Supporting New Agricultural Innovations in Tennessee
Agriculture Task Force
National Conference of State Legislatures
August 5, 2019
AgLaunch Initiative is a nonprofit organization governed by an independent board of directors that was formed with the purpose of creating new regional opportunities in agriculture.

**Vision**
A transformed regional agriculture and food economy centered around farmers, innovation, and prosperity.

**Mission**
AgLaunch attracts, creates, and grows agtech startups, facilitates the development of new agriculture and food value-chains, and builds collaborative farmer networks, with a commitment to intentional inclusion.
BOARD OF DIRECTORS

Dewayne Goldman, Ph.D.
Owner
Dell-Cam Farms

Carolyn Hardy
President & CEO
Chism Hardy Investments

Corinne Gould
Assistant Commissioner for Public Affairs
TN Dept of Agriculture

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Karen LeVert
COO & Co-Founder
AgTechInventures

Andrew McCarroll
General Counsel
Southeastern Asset Management

Rhedona Rose
Executive Vice President
TN Farm Bureau
PROGRESS

✓ Created based on recommendations of state rural development strategic planning
✓ MOU with Tennessee Dept. of Agriculture (TDA)
✓ 24 agtech companies accelerated
✓ 17 farmers fully participating
✓ 6 value-added projects supported
✓ Implemented farmer cost-share program with TDA
✓ Model farm program in distressed counties
✓ Supported Innova Memphis in creating first early-stage AgTech RBIC fund ($31M)
✓ Designated as SBA Regional Innovation Cluster (only one solely focused on production agriculture) & recently awarded EDA i6
<table>
<thead>
<tr>
<th>Program support and field trial cost-share</th>
<th>Field scale trials &amp; data share</th>
<th>Farm Credit System</th>
<th>RBIC Venture Capital</th>
<th>Visibility &amp; Data</th>
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<td><img src="image1.png" alt="Department of Agriculture" /></td>
<td><img src="image2.png" alt="Ritter Agribusiness" /></td>
<td><img src="image3.png" alt="AgriBank" /></td>
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<td><img src="image6.png" alt="Farm Bureau" /></td>
<td><img src="image7.png" alt="MidSouth Family Farms" /></td>
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<td><img src="image9.png" alt="Midwest Growth Partners" /></td>
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<td><img src="image11.png" alt="USDA" /></td>
<td><img src="image12.png" alt="Batey Farms" /></td>
<td><img src="image13.png" alt="Farm Credit Mid-America" /></td>
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<td><img src="image16.png" alt="NBGC" /></td>
<td><img src="image17.png" alt="Tosh Farms" /></td>
<td><img src="image18.png" alt="Compeer Financial" /></td>
<td><img src="image19.png" alt="Advantage Capital" /></td>
<td><img src="image20.png" alt="Produce Retailer" /></td>
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AGRICULTURE IS CHANGING

• Consumers want different food
  – More specialty, fresh foods "local" and less processed commodities

• Innovation is accelerating
  – Lowered costs of developing new products and increased efficiency

• New business models
  – Farmers are thinking differently on how to participate in the value-chain
• There is a real need:
  – 70% increase in calories/100% increase in overall production with declining natural resources within a generation
  – Agriculture is low efficiency (any help is a big help)

• High failure rate of companies that should be successful
  – Focus on solving for fix point NOT transitioning to the future
  – Lack of alignment between corporate strategy & farmer interests
  – VC investment focus on "unicorns" versus focus on real farmer needs

• Are farmers slow to adopt new technology or does AgTech need a clearer value proposition?
  – Technology adoption (e.g. biotech) has been widespread. (Dicamba tolerant soybeans reached 40MM+ Acres in 2 years)

• Data versus Executional Capability (variable rate)

• We are building the wrong kind of “incubators”
<table>
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<tr>
<th>TENNESSEE’S UNIQUE ASSETS</th>
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<tbody>
<tr>
<td>Abundant water &amp; good soil</td>
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<tr>
<td>Major commodity crops, specialty crops &amp; livestock</td>
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<td>Emerging local food opportunities</td>
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<td>Established farmers willing to try new ideas</td>
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<td>New pathways for beginner farmers</td>
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<tr>
<td>Unparalleled logistics capabilities &amp; market access</td>
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<tr>
<td>Multi-billion food manufacturing &amp; bio-processing industry (1,000 food companies)</td>
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<tr>
<td>Network of regional experiment stations and extension service from land grant universities</td>
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GROWING AG COMPANIES

ACRES
FIELD TRIALS
FARMERS
PEER-TO-PEER
DATA
EXPERIENCE
SERVICES
GROW AG BUSINESS
INVEST
USDA RBIC
FARM CREDIT SYSTEM
AG-FOCUSED VC
OPPORTUNITY ZONE, NMTC, CDFI
ACCELERATOR
TECHNICAL ASSISTANCE
MENTORS
BOOTCAMPS
COMMODITY GROUPS
SBIR/STTR
EXPERIMENT STATIONS
TECH TRANSFER
REGIONAL INNOVATION
EXPERIENCE
GROWING AG COMPANIES

GROW AG BUSINESS

SERVICES
- ACCELERATOR
- TECHNICAL ASSISTANCE
- MENTORS
- BOOTCAMS

INVEST
- USDA RBIC
- FARM CREDIT SYSTEM
- AG-FOCUSED VC
- OPPORTUNITY ZONE, NMTC, CDFI

RESEARCH
- COMMODITY GROUPS
- SBIR/STTR
- TECH TRANSFER
- REGIONAL INNOVATION
- EXPERIMENT STATIONS

FARMERS
- ACRES
- FIELD TRIALS
- DATA
- EXPERIENCE

PEER-TO-PEER
There are a lot of really interesting new technologies & value-chain opportunities

- Equipment, software, sensors, AI, automation, new genetics, drones etc.
- Malt barley, specialty varieties, vegetables, winter oilseeds, local food etc.
- New systems & markets – carbon, ecosystem, organic etc.

Farmers are asked to ”buy” these products and ideas when they are not ready for market
The AgLaunch Farmer Network is a network of progressive, early-adopter farmers who "incubate" agricultural technology & value-added opportunities
- Data and other information through farm-scale field trials
- Demonstrating technologies on farms
- Providing expert advice to new agricultural companies and those that invest in them
- Willing to partner in promising opportunities
- Support to help pinpoint problems and create solutions
The AgLaunch Farmer Network brings together leading farmers to help discover, incubate, and grow new ideas in agriculture – technology & value-add.

Business case developed with Verdant Partners through RBDG grant.
Tony Brannon, Brannon Farms, Henry
Brian & Morgan Flowers, Flowers Dairy, Giles & Maury
Alex Forsbach, Growing Acres, Hardin
Scott Fullen, Mid-South Family Farms, Lauderdale
Steve Harrison, Harrison Dairy, Loudon & Monroe
Debra Lockard, Lockards Produce, Lauderdale & Shelby
Rex & Amy Nance, Tuck-A-Way Farm, Williamson
Ben Neale, Giles & Warren
Grant Norwood, Norwood Farms, Henry
Josh Ogle, D&J River Farms, Lincoln & Franklin
Nick Paterson, Acres of Grace Farms, Clay
James Riddle, Seven Springs Farm, Union
Ray Sneed, Sneed Brother Farms, Shelby & Tipton
Jimmy Tosh, Tosh Farms, Henry
Ray Tyler, Rose Creek Farms, McNairy
Brandon Whitt, Batey Farms, Rutherford
Jay Yeargin, Yeargin Farms, Weakley & Gibson
HOW IT WORKS

STARTUP COMPANY

PARTICIPATING FARMER

TECH & SUPPORT

PROJECT DEVELOPED TO TEST AND SCALE SOLUTION ON FARM

50% OF PROJECT COST REIMBURSED BY TDA

50% OF PROJECT COST CONVERTED TO EQUITY OR 1ST RIGHTS
CASE STUDY 1

• California-based company active with specialty crops
  – Measures soils moisture in real-time
  – Winner of Western Growers & Radicle Growth’s automation challenge

• Conducting first row crop trials in Tennessee
  – Partnered with Norwood Farms
  – Implementing 2.0 in 2019
CASE STUDY 2

- Iowa-based company
  - Using artificial intelligence to eliminate sow and piglet deaths.
  - Iowa Farm Bureau Entrepreneur of the Year (2018)
- Conducting version 1.0 trial with Tosh Farms
  - 2019 Top Producer of the Year
  - Redesigning key components (adhesive, size of sensor) for new trial in 2019
- Trial cost share facilitated through TDA.
- Equity investment from Ag Ventures Alliance & Innova RBIC
• Rose Creek Farms is focused on small scale vegetable production
  – A major barrier to entry is producing consistent supply throughout the year.
  – Using hoop houses helped, but the controls where costly and hard to utilize.
• Rose Creek Farms incorporated the latest technologies to automate climate control as well as new trellising systems and hoop house design.
• Rose Creek Farms hosted dozens of small farmers from across the region to demonstrate latest technologies.
• Expanding brewery industry in Tennessee is stimulating demand for malt barley & other grains
• Malt barley could be a great alternative crop for middle Tennessee
  – Better return that feed barley or other small grains
  – Requires intensive care and 1st stage processing
• Batey Farms is leading the development of the crop
  – Trialing new varieties & agronomic practices
  – Developing pilot scale materials and working with breweries to develop new products
• Developing business plan for local processing and supply chain
• Agriculture is difficult to understand and stakeholders don’t have a way to see innovation, conservation, and market creation in one area.
• Tennessee has diverse agricultural production capabilities and it is important to demonstrate multiple approaches.
• Underserved counties need assistance in connecting business opportunities to agriculture.
MODEL FARM PROGRAM

• Create a group of Model Farms strategically located across Tennessee that serve as the “hub” for the farmer network trial sites

• Model Farms serve as:
  – Convening locations for field days, workshops, and demonstrations
  – Repository of information, data, and knowledge on how to get things done in creating new agricultural ventures
  – Capabilities to provide additional services (incubation, back office support, networks, etc.) beyond those provided by farmer network members
3 Model Farms selected in West Tennessee 2018

Goal in 2019 is to select 3 additional Model Farms in Middle & East TN representing livestock, value-added, and specialty crops.
➢ Increases farm yields and decrease costs (e.g.: precision agriculture)
➢ Creates new markets and value-added opportunities
➢ Provides career opportunities for young talent in rural Tennessee & ways of engaging urban markets and talent
➢ Captures value from research expenditures
➢ Provides opportunities for early investment in promising innovations
➢ Offers diversification strategy to protect against market fluctuations
VISION: REGIONAL AG INNOVATION CLUSTERS
"We believe that agriculture needs new innovations and if Tennessee farmers can participate that is a win for our state and we are building a bigger national network to support this growth" – Tom Womack, TN Dept. of Agriculture

- Build with State Departments of Agriculture a culture of risk and experimentation
  - Collaborate across universities, government agencies, commodity groups to “try new things”
- Match new innovations with farmers early and support testing and development
  - Expand farmer network and model farm program
- Regional collaboration & validation
- Agriculture is a different model of economic development
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"No individual has any right to come into the world and go out of it without leaving behind him distinct and legitimate reasons for having passed through it."

George Washington Carver