

PA Agriculture Cross-Sector Collaborative

Hosted by Team Pennsylvania

Launch Meeting Summary

April 21, 2023

Leaders spanning agricultural industries and public and private sectors identified the following workstreams at the launch meeting. All topics were focused on the opportunities presented within “Advanced Agriculture” (defined below):

WORKGROUPS

1. CULTIVATING A LONG-TERM STRATEGY (Narrative & Purpose)

Define a vision and overarching strategy for the future of food and agriculture in Pennsylvania. This workstream has multiple components, aimed at framing and guiding the work of the Collaborative going forward:

- **Scenario planning** to define the future of agriculture including defining what the “farm of the future” looks like and will require;
- **Analyzing common needs across sectors to identify the most pressing challenges that require a collaborative approach:** identify challenges that are shared across ag sectors that impact the stability and competitiveness of the industry that could be prime for technology adoption;
- **Understanding consumer awareness and receptivity, and developing a compelling narrative for consumer education:** research to understand current levels of consumer awareness of technology used in agriculture, as well as their receptiveness to technology and innovation in agriculture. Based on the research, developing a compelling narrative on the importance of technology to agriculture, as well as the potential of ag innovation.

Champions: David Briel (DCED); Ravid Butz (PICC); Lee Kandt (Lampire Biologicals); Ian Kanski (HU); Chris Keetch (Giant); Bill Kitsch (Ephrata National Bank); Gregory Krug (Lampire Biologicals); April Mock (Giant); Moritz Raepfle (Bowery); Derek Smith (RII); Chuck Turner (Turner’s Dairy)

2. MOBILIZE AG CARBON MANAGEMENT (Carbon capture)

The ag sector has an important role to play in carbon sequestration which will require an organized effort to track and account for carbon emissions and deposits. This workstream could include efforts to benchmark emissions of farms to establish baselines, creating a carbon footprint tracking system for PA food, ag, and natural resource products, and encouraging product-level greenhouse gas accounting via state-sponsored frameworks and marketing programs. The team agreed to explore the potential for this workstream in collaboration with the Energy Horizons Cross-Sector Collaborative.

Champions: Ravid Butz (PICC); Dan Eichenlaub (Eichenlaub); Christina Kostelecky (Pasa); Vince Mangini (Food21); Kristen Markley (PDA); Moritz Raepple (Bowery); Mike Roth (PDA)

3. ACCESS TO CAPITAL

Focused on exploring alternative capital and financing mechanisms and developing new delivery systems. This includes learning from other states and encouraging ag-specific investment in the venture space.

Champions: Alexa Born (White Rose Ventures); Martin Brill (SBDC); Daniel Dotterer (Daniel Dotterer Farms); Jared Grissinger (GAT, DCED); Tim Keohane (SBDC); Ryan Riley (HU); John Sider (Ben Franklin Tech Partners); Gary Smith (CCEDC); Darrin Youker (PDA)

4. PROMOTING RESEARCH & INNOVATION (Developing an Ag Innovation Ecosystem)

Building supporting infrastructure for entrepreneurship including Innovation Hubs, & technical assistance, as well as encouraging additional investment in R&D.

Champions: Alexa Born (White Rose Ventures); James Delattre (PSU); Daniel Dotterer (Daniel Dotterer Farms); Jeff Hill (Livestock Welfare Strategies); Cherie Kagan (Penn & IoT4Ag); Lee Kandt (Lampire Biologicals); Ian Kanski (HU); Tim Keohane (SBDC); Jim Ladlee (PSU Extension); Krista Schneider (PennTAP); John Sider (Ben Franklin Tech Partners); Michael Smith (Penn); Fred Strathmeyer (PDA); Erin Wachter (PSU); Steve Wray (CMU); Skyler Yost (YCEA)

5. DEVELOP THE FUTURE OF AG WORKFORCE (Augmenting current ag workforce)

Workforce is a top issue for the agriculture industry. This work area should focus on where technology can be applied to addressing the workforce gaps and could include an effort to define the future of the ag workforce, identifying needed capabilities and capacities as well as needed actions such as integrating ag workforce training sites into ag tech demonstration sites. It could also include near-term strategies to address workforce needs through tech-enabled labor coordination across businesses.

Champions: Chris Alonzo (Pietro Industries); Eric Darr (HU); Sara Gligora (PDA); Lisa Graybeal (PDA); Christina Kostelecky (Pasa); Jim Ladlee (PSU Extension); Eric Patton (Clemens Food Group); Derek Smith (RII); Gary Smith (CCEDC); Steve Wray (CMU)

6. STRENGTHEN INTERNATIONAL NETWORKS

This group should focus on strengthening PA's representation and network around the world through organizing trade missions and trips for Pennsylvania delegations of ag stakeholders, learning from international examples of ag innovation and systems-building, encouraging international collaboration to apply international best

practices in Pennsylvania, as well as raising Pennsylvania's profile internationally in advanced agriculture technology.

Champions: Chris Alonzo (Pietro Industries); David Briel (OIBD, DCED); Martin Brill (SBDC); Bill Kitsch (Ephrata National Bank); Skyler Yost (YCEA)

7. SHAPE POLICY

This group should focus on informing and shaping state-level policy as it relates to unlocking economic opportunities for tech-enabled agriculture.

Champions: Sara Gligora (PDA); Jared Grissinger (GAT, DCED); Bill Kitsch (Ephrata National Bank); Gregory Krug (Lampire Biologicals); Mike Roth (PDA); Michael Smith (Penn); Erin Wachter (PSU); Darrin Youker (PDA)

NEXT STEPS

In May, small groups will meet virtually on each of these areas to refine focus. The purpose of these meetings will be to answer questions like:

- What does success look like? In 3-5 years, where would you hope to be? What would be signs of progress that would keep you engaged?
- What is the gap we're trying to fill? Is this state-level, actionable, doable, and makes sense to be focused on?
- What are some near-term actions (3-6 months) that would move us toward goals?
- If you had to pick a specific area to apply "advanced agriculture" that this small group could have an influence on, where would you start?

TENTATIVE QUARTERLY MEETINGS

- Monday, July 17, 2023 (virtual) from 11:00 am - 12:30 pm
- Friday, October 20, 2023 (in person) from 10:00- 1:00 pm w/ lunch
- Friday, January 19, 2024 (virtual) from 11:00 am - 12:30 pm

THE OPPORTUNITY

Agriculture is both foundational to Pennsylvania's economy and at the nexus of the most critical conversations of our time regarding food supply, the environment, climate, water, and energy. **Advanced Agriculture, or tech-enabled approaches for growing and processing food with the intention of higher quality, increased efficiency, and reduced impact on the environment present a path to transform our economy, elevate industry, and create and sustain jobs throughout our state.** State leaders must work together to prioritize tech-enabled advancement for food and agriculture industries accordingly.

We have everything we need to make progress toward a safe, abundant, and sustainable food and agriculture system: a legacy of agriculture; a diverse industry with strong, existing, and growing businesses across the entire supply chain; world-class research institutions and impactful nonprofits; a nation-leading Farmland Preservation Program; and abundant water and energy, just to name a few.

Increasingly, other states (and nations) are seeking to transform their food and agriculture industries as leaders navigate the complexities of global food supply in the context of ever-shifting geopolitical conditions and a changing climate. Pennsylvania must ensure that we are not left behind or playing catch up when there is a compelling case that action is needed now to capitalize on the opportunities before us.

THE COLLABORATIVE'S ROLE

The PA Agriculture Collaborative is a statewide network that brings together leaders from industry, government, organized labor, nonprofits, and academia to create the conditions for innovative, technological, and market-driven solutions to ensure sustainable, safe, and abundant agricultural supply within Pennsylvania's economy while creating jobs.

The Collaborative is —

- **Public-Private:** Driven by private sector leaders and champions from state government who share a commitment to Pennsylvania's food and agricultural industries. Nonprofit, organized labor, academic and regional organizations also play important roles in driving the Collaborative's action agenda.
- **A catalyst & enabler:** The Collaborative drives action around food and agriculture, creating the conditions for infrastructure investments to be made in Pennsylvania through compelling messaging as well as policy and regulatory frameworks.
- **A driver of sustained commitment:** The Collaborative is designed to mobilize and sustain the long-term, public-private commitment needed to realize the economic opportunities of food and agriculture in the Commonwealth.

Opportunities to strengthen PA's food and ag system through technology

Use tech to increase efficiency and food production

AI

Robotics to address workforce shortage

monitor using sensor systems: need to be able to collect communicate analyze

Carbon Capture

use tech to measure & monitor

ag + energy: need to monitor carbon movement & transport

monitization

attract & retain workforce population

Apply carbon capture across ag sectors

Biomaterials
waste products & feed stock

leveraging tech across sectors
distribution & value added applying technology

scale: make smaller + affordable to use across 53K farms

distributed energy systems supports food

specialized custom tech to meet specific ag needs

Use tech to reduce food waste

decentralized production using technology

Creating a narrative & refining the purpose

consumer education

April Mock (Consumer education)

connecting people with their food

Chris Keetch (consumer education)

consumer research create a fact-base of economic opportunity & environment around adopting tech-driven CEA products + forward looking trends

Gregory Krug (Consumer Education)

infrastructure to support youth interest in ag

Lee Kandt (Consumer Education)

further develop education for producers side and consumer side

educate public & youth about ag & food system

targeted outreach to new growing population centers

host CEA & ag summit

Bill Kitsch (narrative & purpose)

inbound trade delegation

Ravid Butz (narrative & purpose)

Scenario planning to define the future of ag

Chuck Turner (narrative & purpose)

analysis of common needs across sectors

Ian Kanski (narrative & purpose)

attract new farms to our state away from those subject to climate pressure

Moritz Raepple (narrative & purpose)

what is the farm of the future?

David Briel (narrative & purpose)

Carbon Capture

Carbon Tracking of PA food, ag, natural resource products (Carbon footprint \$)

Encourage product-level GHG accounting via state sponsored frameworks and marketing programs

Co-serve a group to determine status of carb on capture (PSC, CMG, PA Forest Products Association)

Benchmark energy/water/carbon/ emissions of farms to establish baseline for ongoing tracking & improving

Agree on method for setting GHG reduction goals and targets

Mike Roth (carbon)

Christina Kostalecky (Carbon)

Moritz Raepple (Carbon)

Ravid Butz (carbon)

Vince Mangini (carbon)

Dan Eichenlaub (carbon)

Kristen Markley (carbon)

trade delegations

encourage international collaboration

David Briel (international)

Learn from international examples

Skylar Yost (international)

Bill Kitsch (international)

Chris Alonzo (international)

Martin Brill (international)

Future of Ag Workforce

Develop an ag tech education training site

education training starting early - how to & benefits

Training center (education) for workforce to use technology

owner support & development (not just workers)

Future of ag workforce initiative - what is needed, what can be done

Connect workforce systems to the sector to build a worker pipeline

tech to bring equity & safety to workforce

Developing labor coordination (shared labor pools) technology

Lisa Graybeal (future of workforce)

Eric Patton (future of workforce)

Eric Darr (future workforce)

Sara Gligora (future of workforce)

Steve Wray (future of workforce)

Gary Smith (future of workforce)

Christina (future of workforce)

Chris Alonzo (future of workforce)

Jim Ladlee (future of workforce)

Research & Innovation

Entrepreneurship

build entrepreneurial ecosystems in every metro

Advanced ag-specific programs & resources for PA, bring innovators bringing new tech to market

Cherie Kagan (research & innovation)

Technical Assistance

Facilitating tech adoption among existing ag businesses

Krista Schneider (research & innovation)

Dan Eichenlaub (research & innovation)

Innovation Hubs

create a clear process to connect tech providers and producers and identify funding

Create cross-sector applied research hubs

PA Ag-Tech Research Convening

Ag-specific tech innovations: define constraints, cost, scale, deployment, & needs

PA delegation to indoor agtech innovation summit

translational research & proof of concept, funds to aid commercializing advanced research @ PA universities

Applied research & commercial action infrastructure in every metro

block chain technology for food traceability & food security

Partnership between Ag & Tech (academia, government, industry & end users)

Best practices from other states

farms work together to get & use tech (ag trade association)

research how other states / countries are using tech to address labor shortage in ag

Research and Development Investments

Research dollars

Capacity building to increase access to funding (grant writing)

investments in R&D

Daniel Dotterer (research & innovation)

Michael Smith (research & innovation)

Lee Kandt (research & innovation)

Skylar Yost (research & innovation)

Ian Kanski (research & innovation)

Jeff Hill (research & innovation)

Tim Keohane (research & innovation)

Steve Wray (research & innovation)

John Sider (research & innovation)

Erin Wachter (research & innovation)

Jim Ladlee (research & innovation)

Fred Strathmeyer (research & innovation)

James Delattre (research & innovation)

Alexa Born (research & innovation)

Access to Capital (New Delivery System)

learn from other sales-source capital access

nonprofit org @ state level that can access capital

Public & private investments in R&D to encourage technology solutions for advanced agriculture

Encourage ag-specific investment (venture especially)

Darrin Youker (access to capital)

John Sider (access to capital)

Alexa Born (access to capital)

Gary Smith (access to capital)

Daniel Dotterer (access to capital)

Martin Brill (access to capital)

Jared Grissinger (access to capital)

Tim Keohane (access to capital)

Ryan Riley (access to capital)

Shape Policy

Comprehensive eval of legislative & regulatory barriers to tech adoption

Evaluate current regulatory environment and ID what's needed

Educate township supervisors & zoning officers on "New Ag Farm"

Specific programs to encourage use of biotech product innovation - GEOW NY example

Implementation of policies and acceptance or not to support ag tech innovation (such as cultured products)

Regional coordinator groups to attract federal funds by convening stakeholders

Reward farmers, producers, & incentives, tax-ced for using AI or reducing carbon

sustainable & predictable sources of state assistance

change state policy around land use - land taken out of production

Sara Gligora (shape policy)

Erin Wachter (shape policy)

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**Learn from
international
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**trade
delegations**

**encourage
international
collaboration**

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**Access to
Capital (New
Delivery
System)**

**Encourage
ag-specific
investment
(venture
especially)**

**learn from
other sates-
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capital access**

**Capital
investment**

**Public & private
investments in R&D
to encourage
technology
solutions for
advanced
agriculture**

**nonprofit org
@ state level
that can
access capital**

**producers
must be
profitable**

**Darrin
Youker**

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