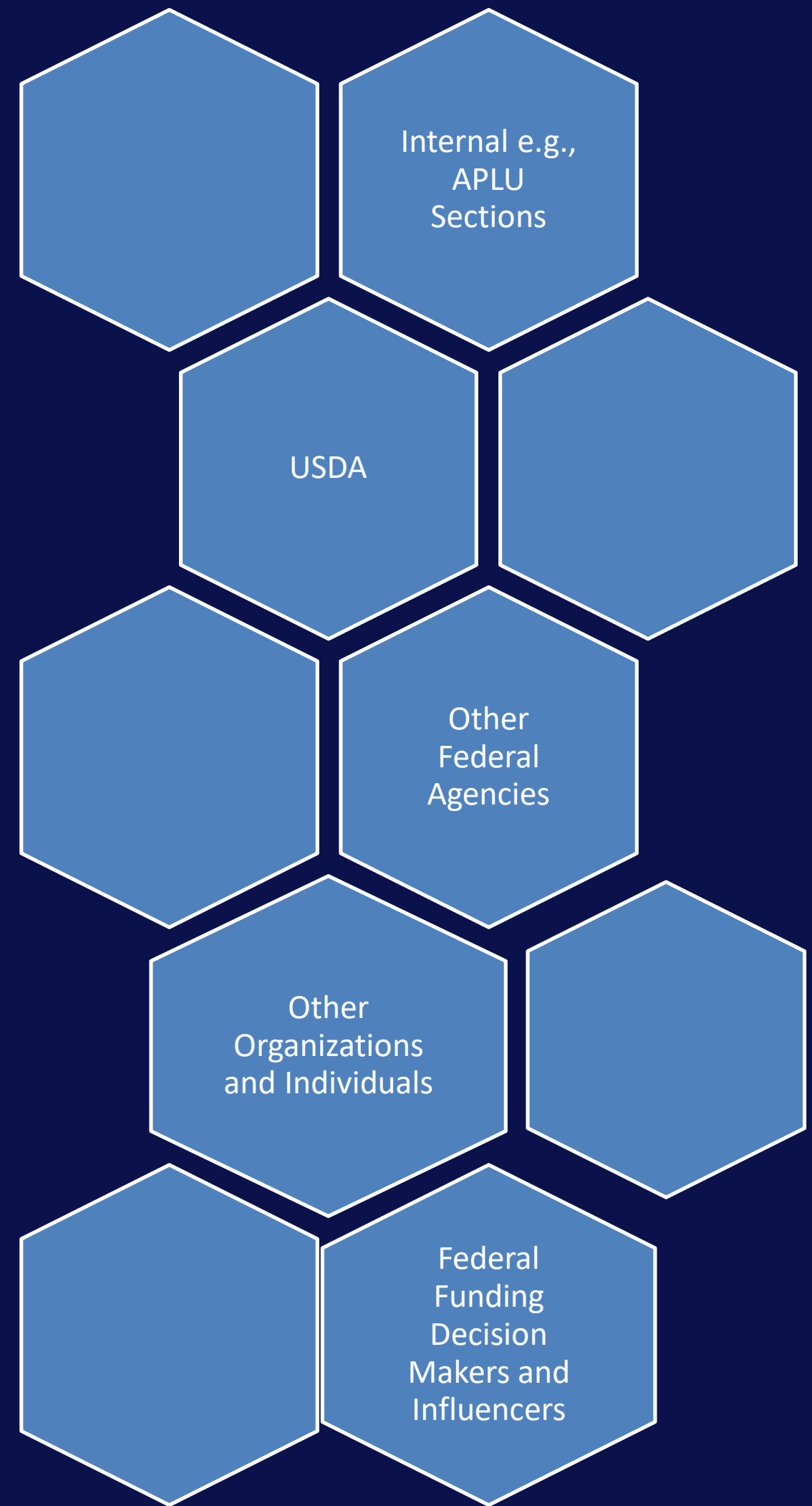
STAKEHOLDER INPUT

Numerous in-person and ZOOM meetings over the summer, fall and winter months

Upcoming Events:

Ag Media Summit (August)

NCFAR Lunch-n-Learn on Capitol Hill (September)





STANDING COMMITTEES

BUDGET AND LEGISLATIVE COMMITTEE

SCIENCE AND TECHNOLOGY COMMITTEE

**Communications*

IMPLEMENTATION STRATEGY



QUESTIONS?

*We are seeking your input!
The DRAFT Research Roadmap Pillar areas and
Executive Summary will be shared by email after
the BAA Summer Leadership Meeting.*

*Please provide written input to
smithge7@msu.edu and Jthurston@ksu.edu*



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THANK YOU