



*Quarterly Webinar Series*

# Agriculture Technology for Small and Mid-Sized Farms

April 16th, 2025 | 3 PM - 4 PM PT





# Webinar Logistics



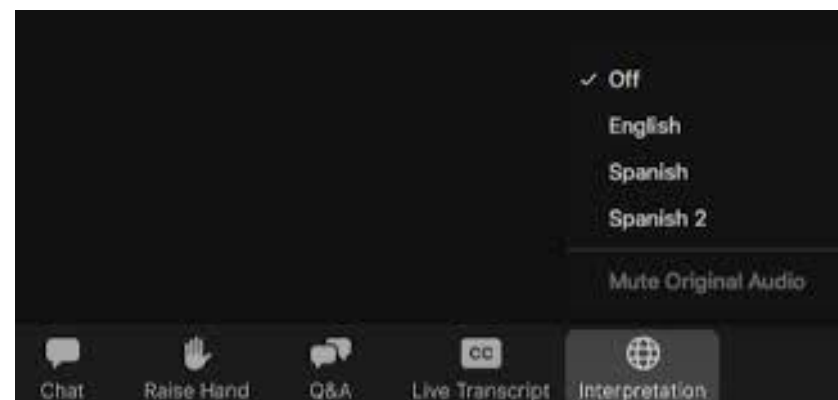
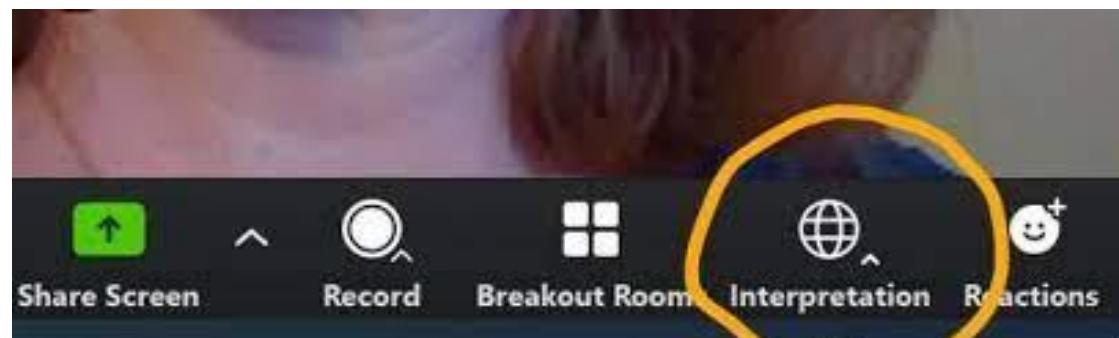
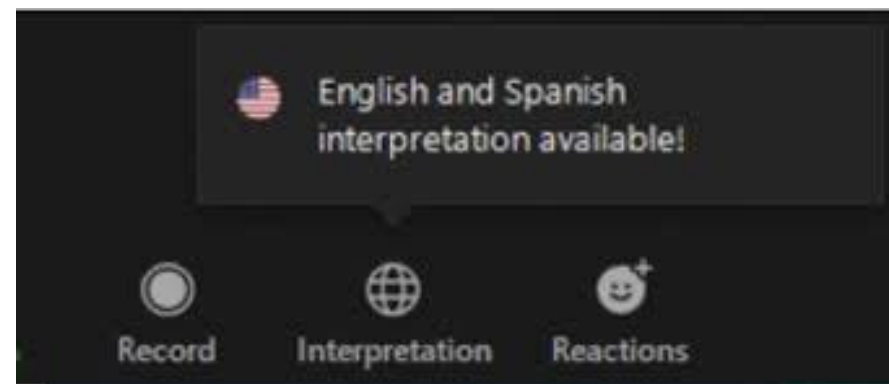
- All webinar materials, including the recording and presentation, will be available on the Center's website ([www.swfoodbiz.org](http://www.swfoodbiz.org)) and shared with all registered.
- We encourage participants to turn their cameras on and use the chat to ask questions, share resources, and connect with other participants.
- There is time for Q/A at the end of the webinar



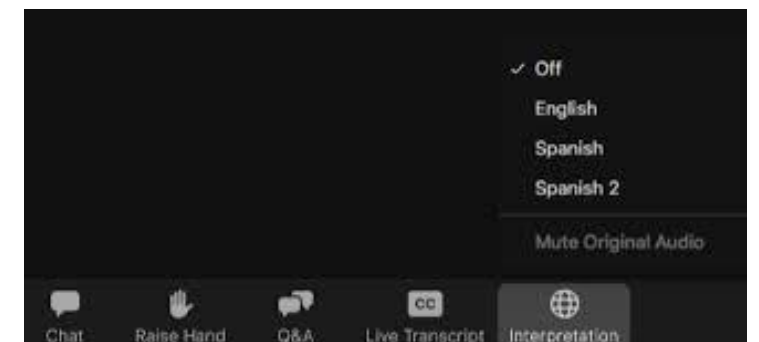
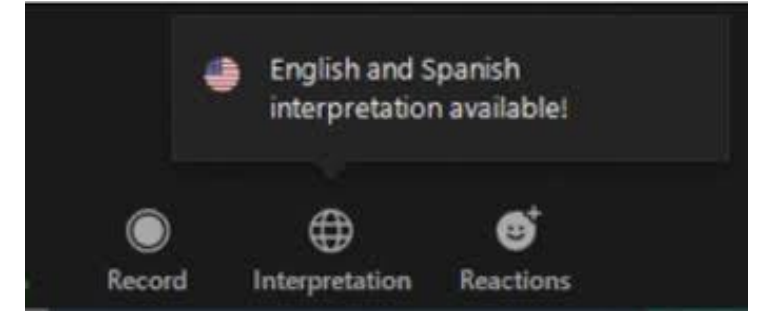




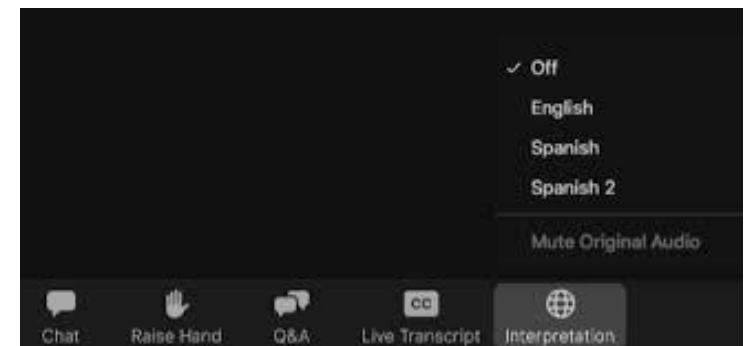
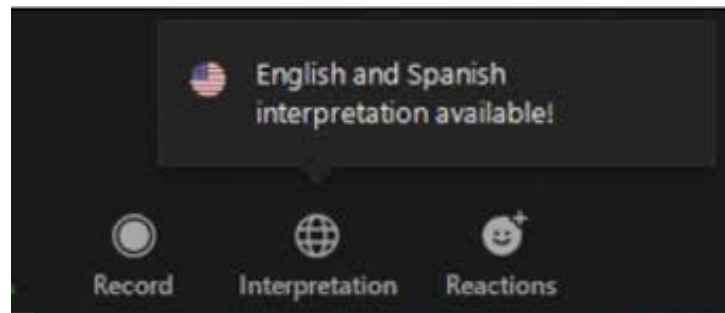
Interpretación al  
español disponible



# Interpretación al español disponible









# The Center's Three Pillars



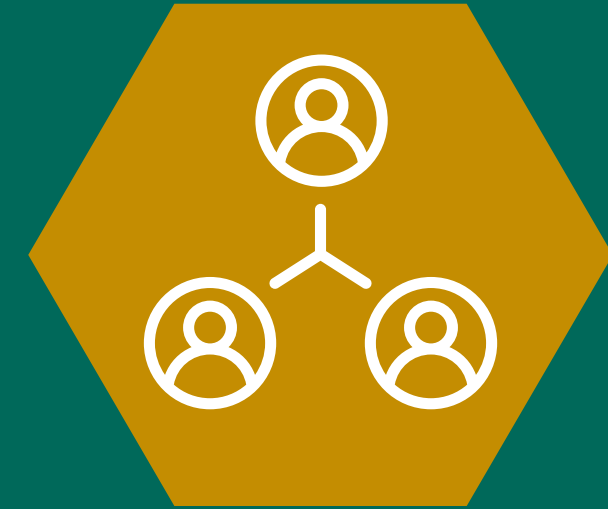
## CAPACITY BUILDING

- We provide financial assistance through business builder subawards to support projects focused on regional needs and businesses that are looking to expand
- We ensure these sub-awards support staff time, business planning activities, software implementations the purchase of special purpose equipment, and other related expenses



## TECHNICAL ASSISTANCE

- We provide technical assistance directly to small- and mid-sized food and farm businesses, as well as food value and supply chain coordination
- We will identify priority areas for technical assistance through the Center's Business Builder workgroup



## COORDINATION

- We coordinate across geographic areas with USDA, other federal, state, colonias, and tribal agencies
- We act as a regional hub for sharing best practices and relevant resources
- We conduct outreach to underserved communities and businesses



# Gabriel Youtsey

## Chief Innovation Officer



Gabriel serves as the Chief Information Officer for UC Agriculture and Natural Resources. He provides leadership to UC ANR's information technology unit to support programmatic, educational, administrative and marketing-oriented projects. Collaborating with colleagues across disciplines and UC locations he implements technology to provide innovative enhancements to support UC ANR's mission and administration.





# Maria Ridoutt-Orozco

Small Farm

Technology Advisor



Maria Ridoutt-Orozco is the Small Farm Technology Advisor at the Community Alliance with Family Farmers. With a passion for sustainable agriculture, environmental stewardship, and community engagement, Maria has traveled around the world to keep on learning about innovative and sustainable solutions. For the past several years, Maria has been based in California, bridging sustainability, agriculture, and community development.





# BreAnn Brown

## Principle Advisor



As a Senior Advisor and Ag Specialist for Larta's Commercialization Assistance Programs, BreAnn Brown brings more than 18 years of leadership and commercialization experience in start-ups and small business in the construction, hospitality and recreation, agriculture/aquaculture, and information technology industries. She was introduced to AgTech and her first start-up, a vision automation company that focused on Agricultural grading and sorting.



**LARTA**  
INSTITUTE





# Innovating the Future of California Agriculture





# University of California Agriculture and Natural Resources

## 110 years of innovation





# Key Challenges

## FOOD INSECURITY

U.S. is a growing net food importer



## GLOBAL COMPETITION

Food production costs and impacts are rising



## CLIMATE CHANGE

Forcing us to rethink how we produce food



## ECONOMIC DISPARITY

Economic stagnation in forgotten communities



## U.S. LEADERSHIP

Manufacturing of AI and biotechnology





# SW Agriculture Challenges

- Land, labor and input cost
- Cost of regulation
- Export competition
- Pest and disease pressure
- Changing consumer demand





# California Agrifood Tech Landscape



Robotics & Automation



Biological Alternatives



AI Precision Agriculture



Regenerative Agriculture



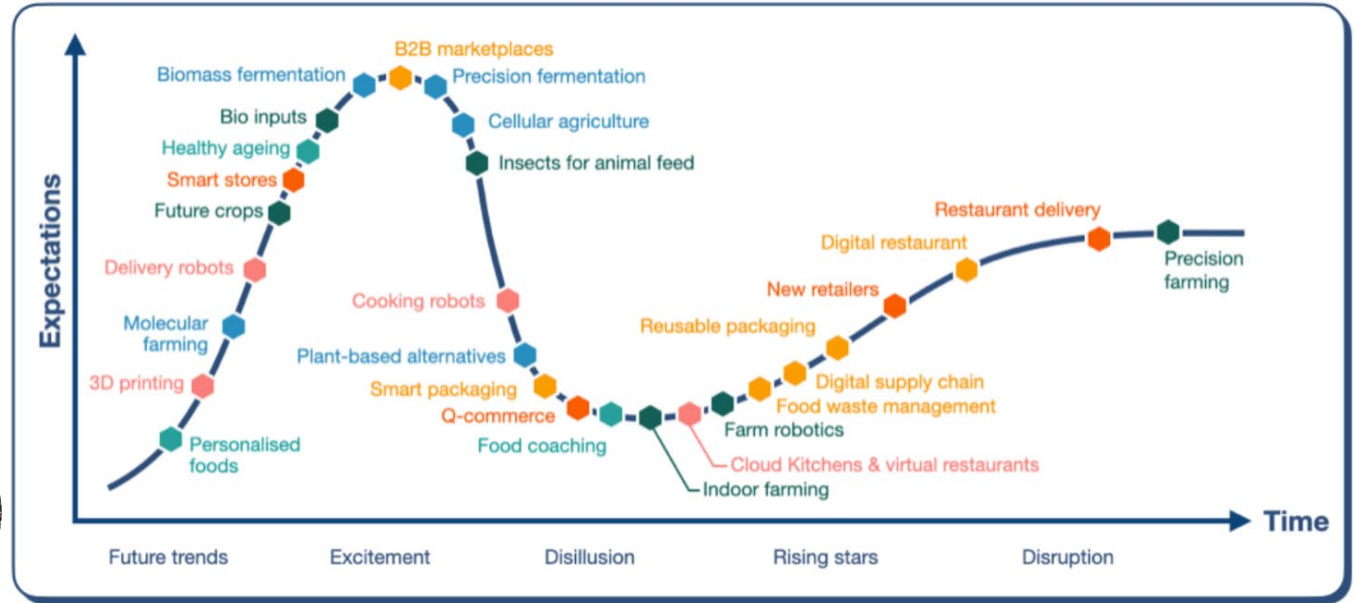
Food as Medicine



Protein Transition



Circular Bioproducts



- Resilient farm
- Food Automation
- Food as medicine
- Instant retail
- Sustainable proteins
- Smart supply chain



# Why it Matters

## INNOVATION GAP



```
graph LR; A[INNOVATION GAP] --- B[Industry needs appropriate tech solutions faster]; A --- C[Emerging solutions are not "farm ready"]; A --- D[Funding R&D for AgTech is hard]; A --- E[Tech must integrate with business and workforce];
```

The diagram illustrates the 'INNOVATION GAP' as a central concept. It is represented by an orange rounded rectangle on the left. Four lines branch out from the right side of this rectangle to four other orange rounded rectangles stacked vertically on the right. These rectangles contain the following text: 'Industry needs appropriate tech solutions faster', 'Emerging solutions are not "farm ready"', 'Funding R&D for AgTech is hard', and 'Tech must integrate with business and workforce'. The background of the slide is split: the left side is dark teal with a white grid pattern, and the right side is light cream.

Industry needs appropriate tech solutions faster

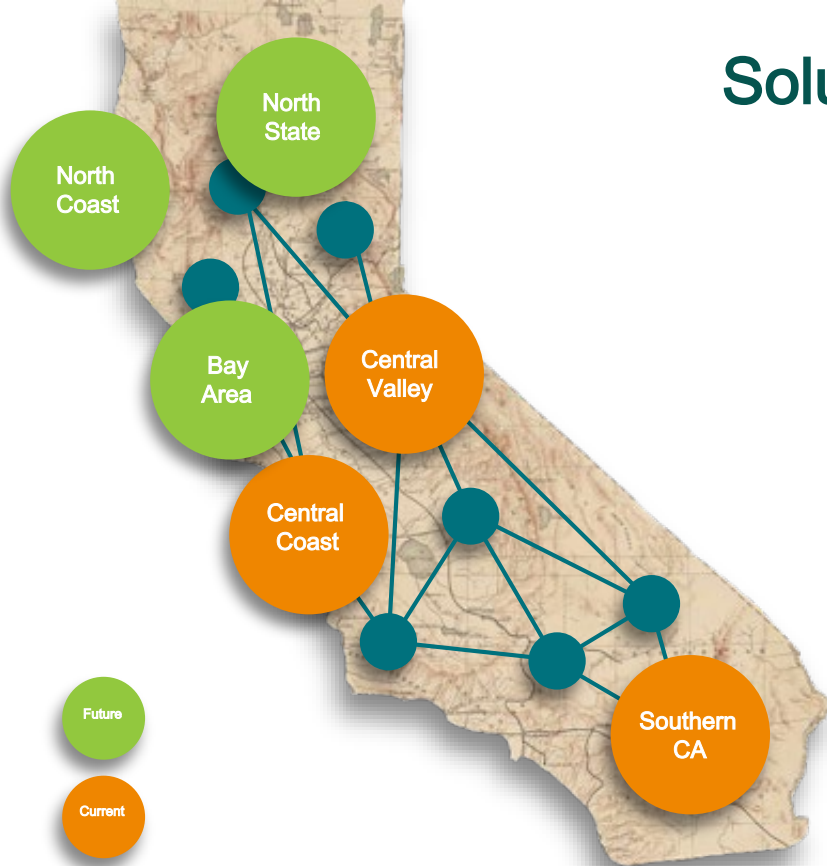
Emerging solutions are not “farm ready”

Funding R&D for AgTech is hard

Tech must integrate with business and workforce



# Solution: Regional AgTech Innovation



- Unified brand, marketing, communications globally
- Global AgTech concierge to bring resources/partners to regions
- Linkage to AgTech National US-wide network
- Cross-regional network navigation services
- Investor network
- Support regional implementation projects to get funded

## NETWORK PARTNERS



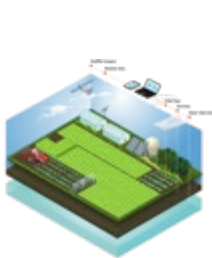


# Solution: Turning Research into Solutions

OFF GROUND ALMOND HARVESTING  
FOR DRAMATIC REDUCTION IN DUST



PRECISION PRESCRIPTION FOR  
IRRIGATION AND NUTRITION



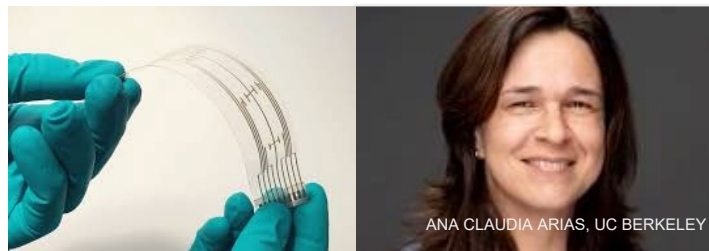
AI AGRONOMIC INSIGHTS  
TO IMPROVE WINEMAKING



STEAM WEEDER TO REPLACE  
CHEMICALS



RAPID SOIL TESTING WITH PRINTABLE SENSORS  
TO MITIGATE NITROUS OXIDE EMISSIONS





# Solution: Demonstrating Tech to Farmers

Smart-spreading drone system



AKSATA



Fully electric autonomous tractor

AMIG



Visionsteer-enabled autonomous shaker

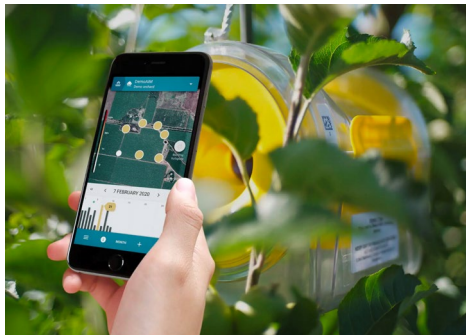
bonsai



Trap AI system for real time pest detection



RapidAIM



Rover to assist in -row crop transportation

gather



THE VINE



# Solution: Innovation Grants for Entrepreneurs

A \$3 million fund offering up to 60 grants of \$50,000 each to startup companies

- Funds used to de-risk tech or relocate
- “Non-dilutive” funding
- Funds what the startup needs to grow and scale their business in California
- Equitably invested across the participating regions



Trap AI system for real time pest detection

RapidAIM



Rover to assist in-row crop transportation

gather



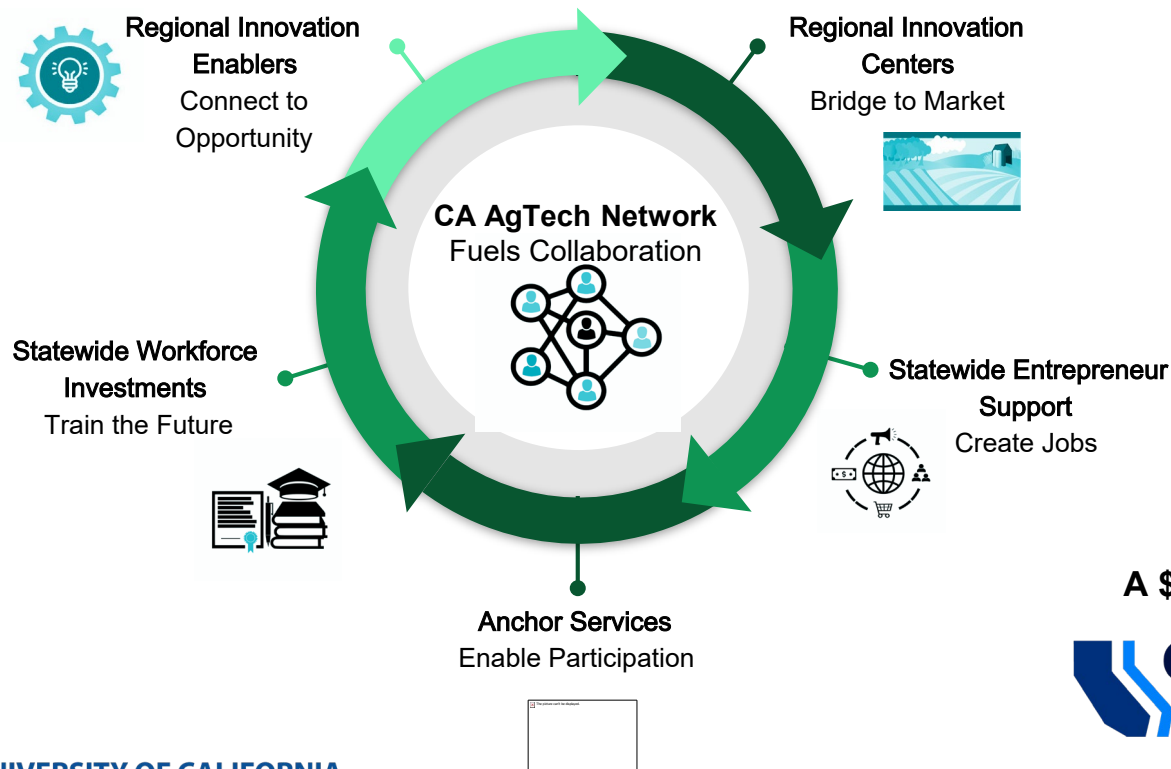


# Solution: Scale unique AgTech workforce programs

- K-14 focused on junior high, high school and community college students
- Practical programs for incumbent ag workforce
- Related to AgTech
- Compliment, not overlap or compete with, existing K-16 programs



# UC ANR is Proposing AgTech Investment in California



**CA AgTech** is a cross-regional innovation ecosystem to accelerate **entrepreneur** growth, cultivate **talent**, and drive **equitable** economic impact, positioning AgTech as a leading **tradable sector** across California.

**A \$30M+ Proposal**







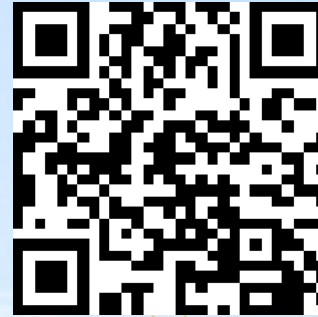
## CONTACT

Gabe Youtsey

Chief Innovation Officer, UCANR

[gdyoutsey@ucanr.edu](mailto:gdyoutsey@ucanr.edu) 

530.750.1314 





# CAFF

COMMUNITY ALLIANCE  
with **FAMILY FARMERS**

## Meet CAFF's Tech Hub Team

small farm  
**TECH HUB**



Elizabeth Vaughan  
Small Farm Tech Hub Senior  
Manager



Maria Ridoutt-Orozco  
Small Farm Technology Advisor



# TOGETHER, WE CAN EMPOWER FAMILY FARMS, HEALTHY LAND & THRIVING LOCAL FOOD SYSTEMS



**We build sustainable food and farming systems through policy advocacy and on-the-ground programs that create more resilient family farms, communities and ecosystems.**







# small farm TECH HUB



## **What is appropriate technology?**

Appropriate technology is a movement encompassing technological choice and application that is small-scale, affordable by locals, decentralized, labor-intensive, energy-efficient, environmentally sustainable, and locally autonomous.

# Small Farm

[smawl fahrm]

*noun*

1. An agricultural enterprise in which the owner is actively engaged in the day-to-day operations; i.e. has their feet on the ground, hands in the soil.
2. A farm whose end-user is known, whose products feed the local community to which the farmers themselves belong.
3. A parcel of productive land at a scale no larger than one person can know intimately by simply walking through it.
4. A farm business whose profits stay in the community

*Synonyms: community-scaled farm, family farm, smallholder farm*



# small farm TECH HUB



Identifying right-fit technologies for the small farm. We help small-scale farmers, food hubs, and farmers markets navigate technological resources & expand market opportunities.

[www.caff.org/TechHub](http://www.caff.org/TechHub)



## Free Consultations!

Provided to CA-based operators seeking to access or expand their use of web-based technologies including e-commerce, social media, marketing, and more!

[REQUEST A CALL](#)



## Resources

From e-commerce platforms to point of sale systems to basic online marketing tips we have you covered! Browse our collection of resources for farmers, markets and other local food professionals.

[ACCESS RESOURCES](#)



## Podcasts, Social Media Groups, Publications

Get connected with others through these online, interactive groups and gain knowledge from the farming community!

[LEARN MORE](#)



## Tech FAQ

Visit our Tech Forum to see common questions asked from the Tech Hub community!

[COMING SOON](#)

[SUBMIT A QUESTION](#)



## Small Farm Innovation Challenge

The Tech Hub is hosting the 2nd Small Farm Innovation Challenge, a contest open to anyone with an idea to help small farms thrive.

[EVENT WEBSITE](#)



## Stay Informed!

Subscribe to CAFF's monthly newsletter for the latest news and resources on small scale agriculture in CA. Make sure to check "Small Farm Tech."

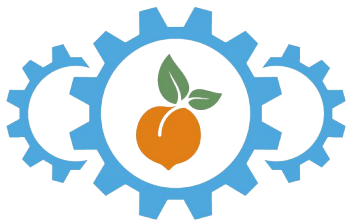
[SUBSCRIBE HERE](#)





# Projects

small farm  
TECH HUB



**F3** FARMS  
FOOD  
FUTURE  
**LOCAL**  
Farms & Food Innovation





# The Small Farm INNOVATION CHALLENGE



Farmers need right-sized technology.

**We need innovators who understand small farms and innovations that empower as many farms as possible. We need solutions that strengthen local food systems. Are you an innovator with bright ideas, crafty hands and a commitment to small farm resilience? We're looking for you!**

**Global competition**

**Cash prizes**

**Opens annually**

**<https://caff.org/innovation-challenge/>**



# Why?

## **Purpose of the Innovation Challenge:**

- Empowering farmers to steer the tech innovation space.
- Highlight that farmers are some of the best problem solvers in the world.
- To encourage farmers with limited resources and capacity to submit their ideas.
- To spread knowledge and spark discussion on what is "appropriate" and right-fit small farm technology.
- To make more resources available to the small farmer.
- Public education on what small farmers need to remain viable.

Sena Daniel Ahiabor, a Sustainable Food Systems Resource Specialist and Post-Harvest Specialist at Tuskegee University, has been awarded the Best DIY Innovation Award for the second time. Ahiabor's latest innovation, the **Ubiquitous Multi-Purpose Farm Use Station**, is an all-in-one workstation designed to assist small-scale



As an avocado and citrus farmer in San Diego County, **Jennifer Bantle** faced a costly dilemma—mulch delivery fees often exceeded the price of the mulch itself, and expensive commercial mulch spreaders were financially out of reach. Determined to find a solution, Bantle developed a **DIY Mulch Blower** that makes spreading mulch on steep hillsides more efficient and affordable. The

# 2025 Innovation Challenge

# Small Farmers Lead the Way in Innovation: 5th Annual Small Farm Innovation Challenge Winners Announced

March 24, 2025

Proving that innovation thrives on a small scale, the winners of the 5th Annual Small Farm Innovation Challenge have introduced groundbreaking solutions to address critical challenges in small-scale agriculture. Hosted



# 2024 Innovation Challenge



<https://caff.org/tech-innovators-lend-creativity-to-small-farms/>







## **SEEKING JUDGES, PARTNERS & INNOVATORS FOR THE 2025-26 CHALLENGE**

The Innovation Challenge is seeking judges, promotional partners, and sponsors for the 6th Small Farm Tech Innovation Challenge.

See chat for link if interested. <https://bit.ly/3YVmDrH>

We are especially seeking out fabrication and prototyping partners!

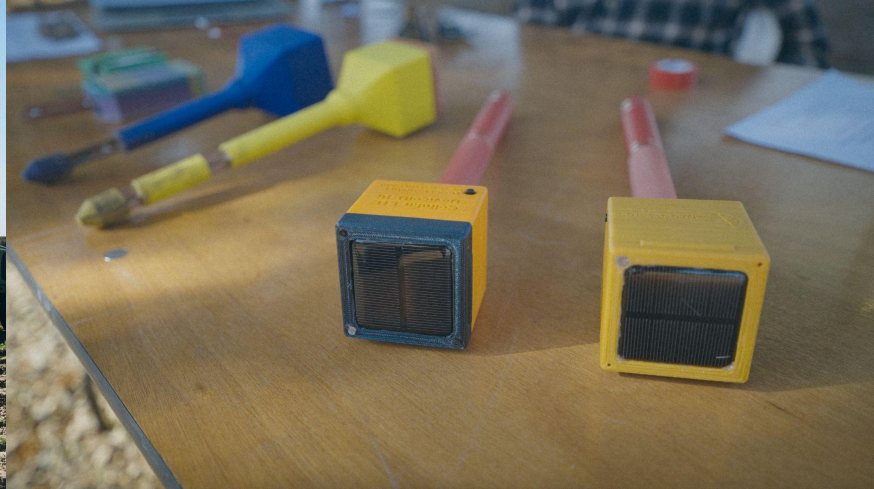
**THIS YEAR'S APPLICATION PORTAL OPENS FALL 2025**

# small farm TECH EXPO

An **in-person** event with a **Winners Lane Exhibit** featuring previous winners of the Challenge

Join us and help inform what small farm technology works for you!

<https://caff.org/tech-expo/>







**CAFF**

**COMMUNITY  
ALLIANCE**

**with**

**FAMILY  
FARMERS**



**2023 Small Farm Tech Expo**  
 Parlier, Fresno county  
 Demo of 15 technologies

# small farm TECH EXPO



**2024 Small Farm Tech Expo**  
 Madera Community College  
 Focus on digital technologies



## Demographics of farmers who provided feedback:

52 years of age

13 years of experience

37% chance of being female

28 acres farm size

Growing vegetables, prunes, or berries

### Top 3 **reasons** farmers **acquire** technology:

1. Reduce labor demand
2. Increase productivity
3. Make heavier tasks easier

### Top 3 **factors** farmers **consider** before buying new technology:

1. Price
2. Operation costs
3. Functionalities/features

What are you using now to track your farm tasks?  
(check all that apply)

Nothing	36.36%
Pad & pencil	31.82%
Excel or g-sheets	45.45%
Paid subscription or open-source software	0.00%
Other: _____	9.09%

What are the main reasons you adopted / would adopt digital technologies? (check all that apply)

Make admin tasks easier	63.64%
Improve crop quality	59.09%
Efficient use of resources	59.09%

What are the factors that hinder you from using digital technology? (check all that apply)

Lack of knowledge	45.45%
Price	31.82%
Other (please specify) _____	27.27%



**SF - ADAPT**

Small Farm Alliance to Develop  
Appropriate Technology

<https://www.f3local.org/sf-adapt>

Interested in participating?

Fill out our interest form:

[https://forms.gle/VjF7ac5yy  
Bc3RmEd9](https://forms.gle/VjF7ac5yyBc3RmEd9)

**Small Farms Alliance to Develop Appropriate Technology (SF-ADAPT) is a collaborative network dedicated to steering technology development to better serve small- and medium-scale farmers, with a focus on five key California counties: Fresno, Merced, Madera, Tulare, and Kings.**

Co-led by UC ANR and CAFF, the Alliance brings together farmers, ag-tech developers, researchers and community organizations.

Through ongoing communication, planning, and convenings, the Alliance aims to create a more equitable and innovative agricultural landscape in California's Central Valley that benefits small-scale farmers and farm operators.



# Thank you!

**Subscribe** to CAFF's Tech Hub mailing list for future events.

<https://www.caff.org/subscribe-to-our-mailing-list/>

Additional questions? Feel free to reach out!

maria@caff.org



www.caff.org



@famfarms



@caff\_famfarms



@famfarms



youtube.com/CAFFflix



www.caff.org/blog





**LARTA  
INSTITUTE**  
FOR A SUSTAINABLE PLANET

# **Larta's Ag Technology Solutions for the Southwest Regional Food Business Center**

April 16, 2025





Let's feed,  
fuel & heal  
the world.

## Our impact since 1993.

**6,500+**

STARTUPS ASSISTED

**7,000+**

SCIENCE & TECHNOLOGIES  
COMMERCIALIZED

**\$4.9B+**

NON-DILUTE FUNDING RAISED  
BY OUR PORTFOLIO COMPANIES

**\$2.4B+**

PRIVATE INVESTMENT RAISED  
BY OUR PORTFOLIO

**200**

AQUISITIONS OF LARTA  
PORTFOLIO COMPANIES

**26**

IPOs BY LARTA  
PORTFOLIO COMPANIES

## Our impact areas:







x

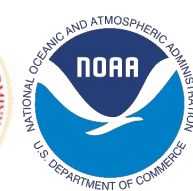


**SBIR • STTR**  
America's Seed Fund  
Powered by SBA



**Tibbetts Award of  
Excellence in  
Support of the  
SBIR/STTR Program**

**Since 2004, we have partnered with government agencies to offer leading Commercialization Accelerator Programs (CAP) and Technical & Business Assistance (TABA).**



### **Commercialization Assistance & Accelerator Programs (CAP)**

Larta has administered SBIR/STTR commercialization assistance & accelerator programs since 2004, for various federal agencies.

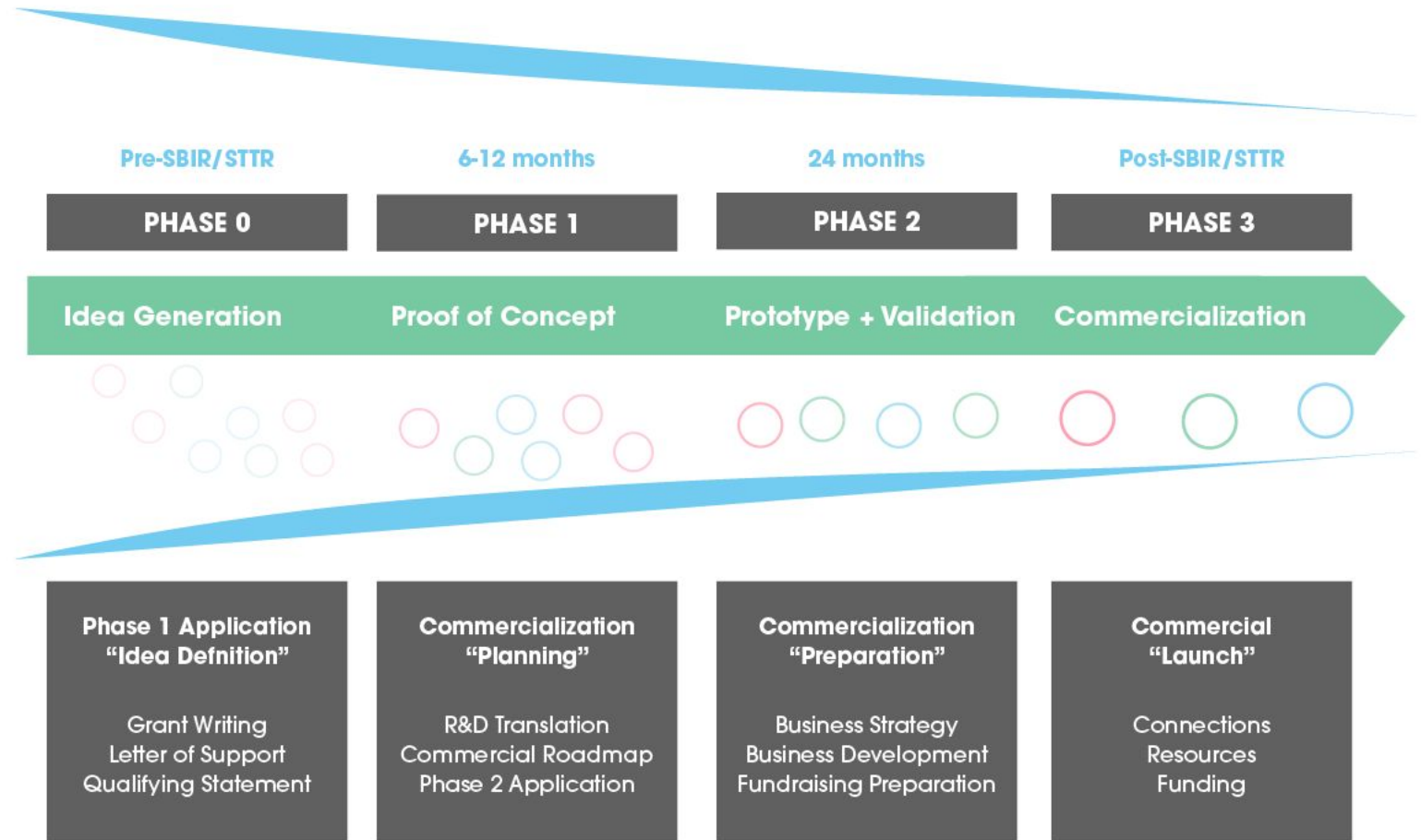
### **Technical & Business Assistance (TABA)**

Larta was instrumental in defining TABA supplementary commercialization funding to complement SBIR/STTR grants.

# Supporting Entrepreneurs across the Innovation Lifecycle



Our process is designed to accelerate transition of R&D into a sustainable enterprise for impact.





# Road to commercialization: Larta's portfolio



Our portfolio of 40+ services (products & tools) for awardees have been designed, refined & proven over 32-years to accelerate translating R&D into sustainable enterprises.



**Larta Principal Advisors:**  
Work 1:1 to deliver strategic value customized to your stage of growth and specific goals.



**125+**  
Highly experienced experts/mentors with real-world experience.



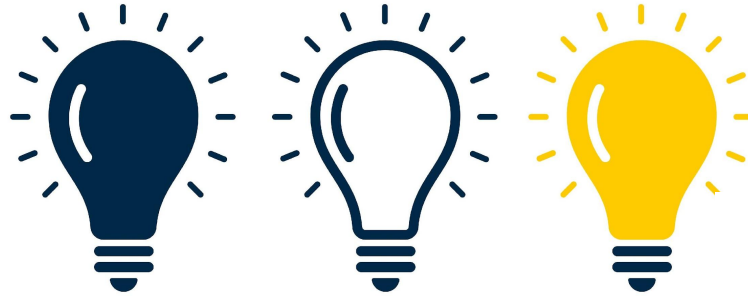
# Ag Technology: Agriculture Lifecycle



Seed to Sprout → Growth & Development → Harvest & Post Harvest



# Larta & the USDA Regional Food Business Centers



# RFBC: Post Harvest Pain Points

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- Cold Storage
- Processing Solutions
- Pathogen Detection & Disinfection
- Distribution
- Food Marketing and Agritourism
- Processing Space & Best Practices
- Market Access
- Accounting Systems
- Business Planning



# Ag Technology: Solutions Vimaan



VIMAAAN

PRODUCTS

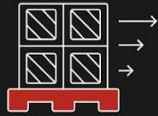
SOLUTIONS

RESOURCES

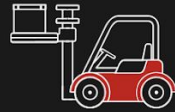
ABOUT VIMAAAN

CONTACT US

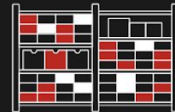
Get A Demo



**WAREHOUSE  
RECEIVING**



**INVENTORY  
PUT AWAY**



**CYCLE  
COUNTING**



**ORDER  
PICKING**



**ORDER  
VALIDATION**

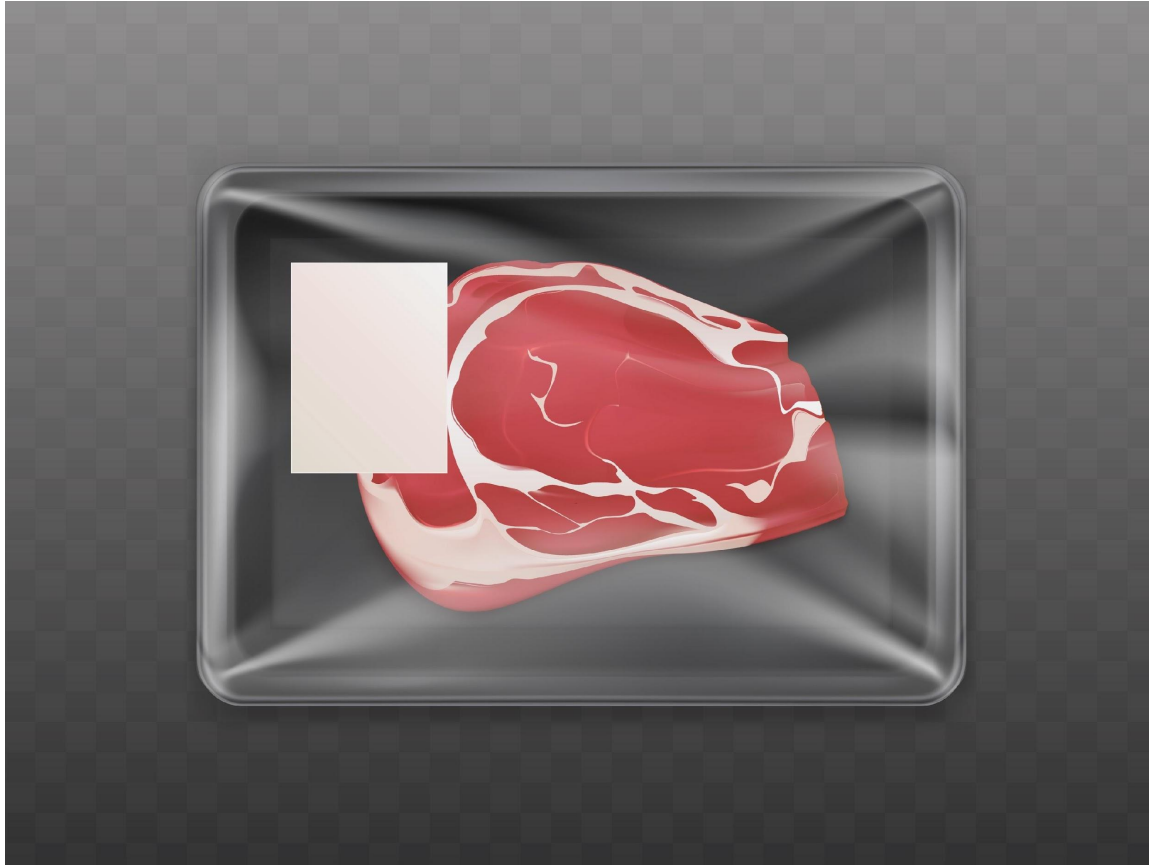


**WAREHOUSE  
SHIPPING**

## Real-Time Computer Vision Solutions Enable 100% Inventory Accuracy and Visibility Across the Entire Warehouse

A WMS is only as good as the data it receives. Bad data in, bad data out. Vimaan customers report nearly instant improvements and typically achieve a return on investment within *months*, not years!

# Ag Technology: Solutions Vimaan





- Share your pain points
- Join the Urban Ag Task Force
- Learn more about Technology

Solutions for Ag





Let's feed,  
fuel & heal  
the world.

**Thank you!**

## Questions? Reach out

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**BREANN BROWN**

Senior Ag Specialist  
[bbrown@larta.org](mailto:bbrown@larta.org)



**TOMMY HUA**

Program Analyst  
[thua@larta.org](mailto:thua@larta.org)



# Q&A





The next webinar in the series will take place on **July 16th!**

Scan the QR code below to learn more about the Southwest Center:



# Thank you!

- **Program Manager: Tracy Celio**  
tbcelio@ucanr.edu  
(530) 236-7360
- **Communications Lead: Grace Kaufman**  
Grace.Kaufman@valleyvision.org



[www.swfoodbiz.org](http://www.swfoodbiz.org)



[info@swfoodbiz.org](mailto:info@swfoodbiz.org)

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