agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

Spring Business Meeting

March 5, 2025

Steve Lommel
agInnovation Chair

Time	Item #	Topic	Presenter
2:00	1.0	**Chair's Welcome**	Steve Lommel
2:05	2.0	**agInnovation Research Roadmap**	Steve Lommel
	2.2	Reflections on the process	George Smith
	2.3	Revised Roadmap Pillars	Steve Lommel
	2.4	Discussion	Membership
2:35	3.0	**Integrated LGU Roadmap**	Steve Lommel
	3.1	Power of a Unified Message to Congress	Elizabeth Stulberg
	3.2	Extension Roadmap	Vonda Richardson
	3.3	Academic Programs	Claus Tittiger
	3.4	Next steps: Governance Committee Communications consultant Stakeholder roundtables	Steve Lommel
	3.5	Discussion	Membership
3:15	4.0	**Roadmap Implementation**	
	4.1	STC – Implementation activities	Nathan Slaton
	4.2	BLC – Implementation activities	Gary Pierzynski
3:30	5.0	**Other Business**	
	5.1	DCC Discussion	Nina Lyon-Bennett
	5.2	agInnovation Rules of Operation - vote	Rick Rhodes
4:00		**Adjourn**	

agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

agInnovation Research Roadmap

Steve Lommel
agInnovation Chair

agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

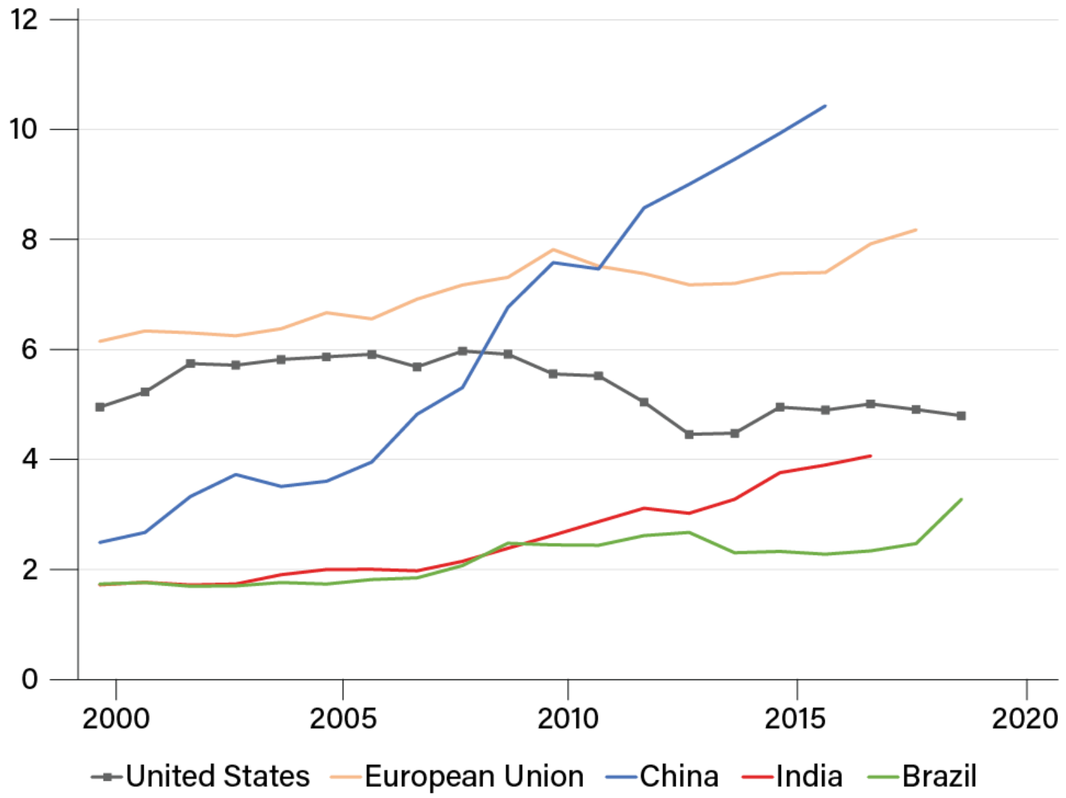
Reflections on the Process

George Smith
agInnovation Past-Chair

Critical National Priority: Addressing Societal Challenges through R&D Investment

The United States has been losing ground to other countries in public agricultural research and development (R&D) investment

Inflation-adjusted 2015 U.S. dollars, billions



Notes: R&D spending is presented in constant 2015 purchasing-power-parity (PPP) dollars by first deflating by national Gross Domestic Product (GDP) price indexes and then converting into dollars using the 2015 PPP exchange rate, allowing for comparisons over time and across countries.

Source: USDA, Economic Research Service (ERS) using data from the ERS data product Agricultural Research Funding in the Public and Private Sectors (U.S. expenditures); ERS Economic Research Report 249, Agricultural Research Investment and Policy Reform in High Income Countries (European Union expenditures); International Food Policy Research Institute's Agricultural Science and Technology Indicators (expenditures for China, India, and Brazil); and the World Bank's World Development Indicators (GDP price indexes and PPP exchange rates).

Research Roadmap Working Group

Facilitator: Ms. K.J. McCorry

BLC Members

Sreekala Bajwa
Anton Bekkerman
Vernon Jones
Gary Pierzynski
Scott Senseman

STC Members

George Criner
Shibu Jose
Gene Kelly
Nathan Slaton
John Yang

BLC = Budget and Legislative Committee
STC = Science and Technology Committee

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

agInnovation Research Roadmap Journey

Fall/Winter 2023

agInnovation Roadmap Working Group Formed; Facilitator hired

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

Summer - Winter 2024

Collect, Analyze, and Incorporate Internal and External Stakeholder Input

Quarter 1 2025

Complete Stakeholder-Informed Research Roadmap

Present the Roadmap to Members

Working Group Representation

agInnovation (1862, 1890, 1994), Board on Natural Resources, Extension, FANR

agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

10-Year Research Roadmap

Foundational Focal Areas (Pillars)

Bold and Specific Outcome Goals

Risks of Inaction

Stakeholder Input

Water Resilience

Overview:

Safe and readily available water is critical to agricultural production, public health, and our en
water resiliency is needed to advance agricultural resilience and conservation efforts to secure
of water sources for agriculture, communities, and the environment. Research is also needed to
technologies that ensure water resiliency and conservation amid a changing climate with more
matic events, such as floods and droughts.

Outcome Goals and Impacts:

- 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, groundwater, 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%.
- ***Cross-cutting outcome:*** 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.

Funding

To achieve our
and address oth
in the U.S., it's
additional $1.
federal research
universities ove
annual increas
1% of the total
develop

Research Opportunities:

- Develop and deploy an effective multi-year strategy that prioritizes water monitoring and data collection, innovative practices and technologies, and policy interventions that improves agricultural water use efficiency, flood tolerance and mitigation, water reuse, crop and livestock productivity, profitability, and climate change resiliency.
- Develop water-efficient and flood- and drought-resistant crops.
- Develop and implement AI-driven irrigation systems.
- Develop best management practices for water conservation, reuse, and quality.

Risk of Not Taking Action:

- Less water will be available for drinking and home use in rural and urban communities, as
production. Water levels in streams and lakes will further decline and negatively impact w
- Increased withdrawal of groundwater will exacerbate land subsidence that damages comm
roads, bridges, water wells, buildings, levees), leading to a heavy financial burden on com
protection, and the decreased capacity of aquifers to store water.
- The quality of water used for drinking, irrigation and recreation will significantly decline,
health consequences.

Draft — Not for Distribution

Sustainable Food Systems

Overview:

Agricultural research is crucial for safeguarding both food and national security in the U.S. It delivers tr
innovations that ensure a sustainable and resilient food system across the country that's economically vi
and environmentally sound. Resiliency requires diversity of production, processing, and distribution scal
for supply chains across all agriculture and food sectors. Research is essential for a sustainable and resili
to meet the needs of current and future generations.

Outcome Goals and Impacts:

- 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%.
- Increase the nutritional value of foods and safeguard 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:*** 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.

Funding Requi

To achieve our sustaina
tems goals and address
challenges in the U.S.
to allocate an additiona
annually in federal resea
land-grant universities
decade. This annual inc
alent to just 1% of the
research and developr

Research Opportunities:

- Identify ways to repurpose agricultural byproducts and extend shelf life to minimize waste and enhance food security.
- Increase access to affordable, nutritious, and safe food, and develop science-based approaches to help individuals adopt healthier lifestyles.
- Conduct cost-benefit analyses, life-cycle analyses, environmental impact evaluations, and social cost-benefit analyses to track improvement of local and regional food system sustainability.
- Develop new surveillance tools and approaches for early detection of pests and diseases across the food chain.
- Develop diverse crops and livestock genetics that increase nutritional value and resistance to diseases and pests, including deploying new biotechnologies, information technologies, and other innovations that take advantage of new and changing environments.

Risk of Not Taking Action:

- Food system failures and disruptions caused by global conflicts, pandemics, economic downturns, g
turmoil, and climate change will significantly threaten national security and lead to increased food s
interruptions, food spoilage and waste, food insecurity and hunger, diet-related chronic and foodborn
environmental degradation, economic instability, and mass migration of people across the globe.

Draft — Not for Distribution

Climate Solutions

Overview:

As a global leader in agricultural production, the United States must enhance the resilience of our agriculture and natural resources to withstand increasingly variable weather conditions and extreme weather events. This requires moving beyond traditional efficiency metrics. It is essential to prioritize productivity that regenerates soil, sustains water resources, and enhances biodiversity and community resilience. Embracing climate-smart practices, soil health principles, and advanced technologies will protect our natural resources and propel U.S. agriculture forward, thereby improving resilience and national food security.

Outcome Goals and Impacts:

- Improve yield stability and soil health through increased soil carbon sequestration, higher soil moisture content, and a 40% reduction in agriculture's carbon footprint.
- 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 resilient to fire and extreme weather events, and aid in the uptake of 30% of economy-wide carbon dioxide emissions annually.
- Improve adoption of climate-smart practices and enhance resilience of agriculture, rangeland, and forest ecosystems, optimizing production amid variable, changing weather conditions and extreme weather events. Doing so can help reduce annual federal crop insurance payments by 25%, or $3.5 billion annually.
- ***Cross-cutting outcome:*** 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.

Research Opportunities:

- Identify climate-smart practices that improve nitrogen use efficiency, soil fertility, structure, and resilience, enhancing our understanding of soil composition and processes.
- Reduce barriers to collaboration among farmers, communities, researchers, and policymakers to drive adoption of grassroots innovations for climate adaptation and resilience.
- Develop accurate metrics for quantifying greenhouse gas emissions, carbon sequestration, water usage, and biodiversity. Integrate climate modeling and scenario simulations to enhance the resilience of agriculture and natural resource systems.
- Apply gene-editing techniques to produce climate resilient crops and animals (e.g., improved water use efficiency, drought tolerance, heat tolerance). Develop feeds that reduce methane emissions from livestock.

Funding Requirement:

To achieve our climate solutions goals and address other societal challenges in the U.S., it's critical to allocate an additional $1.9 billion annually in federal research funding to land-grant universities over the next decade. This annual increase is equivalent to just 1% of the total federal research and development budget.

Risk of Not Taking Action:

- From increased wildfires to water-caused crop failures, agriculture is already experiencing the impacts of variable, changing weather conditions and extreme weather events. If we fail to adapt, these challenges will exacerbate, leading to reduced crop yields and increased harm to livestock, forests, and fisheries. Biodiversity will suffer as resistant weeds, pests, diseases, and wildfires become more prevalent, disrupting ecosystems and agricultural productivity. The degradation of water, air, and soil quality will intensify and cause severe consequences for food security, human and animal health, and environmental sustainability. Immediate action is needed to safeguard agriculture systems and the health of our planet.

Draft — Not for Distribution

Stakeholder Engagement

- *Cooperative Extension Service*
- *Academic Programs Section*
- *International Programs Section*
- *CARET*

- *NRCS*
- *DOE*
- *NSF*
- *EPA*
- *Commerce*

- *FFAR*
- *NCFAR*
- *Platform for Ag & Climate Transformation*
- *International Fresh Produce Association*
- *Farm Journal Foundation*
- *Breakthrough Institute*
- *Nature Conservancy*
- *Bezos Earth Fund*

- *USDA NIFA*
- *USDA ARS*
- *USDA Off. Chief Scientist*
- *USDA Off. Chief Economist*

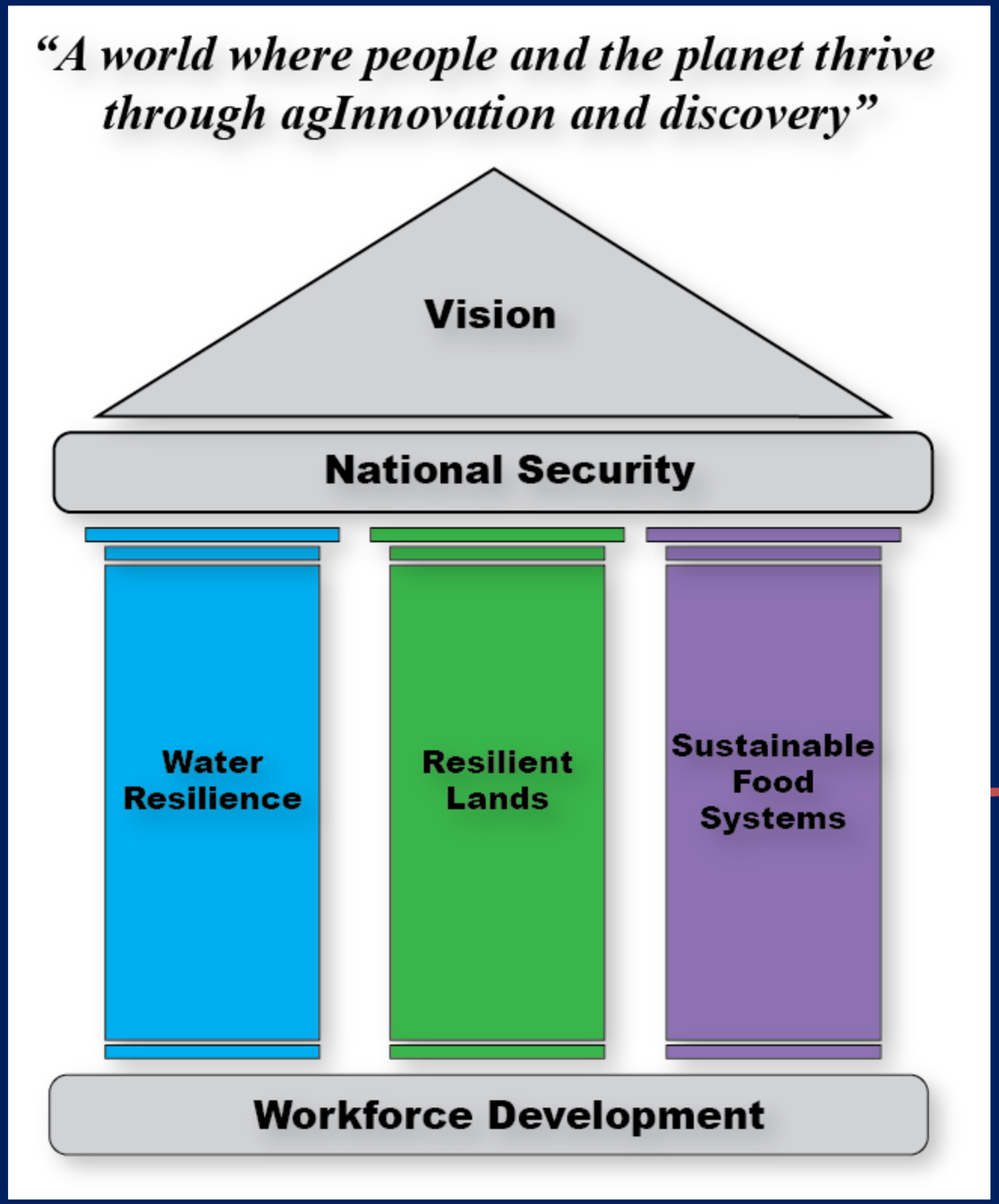
agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

agInnovation Roadmap

Phase 1 Complete

Steve Lommel



A 10 Year Platform for Catalyzing Solutions to Societal Challenges

2025-2035 agInnovation Roadmap

Executive Summary

A Critical Crossroads for the Nation

- U.S. faces an urgent crisis that threatens its agricultural leadership, food security, and economic stability

An Outcomes-Driven Roadmap for the Nation

- Bold stakeholder-informed goals that enhance national security through strategic Research, Extension, and Education

Role of Land-Grant Universities

- Uniquely equipped through the integrated mission of **research, education, and Extension**

National Imperative: Public Investments in Agricultural Research, Extension & Education

- The U.S. must act now to reinvest in food and agricultural innovation, ensuring a resilient and secure future for all

Sustainable Food Systems

Overview:

United States food and national security depend on transformative innovations driven and delivered by Land-grant University research and Extension to build a resilient and adaptable food system. By advancing diverse approaches in production and distribution across regions, food supply chains in all agricultural and food sectors are strengthened, reducing vulnerabilities. Delivering these innovations creates a food system that meets current needs while preparing for future challenges, is economically resilient, socially equitable, and environmentally sound, securing the nation's food supply for generations to come.

Outcome Goals and Impacts:

- Achieve national and local 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 by strengthening local and regional markets to meet 15% to 25% of local demand, reducing the carbon footprint of food transportation by 25%, and expanding the bioeconomy.
- Reduce food insecurity by cutting the number of U.S. households experiencing low food security by 50%.
- Decrease diet-related diseases by 40% in all communities.
- Safeguard the food supply with a 50% increase in agricultural biosecurity through the creation and adoption of tactics to prevent foodborne contaminants, minimize plant and animal disease outbreaks, and manage pests from production to consumption.

Crosscutting Educatio

Workforce Development: Annu
XX college students and XX 4-H
agriculture, and renewable natur
increasing demand for a skilled w
efforts will focus on engaging yo
from diverse backgrounds and ex

Funding Requirement:

America's future prosperity relie
Universities delivering groundbr
resilient, sustainable tomorrow. A
bold investments in USDA capac
funding and aligned federal prog

Opportunities:

- **Promote innovation** across the agricultural continuum and advance strategies for regionally focused agriculture.
- **Enhance sustainability** by conducting cost-benefit, life cycle, environmental impact, and social cost-benefit analyses to assess improvements in local, regional, national, and international food systems and implement the results.
- **Reduce waste** by repurposing agricultural byproducts, extending product shelf life, implementing sustainable packaging, and educating stakeholders to minimize waste from field to retailer, thereby enhancing food security.
- **Encourage healthier lifestyles** by promoting science-based solutions, increasing access to affordable, nutritious, and safe food, and expanding education to support individuals in adopting healthier habits.
- **Ensure food safety** by developing and adopting new surveillance tools and approaches for early detect pathogens across the food chain.
- **Improve crop and livestock genetics** to increase nutritional value and enhance resistance to pests and crops, fresh fruits, vegetables, and livestock, and train local producers on deploying new technologies t and changing environments.
- **Adapt to change** by developing and deploying technologies and innovations that address environmenta agricultural labor force.

Risks of Inaction:

Food system failures and disruptions threaten national security. Without increased investment, the U.S. risks developing and delivering resilient, sustainable, and efficient farm-to-table practices. This stagnation could l supply interruptions, food waste, food insecurity and hunger, foodborne diseases, economic instability, and costly imports. Ultimately, a lack of innovation jeopardizes national security, food security, global economic and the stability of rural communities.

Water Resilience

Overview:

Reliable access to safe water is fundamental to agriculture, public health, and environmental sustainability, se for food and national security. Land-grant Universities must lead efforts to build water resilience through rese Extension initiatives that boost productivity, enhance water efficiency, protect water quality, and promote con floods and droughts intensify, advancing innovative technologies and ensuring equitable access to water resou grant Universities are uniquely positioned to drive focused efforts that address these pressing challenges, secu diverse landscapes and generations to come.

Outcome Goals and Impacts:

- Increase water use efficiency by 50% across food and agricultural systems, including production and processing.
- Reduce water quality impairments—such as elevated nutrients, pathogens, bacteria, sediment, and pesticides—by 40% within agricultural watersheds to protect domestic water supplies and public health.
- Strengthen agricultural system resilience by reducing production losses from waterlogging, flooding, and drought by 50%.

Crosscutting Education

Workforce Development: Annual
XX college students and XX 4-H
agriculture, and renewable natural
increasing demand for a skilled wo
efforts will focus on engaging you
from diverse backgrounds and exp

Opportunities:

- **Create a multi-year strategy** that integrates innovative practices, Extension programs, and water monitoring to inform policy interventions aimed at improving agricultural water use efficiency and utilization of nontraditional water sources, resilience to floods and droughts, water quality, accessibility, and ecosystem services.
- **Promote water-efficient, flood- and drought-resilient agricultural systems** by advancing best practices, tools, and Extension programs for improving crop and livestock productivity and water conservation, reuse, and quality.
- **Collaborate with communities and public officials** to develop strategies addressing water accessibility challenges.

Funding Requirement:

America's future prosperity relies
Universities delivering groundbrea
resilient, sustainable tomorrow. Ac
bold investments in USDA capacit
funding and aligned federal progra

Risks of Inaction:

Reduced water availability will impact drinking water supplies and household use in both rural and urban communities, while also constraining agricultural production. Declining river water levels will reduce navigable waterways, disrupt tra shipping costs, and weaken farmers' competitiveness in global markets. Furthermore, lower water levels in st harm wildlife, recreation, and tourism, placing additional strain on local economies and ecosystems. Increase withdrawal will worsen land subsidence, damaging infrastructure such as roads, bridges, levees, and water we significant financial burdens, reduces flood protection, and diminishes aquifers' capacity to store water. Simul degradation of water quality for drinking, irrigation, and recreation will pose serious risks to public health.

Resilient Lands

Overview:

As a global leader in agricultural production, the United States must strengthen the resilience of its agriculture and natural resources to better withstand the growing challenges of variable weather and extreme events. This requires production practices that regenerate soil, conserve water, and support biodiversity and community resilience. By adopting soil health principles, innovative technologies, and climate-resilient practices driven and delivered by Land-grant University research and Extension, we can safeguard natural resources and advance U.S. agriculture, enhancing resilience and bolstering national food and nutrition security.

Outcome Goals and Impacts:

- Enhance yield stability, improve soil health, boost energy efficiency, and increase soil carbon sequestration, while integrating renewable energy—together driving a 40% reduction in agriculture's carbon footprint through innovation and best practices.
- Drive innovation in nitrogen fertilizer use efficiency, minimizing nutrient runoff reduction, and optimizing crop nitrogen utilization while supporting producers in adopting sustainable management practices that collectively lower production costs and reduce greenhouse gas emissions by 35%.
- Foster new forestry land management, land cover, and harvesting approaches that promote healthy forests resilient to fire and extreme weather events, while increasing by 20% annually the number of forest owners with management plans to support healthy forests capable of absorbing 30% of economy-wide carbon dioxide emissions each year.
- Improve the adoption of practices to enhance the resilience of agriculture, rangeland, and forest ecosystems by developing adaptive land management plans to optimize production amid variable and extreme weather, reducing federal crop insurance costs by 25% ($3.5 billion).
- Improve infrastructure and emergency planning to reduce the devastating financial impact of extreme weather events on communities.

Crosscutting Education Outcome Goal:

Workforce Development: Annually train an additional XX college students and XX 4-H members in food, agriculture, and renewable natural resources to meet the increasing demand for a skilled workforce. Recruitment efforts will focus on engaging youth and adult learners from diverse backgrounds and experiences.

Funding Requirement:

America's future prosperity relies on Land-grant Universities delivering groundbreaking discoveries for a resilient, sustainable tomorrow. Achieving this requires bold investments in USDA capacity and competitive funding and aligned federal programs.

Opportunities:

- **Identify innovative agronomic practices** that enhance nitrogen use efficiency, soil fertility, structure, and resilience, while deepening our understanding of soil composition and processes.
- **Reduce barriers to collaboration** among farmers, land managers, communities, researchers, and policymakers to increase engagement and accelerate the adoption of grassroots innovations for adaptation and resilience.
- **Develop infrastructure and response plans** to improve the resiliency of rural and urban communities.
- **Develop accurate metrics** to quantify greenhouse gas emissions, carbon sequestration, water usage, and biodiversity, integrating long-term weather modeling and scenario simulations to strengthen the resilience of agriculture and natural resource systems.
- **Apply gene-editing techniques** to create climate-resilient crops and livestock (e.g., improved water use efficiency, drought tolerance, heat tolerance), and develop feeds to reduce methane emissions from livestock.

Risks of Inaction:

From escalating wildfires to droughts and floods, agriculture and our communities are already grappling with the effects of variable weather and extreme events. Without adaptation, these challenges will intensify, resulting in lower crop yields and greater harm to livestock, forests, fisheries, and communities. Biodiversity will decline as resistant weeds, pests, diseases, and wildfires become more widespread, disrupting ecosystems and agricultural productivity. The degradation of water, air, and soil quality will worsen, leading to severe consequences for food security, human and animal health, and environmental sustainability.

Sustainable Food Systems

Outcome Goals

- Achieve national and local food security
  - **produce 95%** of our food domestically
  - **increase** local and regional farm net incomes **by 20%**
  - **reduce** food waste **by 50%**

- Bolster supply chain resilience of food systems
  - Local and regional markets meeting **15-25%** of local demand
  - **Reduce** carbon footprint of food transportation **by 25%**

- **Reduce** U.S. households experiencing low food insecurity **by 50%**
- **Decrease** diet-related diseases **by 40%** in all communities
- Safeguard the food supply with **50% increase** in ag biosecurity

Water Resilience

Outcome Goals

- **Increase** water use efficiency **by 50%** across food and agriculture systems
- **Reduce** water quality impairment within agricultural watersheds **by 40%**
- **Reduce** agricultural production losses to waterlogging, flooding, and drought **by 50%**

Resilient Lands

Outcome Goals

- **Reduce** the carbon footprint of agriculture **by 40%**

(yield stability, soil health, energy efficiency, carbon sequestration, renewable energy)

- **Reduce** nutrient costs of production for farmers and related greenhouse gas emissions **by 35%**
- Promote healthy forests to aid in the uptake of carbon dioxide emissions equivalent to **30% annually**
- Improve adoption of practices that enhance resilience to **reduce** annual federal crop insurance payments **by 25%,** or $3.5 billion annually
- Improve infrastructure and emergency planning to reduce the devastating financial impact of extreme weather events on communities

Cross-Cutting Outcome Goal

Annually ***train an additional 20,000+ students and four million+ 4-H members*** *in food, agriculture, and renewable natural resources, addressing the growing demand for a skilled workforce. Recruitment efforts will focus on engaging youth and adult learners from diverse backgrounds and experiences.*

Risks of Inaction

- ***Food system failures***
- ***Declining water availability*** **and** ***quality***
- ***Impacts of variable and extreme weather***

Resilient Lands and Water

Overview:

As a global leader in agricultural production, the United States must strengthen the resilience of its agriculture and natural resources to withstand the growing challenges of variable weather and extreme events. This requires practices that regenerate soil, conserve water, support biodiversity, and ensure community resilience. By adopting soil health principles, innovative water efficiency and quality practices, advanced technologies, and climate-resilient approaches—driven and delivered by Land-grant University research and Extension—we can safeguard natural resources, secure water supplies across diverse landscapes, and strengthen U.S. agriculture, enhancing resilience and bolstering national food and nutrition security.

Outcome Goals and Impacts:

- Enhance yield stability, improve soil health, boost energy efficiency, and increase soil carbon sequestration, while integrating renewable energy—together driving a 40% reduction in agriculture's carbon footprint.
- Drive innovation in nitrogen fertilizer use efficiency, minimizing nutrient runoff reduction, and optimizing crop nitrogen utilization while supporting producers in adopting sustainable management practices that collectively lower production costs and reduce greenhouse gas emissions by 35%.
- Increase water use efficiency by 50% across food and agricultural systems, including production and processing, and reduce water quality impairments by 40% to protect domestic water supplies and public health.
- Foster new forestry land management, land cover, and harvesting approaches that promote healthy forests resilient to fire and extreme weather events, while increasing by 20% annually the number of forest owners with management plans to support healthy forests.
- Improve the adoption of practices to enhance the resilience of agriculture, rangeland, and forest ecosystems by developing adaptive land management plans to optimize production amid variable and extreme weather, reducing losses from waterlogging, flooding, and drought by 50% and federal crop insurance costs by 25% ($3.5 billion).
- Improve infrastructure and emergency planning to reduce the devastating financial impact of extreme weather events on communities.

Crosscutting Education Outcome Goal:

Workforce Development: Annually train an additional XX college students and XX 4-H members in food, agriculture, and renewable natural resources to meet the increasing demand for a skilled workforce. Recruitment efforts will focus on engaging youth and adult learners from diverse backgrounds and experiences.

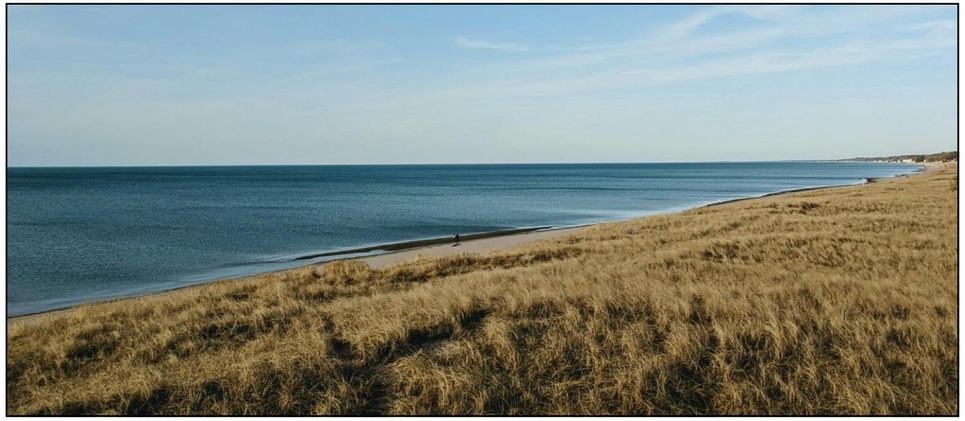
Funding Requirement:

America's future prosperity relies on Land-grant Universities delivering groundbreaking discoveries for a resilient, sustainable tomorrow. Achieving this requires bold investments in USDA capacity and competitive funding and aligned federal programs.

s

Opportunities:

- **Identify innovative agronomic practices** that enhance nitrogen use efficency , soil fertility, structure, and resilience, while deepening our understanding of soil composition and processes.
- **Reduce barriers to collaboration** among farmers, land managers, communities, researchers, and policymakers to increase engagement and accelerate the adoption of grassroots innovations for adaptation and resilience.
- **Collaborate with communities and public offical s** to develop infrastructure and response plans to improve the resiliency of rural and urban communities.
- **Develop accurate metrics** to quantify greenhouse gas emissions, carbon sequestration, water usage, and biodiversity, integrating long-term weather modeling and scenario simulations to strengthen the resilience of agriculture and natural resource systems.
- **Apply gene-editing techniques** to create climate-resilient crops and livestock (e.g., improved water use efficency , drought tolerance, heat tolerance), and develop feeds to reduce methane emissions from livestock.
- **Create a multi-year strategy** that integrates innovative practices, Extension programs, and water monitoring to inform policy interventions aimed at improving agricultural water use efficency and utilization of nontraditional water sources, resilience to floods and droughts, water quality , accessibility, and ecosystem services.
- **Promote water-efficent , flo- and dr ought-resilient agricultural systems** by advancing best practices, tools, and Extension programs for improving crop and livestock productivity and water conservation, reuse, and quality .



Risks of Inaction:

From escalating wildfirs to droughts and floos, agriculture and our communities are already grappling with the effects of variable weather and extreme events. Without adaptation, these challenges will intensify, resulting in lower chop yields and greater harm to livestock, forests, fiseries, and communities. Biodiversity will decline as resistant weeds, pests, diseases, and wildfire become more widespread, disrupting ecosystems and agricultural productivity. The degradation of water, air, and soil quality will worsen, leading to severe consequences for food security, human and animal health, and environmental sustainability.

Cutting Across LGU Missions

Example: Diet-related Diseases (*Sustainable Food Systems*)

"Approximately one million people die annually from diet-related chronic diseases in the United States (U.S.), and these numbers are rising..."

"Poor diet is the leading cause of U.S. mortality which is directly related to malnutrition and chronic diseases including type 2 diabetes (T2D), cardiovascular disease (CVD), obesity, and some cancers..."

Matthews and Kurnat Thoma
https://doi.org/10.3389/fpubh.2024.1339859

agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

Integrated LGU Roadmap

Phase II Initiated

Elizabeth Stulberg, LBA

Vonda Richardson, ECOP Chair

Claus Tittiger, ACOP Chair

LEWIS–BURKE ASSOCIATES LLC

The Singular Message

March 5, 2025

Elizabeth Stulberg

Why a unified message is important

Nicholas Kristof is an Opinion columnist for *The New York Times* who has won multiple Pulitzer Prizes for his coverage of tragic international events and issues.

He is often asked what one can do about the horrific situations he covers, and so he writes a yearly list of charities with especially large impacts.

Outside

Adventure

Nicholas Kristof's Advice for Saving the World

What would happen if aid organizations and other philanthropists embraced the dark arts of marketing spin and psychological persuasion used on Madison Avenue? We'd save millions more lives.

Published: Nov 30, 2009 | | Updated: Feb 24, 2022

Nicholas D. Kristof Follow

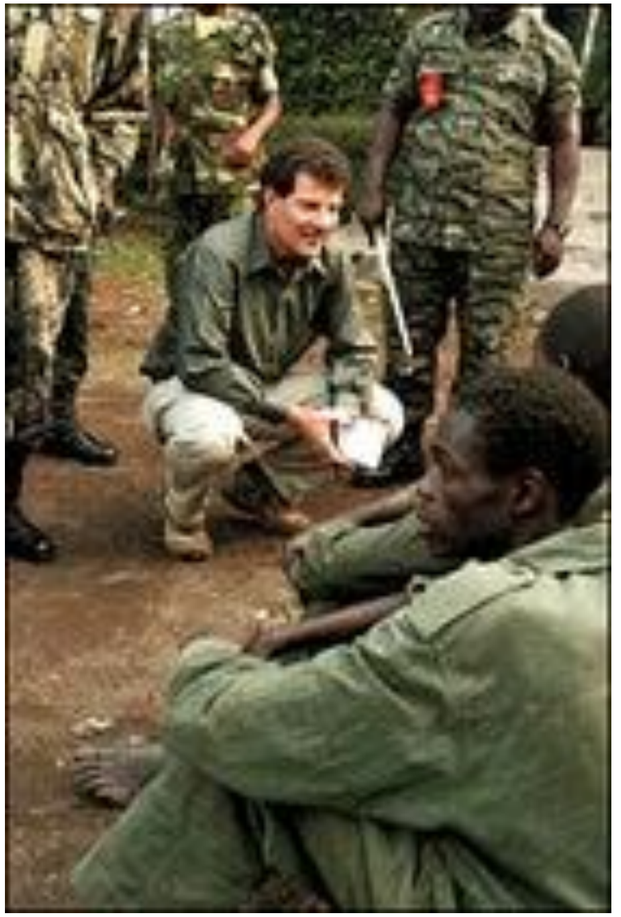
Kristof's wrote about genocide but couldn't get Americans to care

Americans: "*but isn't that what Africa is always like? People slaughtering each other? Anyway, we have our own problems.*"

So, Kristof turned to social psychology and marketing – how do you get someone to care?

He found:

1. *The story needs hope.*
2. *The impact needs to be "successful."*
3. *The message needs to be singular.*



There needs to be HOPE

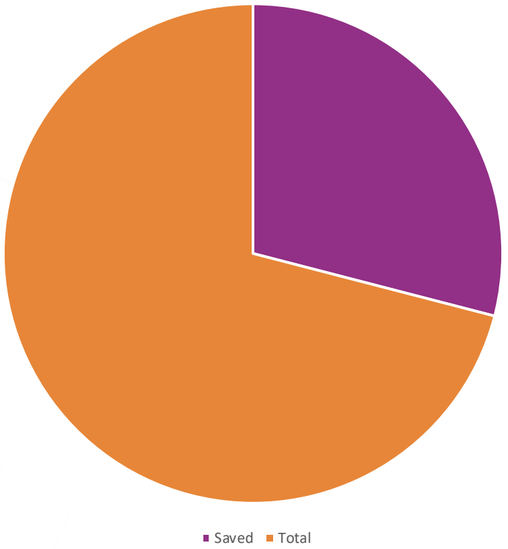
- In 2006, Kristof wrote of an 11-year-old orphan in Swaziland who, when AIDS killed her parents, took over her household and cared for her two younger sisters. They had no money and barely any food.
    - It was framed as emblematic of the catastrophe that is global AIDS.
    - This was depressing story.
    - There's nothing one person can do.

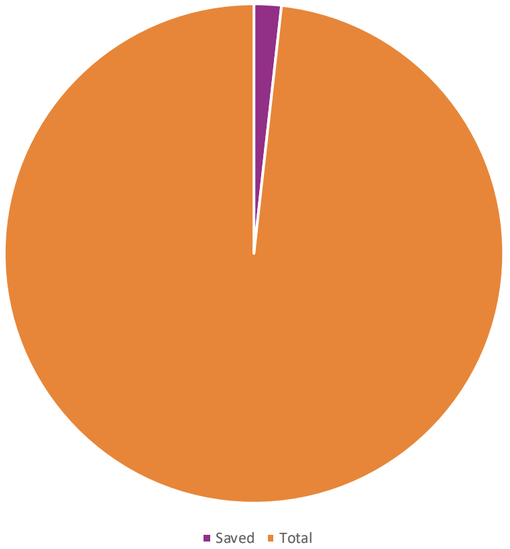
- In 2008, Kristof wrote of a courageous rape victim in Pakistan who founded a school in her remote village because, she said, "education is the best way to achieve social change." She was running out of money to protect herself or run the school.
    - It was also framed as emblematic of global sexism.
    - This was an empowering story.
    - Money poured in, more than $100,000, mostly in checks of less than $50; $400,000 more followed upon a fund that was set up with Mercy Corps.

Hope and triumph are necessary for engagement.

There needs to be "success"

- Kristof cited an experiment that showed people would give money for water treatment when it would save 4,500 people in a refugee camp of 11,000 *but not in a camp of 250,000.*
- Why? Because people feel that the first is a success and the second is a failure.

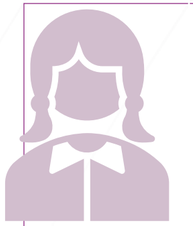




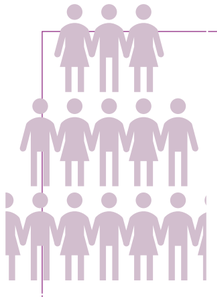
The way you frame success is important.

There needs to be ONE message

Kristof cited a second study that involved asking participants to donate to help hungry African children.



The first group was asked to help **one** 7-year-old girl, Rokia

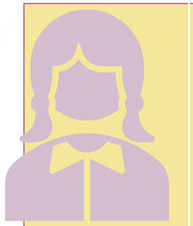


The second group was asked to donate to help **millions** of hungry children.

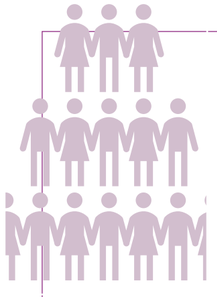
The third was asked to help Rokia but was also given **statistical information** about the broader issues of hunger.

There needs to be ONE message

Kristof cited a second study that involved asking participants to donate to help hungry African children.



The first group was asked to help **one** 7-year-old girl, Rokia



The second group was asked to donate to help **millions** of hungry children.

The third was asked to help Rokia but was also given **statistical information** about the broader issues of hunger.

119th Congress

Lewis-Burke Associates, LLC

LEWIS–BURKE ASSOCIATES LLC

JOHN FETTERMAN
U.S. SENATOR FOR PENNSYLVANIA

Home About John Newsroom Contact

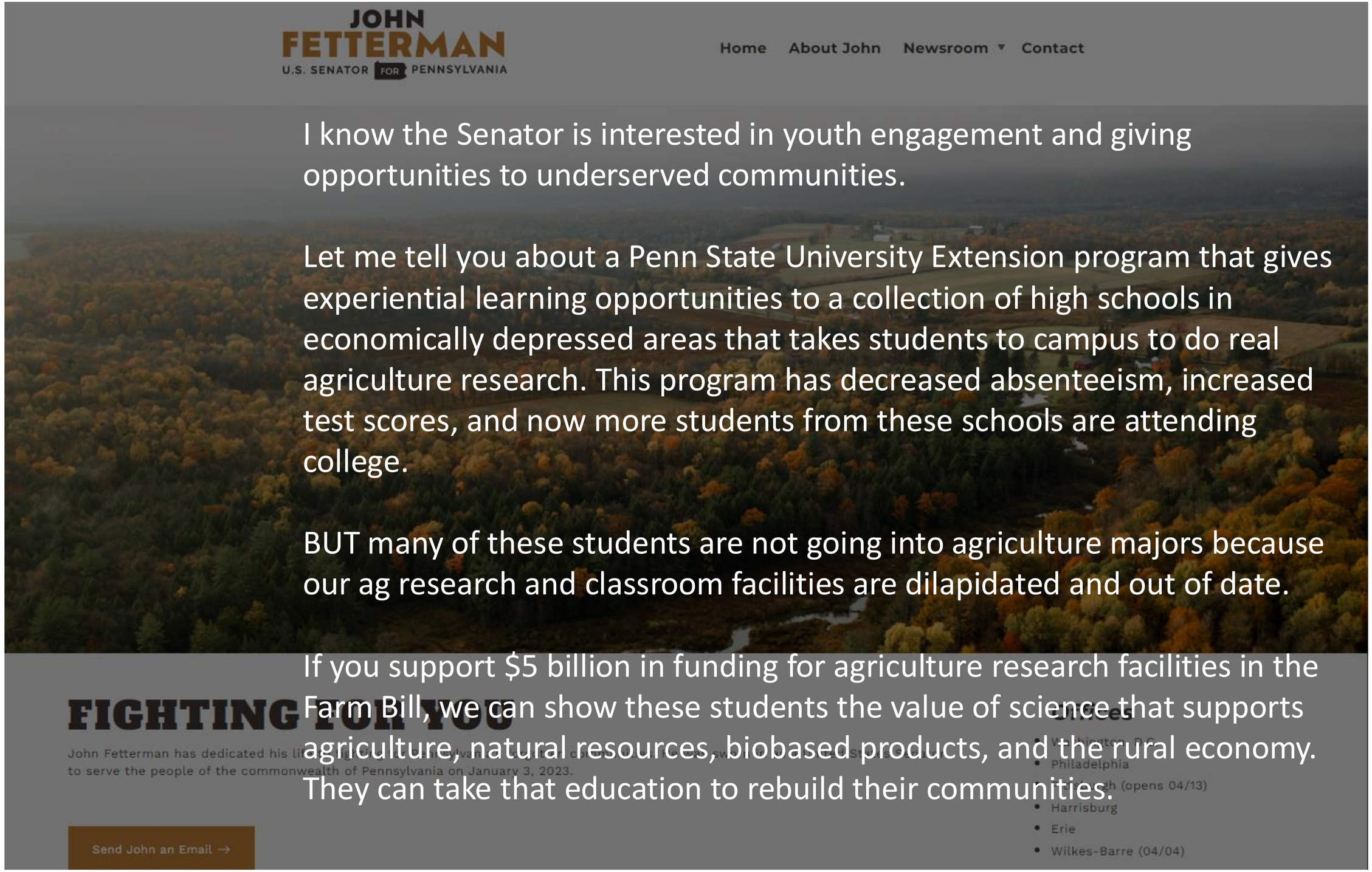
FIGHTING FOR YOU

John Fetterman has dedicated his life to fighting for Pennsylvania's forgotten communities. He was sworn in as a United States Senator to serve the people of the commonwealth of Pennsylvania on January 3, 2023.

Send John an Email →

Offices

- Washington, D.C.
- Philadelphia
- Pittsburgh (opens 04/13)
- Harrisburg
- Erie
- Wilkes-Barre (04/04)

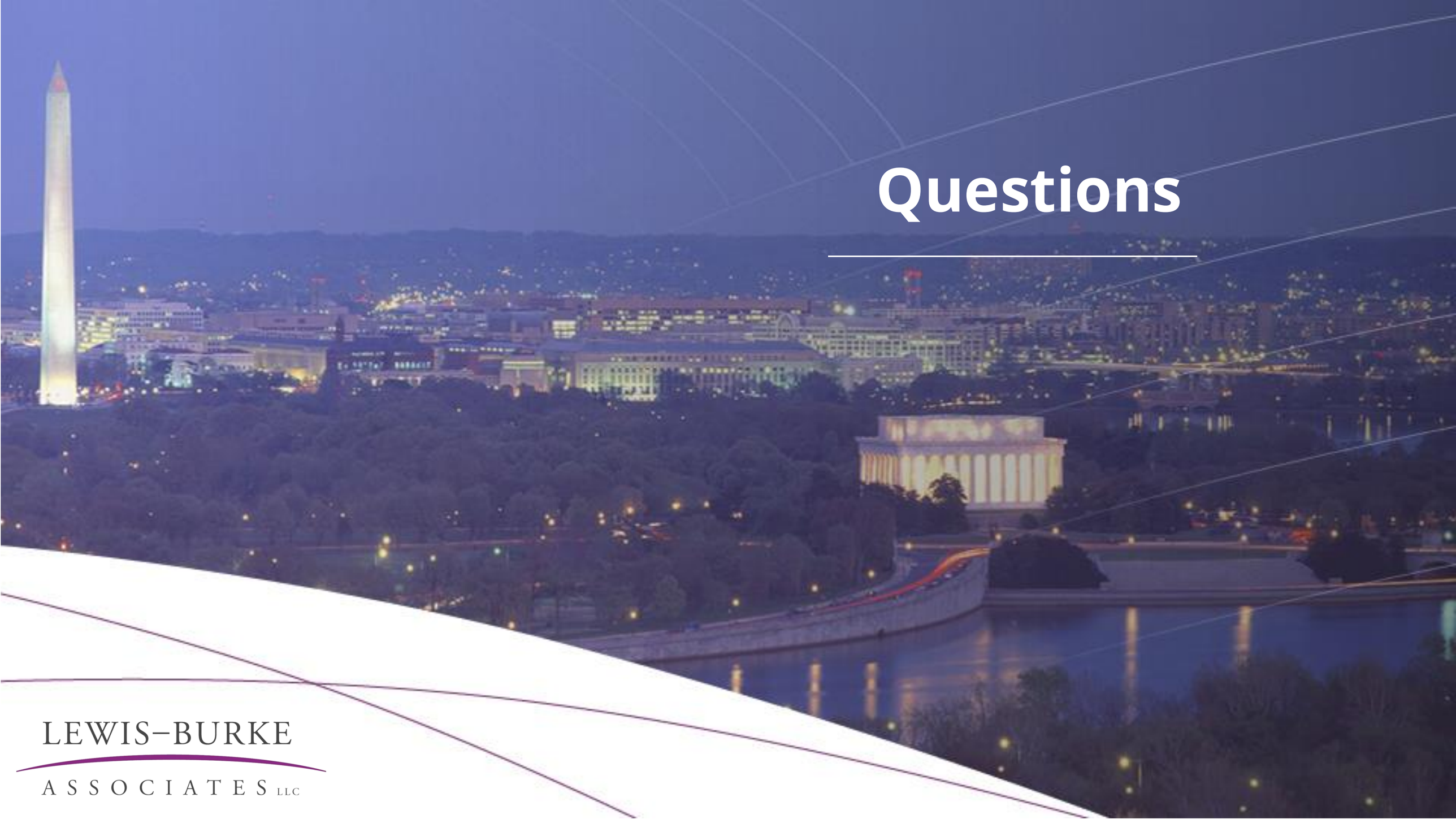


I know the Senator is interested in youth engagement and giving opportunities to underserved communities.

Let me tell you about a Penn State University Extension program that gives experiential learning opportunities to a collection of high schools in economically depressed areas that takes students to campus to do real agriculture research. This program has decreased absenteeism, increased test scores, and now more students from these schools are attending college.

BUT many of these students are not going into agriculture majors because our ag research and classroom facilities are dilapidated and out of date.

If you support $5 billion in funding for agriculture research facilities in the Farm Bill, we can show these students the value of science that supports agriculture, natural resources, biobased products, and the rural economy. They can take that education to rebuild their communities.



Questions

LEWIS–BURKE
ASSOCIATES LLC


COOPERATIVE EXTENSION




Cooperative Extension 2025-2035 Roadmap

The Cooperative Extension Section/ECOP National Office is headquartered in Washington, DC at the Association of Public and Land-grant Universities (APLU)

Cooperative Extension 2025-2035 Roadmap:

An “Outcomes-Driven” Extension Roadmap

- Extension leaders are developing clear goals and ambitious research and education outcomes to tackle some of our nation's most critical aspirations in six pillar areas.

- This plan outlines bold and measurable objectives achievable through increased strategic investment in land grant universities.

- This investment will add Extension professionals who will work together to ensure cutting edge research results in practices and policies that will have a profound positive impact in our food system, workforce, climate resiliency, and the health of our people and communities.

Cooperative Extension 2025-2035 Roadmap:

- **Extension** and **Research** have symbiotic missions that intertwine to ensure research findings are shared and implemented to solve community problems.
- **Extension** informs **Research** by bringing community and industry needs to universities and then works with scientists to translate findings and deliver research-based information back to people where they live and work.
- Without this translational **Extension** work, basic **Research** findings might never find their way into day-to-day practices.
- **Research** needs **Extension** to ensure impact on people and society.
- **Extension** needs **Research** to remain a trusted source of information.

Cooperative Extension 2025-2035 Roadmap:

- **Nutrition and Health**
- **4-H Youth Development**
- **Community Economic Development**
- **Sustainable Food Systems**
- **Water Resilience**
- **Resilient Lands**

From the Roadmap

- Crosscutting Education Outcome Goal: Workforce Development: Annually train an additional 20,000+ college students and four million+ 4-H members in food, agriculture, and renewable natural resources to meet the increasing demand for a skilled workforce. Recruitment efforts will focus on engaging youth and adult learners from diverse backgrounds and experiences.

USDA Employment Outlook Report

New Study Due Fall 2025
- Substantial Change in Gap of Jobs vs Graduates

USDA 2020-2025 Employment Opportunities – in Food, Agriculture, Renewable Natural Resources, and the Environment

USDA Employment Outlook Report

Employment Areas

- Management and Business (15,552 FARNRE, 10,152 Allied)
- Science and Engineering (9,159 FARNRE, 7,898 Allied)
- Food and Biomaterials Production (7,293 FARNRE, 665 Allied)
- Education, Communications, and Government Services (4,108 FARNRE, 4,574 Allied)

Pillars

- Sustainable Food Systems
- Land and Water Resilience
- Nutrition and Health
- 4-H Positive Youth Development
- Community Economic Development

agInnovation science that feeds the world

Academic Programs Section

Cooperative Extension

Next Steps:

Q1 (Jan-Mar)

- Complete roadmap documents
- Begin research/Extension Roadmap Integration
- **Governance Committee** - formation
- **Communications Consultant** - hire

Q2 (Apr-Jun)

- Complete Unified LGU Roadmap
- Develop/initialize a communications strategy
- Build the ask $
- **Coalition building roundtables** - ID champions

Q3 (Jul-Sep)

- Continue communications strategy
- Continue Coalition building roundtables
- Present at BAA Summer Leadership Mtg

Q4 (Oct-Dec)

- Present to BAC, CLP, PBD at APLU Annual Mtg

Roadmap Governance Committee

agInnovation

Steve Lommel, Chair
Chandra Reddy, Incoming Chair
Gary Thompson, Executive Vice Chair

Cooperative Extension

Vonda Richardson, Chair
Lisa Townson, Incoming Chair
Bill Hoffman, ECOP Executive Director

Academic Programs

Claus Tittiger, Chair
Kristen Govoni, Incoming Chair
Wendy Fink, ACOP Executive Director

FANR/LBA

Doug Steele or Marcus Glassman
Elizabeth Stulberg

At large

Rich Bonanno-Alton Thompson-John Phillips

agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

Roadmap Implementation

Roles for the Standing Committees

Nathan Slaton, STC Chair

Gary Pierzynski, BLC Incoming Chair

agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

STC 2025 BRIEF

2025 AGINNOVATION SPRING MEETING

STC WELCOMES NEW MEMBERS & LIAISONS

Diane Rowland
agInnovation
Northeast

Lee Hecker
agInnovation Northeast

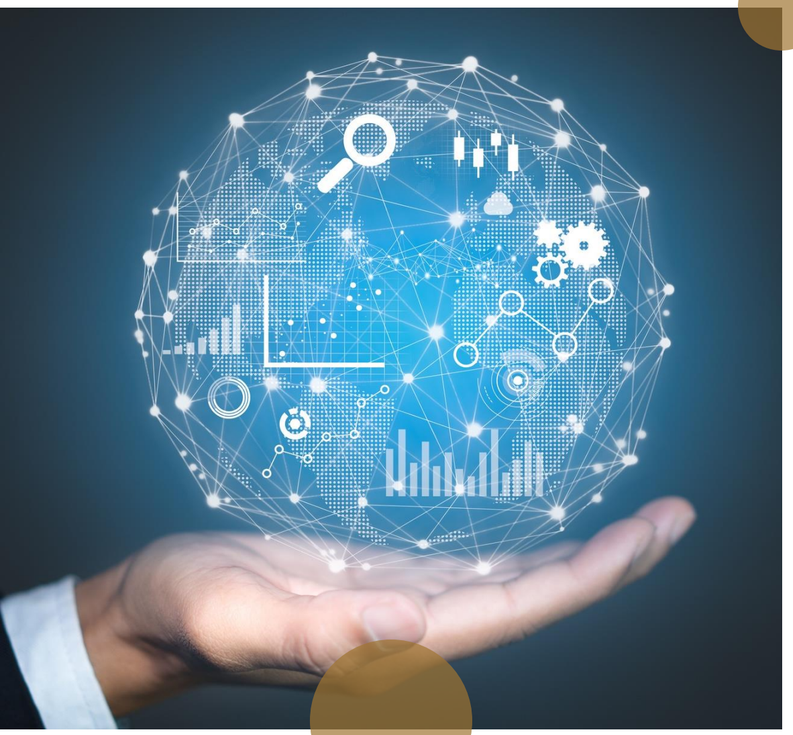
Matt Yost
agInnovation-West

Ada Szczepaniec
NIPMCC Chair

Corinne Valdivia
SSSC

agInnovation
science that feeds the world

THANK YOU JOHN YANG FOR YOUR YEARS OF SERVICE TO STC!



OPEN ACCESS

- Departmental regulation 1020-006 extends to USDA employees, awardees, and contractors involved in scientific research, applicable to projects funded from fiscal year 2023 onwards, starting October 1, 2022. The regulation does not retroactively apply to historical data but focuses on current and future research activities.

- Federally supported researchers have up to 12-months after publication of a related scholarly publication, or the end of the performance or funding period if there is no related scholarly publication.

Links to presentations available on the STC website

Public Access to Results of USDA-Funded Research

Public access to scholarly publications and digital scientific research data- stc fall 2024

IMPLEMENTATION OF AGINNOVATION ROADMAP

- Validate the outcome-oriented aspirational goals with references from the literature.
- Recommend areas of scientific focus that align with each of those goals while developing supportive materials on the return on investment.
- Develop talking points for various audiences with the assistance of a to-be named communications firm once the validation process is complete.

agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

BLC 2025 BRIEF

2025 AGINNOVATION SPRING MEETING

Budget and Legislative Committee

Primary Role:

Develop annual justifications for federal budget process and legislative priorities, including the Farm Bill, in consultation with APLU Budget and Advocacy Committee (BAC) and Committee on Legislation and Policy (CLP)

Membership:

- Voting Members
  - Chair: 2-yr term rotation - North Central, West, Northeast, and Southern regions
  - agInnovation members: 2 directors per region

- Nonvoting members
  - Representative from:

    ECOP, BHHS, NRVM, LBA, VP FANR, NIFA, CAR, Extension, CARET, Executive Vice Chair.

BLC Role in Roadmap Implementation

- **Incorporate Roadmap into regular BLC functions.**
- **Develop a Funding Strategy**: *Identify research funding priorities and justifications that align with the roadmap's outcome goals and research approaches.*
- **Assess Funding Requirements**: *Determine the funding needed for each pillar topic area, as recommended by the LBA.*
- **Stay Current on Federal Budget and Policy & Influence APLU Positions**: *Monitor federal budget activities and policy decisions to ensure agInnovation can adapt its roadmap budget strategy as needed and inform and influence the broader APLU positions.*
- **Collaborate with STC and Communications**: *Work with the STC and Communications teams to align the funding strategy with scientific priorities and support effective messaging.*

agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

Diversity Catalyst Committee

Nina Lyon-Bennett, DCC Chair

Diversity Catalyst Committee

Recommended Actions:

- Curtail the call for nominations for the National agInnovation Diversity, Equity, and Inclusion Awards (individual and group).
- Scale back the activities of the Diversity Catalyst Committee.
- Remove the Diversity Catalyst Committee page from the ESCOP/agInnovation website.
- Remove the pages on the agInnovation website that refer to diversity, equity, and inclusion.
- Remove “Promote Diversity, Equity, and Inclusion” from the Chair’s initiatives.
- Remove the Diversity Catalyst Committee from the **agInnovation Rules of Operation**.

agInnovation Rules of Operation - Vote

Major revisions include name change and streamlining business operations

7 Standing Committees of agInnovation

Executive Committee
Budget and Legislative Committee
Diversity Catalyst Committee
Finance Committee
NPGC Committee
NRSP Review Committee
Science and Technology Committee

agInnovation Executive Committee

REMOVED: ESCOP and Executive Committee for ESCOP
Chair's Advisory Committee (CAC) now agInnovation chair's *ad hoc* committee

Positions Defined

Leadership: terms, roles, responsibilities, nomination, confirmation, election
Standing Committees: membership, terms, roles, responsibilities

New items

agInnovation's 501(c)(3) non-profit
Expenditures approved by majority of Finance Committee: ≤$5,000, max = $20,000/yr or >$5,000 and <$20,000
Expenditures approval by a majority of agInnovation >$20,000

agInnovation
science that feeds the world

LAND - GRANT UNIVERSITY RESEARCH

THANK YOU