Connecting California to their University for over 100 years

Academics on UC campuses

Local advisors in 50+ California county offices

Highly trusted professionals in their communities

9 research & field innovation hubs statewide

Statewide programs and institutes

- Water, Nutrition, Agronomy, Technology, Pests
- Sustainability, Food Systems, Economics, Youth, Naturalist
Background

- For over 100 years, UC ANR has led innovation in Ag and Natural Resources in California turning science into solutions.
- Under President Napolitano, the UC is expanding the role of innovation by promoting entrepreneurship.
- Glenda Humiston joined as VP of UC ANR and charged ANR to serve as a catalytic leader for innovation and entrepreneurship in agriculture and natural resources.
- Gabe Youtsey appointed as Chief Innovation Officer to drive this strategy.
ANR INNOVATION STRATEGY

Catalyze statewide innovation and entrepreneurship network

- Grow the pipeline of students and innovators
- Leverage UC innovation activity
Innovation goals for California and the World

Enhance economic prosperity for all

Feed a rising population abundant, nutritious food

Sustain our precious environment and natural resources
Catalyze a statewide innovation & entrepreneurship network

Incubation, Acceleration, and Funding partnerships that align academia, industry, and government

Strategic Partnerships will be the foundation of this strategy. No “wheel re-creation

Field, Lab, Kitchen, Maker, Office and other innovation spaces are a crucial part of helping entrepreneurs creating new agriculture and natural resources ventures, especially in rural communities.
Grow the pipeline of innovators

Camps, Competitions and Challenges

Events, Engagement, and Communication
Leverage UC science and innovation activity

Trusted Statewide Network & Research-Based Approach are the cornerstones of UC R’s more than 100-year legacy, and will be a tremendous asset and key differentiator for ANR’s innovation strategy. By leveraging the power of trust relationships innovators get access to farmers, government officials, and a wealth of published material from specialists, advisors, and faculty experts on almost any scientific topic.

Workshops, Consultation, Resources form the backbone of support needed to help entrepreneurs succeed. A variety of expertise, training, tools and other port to get innovators to launch, in whichever direction they go.
THE VINE
THE VERDE INNOVATION NETWORK FOR ENTREPRENEURSHIP

9 Field Innovation hubs
(Research and Extension Centers)
50+ County-based offices
(not pictured)
UC Davis, UC Berkeley, UC Riverside

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

UCMERCED VENTURE LAB

Tulare
Fresno
Madera
Kings
Kern
Merced
San Luis Obispo
Santa Barbara
Los Angeles
Orange
Riverside
San Diego
Imperial

San Joaquin
Stanislaus
Tuolumne
Calaveras
Tehama
Glenn
Shasta
Sierra
Plumas
Amador
Placer
El Dorado
Sacramento
Yolo
Dale
Nevada
Solano
Butte
Yuba
San Francisco
Santa Clara
Santa Cruz
Monterey
Kings
San Benito
San Luis Obispo
Kern
San Bernardino
Riverside

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Kings
San Benito
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San Bernardino
Riverside

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Critical challenges

1. Less farms and less labor
2. Water rights, availability, contamination and regulation
3. Soil health
4. Pests and pesticides
5. Climate
The AgTech toolbox: precision, precision, precision

1. IoT
2. Big Data, analytics, machine learning, AI
3. CRISPR/CAS9 – Genomics
4. Production and post-harvest robotics
5. Plant biotechnology
6. Rural broadband
7. Automation and decision support
Problems with AgTech

1. Lots of point solutions, no integration
2. Heavy marketing, dubious science
3. Startups are coming fast and furious at everyone
4. Silicon and food valleys need one another, but cultures are very different
5. Need patient capital model, VC isn’t enough
6. Accelerators aren’t build for Ag
7. Need a world-class innovation ecosystem to pull it all together.
THE VINE
THE VERDE INNOVATION NETWORK
FOR ENTREPRENEURSHIP

New projects and companies

Acceleration & Co-innovation

Fields, labs, incubators, maker spaces

Outreach, communication, and events

Example partners

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Vision: Precision Breeding “System”

INTEGRATION OF BIOLOGY × ENGINEERING × COMPUTER SCIENCE

Crop Genetic Gain and Resilience

Genomics
Plant, Animal, Human and Microbial
Gene and Trait Associations

Phenomics
Phenotype Reference Standards (Lab & Field)
High Resolution Crop Phenotypes

Sensors
Plant, Root, Soil, Microbial and Environmental

Cloud Computing
Distributed Databases, Remote Access, Scalable
Prediction Algorithms

Data Analytics
High Performance Information Pipelines
AI - Machine Learning

Robotics
Field Deployable, Scalable and Economical

TERRA Enables:
• Crop Breeding
• Field Research
• Farm Management
• Conservation
• Market Connectivity

High Throughput Field Data Acquisition

Phenotype = Genotype × Environment x Management

Crop Physiology
Plant Composition
Environment
Crop Stress

Gene and Trait Associations

Big Data Analysis

Phenomics
Phenotype Reference Standards (Lab & Field)

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Distributed Databases, Remote Access, Scalable
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Uncommon collaboration is key to transformative innovation

Bridging Silicon Valley & CA’s “food valleys” is key to innovation in food and agriculture

A statewide ecosystem that amplifies and connects innovation hubs is needed

The VINE is California’s new innovation network for food and agriculture
Get Involved!
Mentor
Startup
Corporate innovator
Educator
Researcher and extension
Non-profit

TheVINE.io is coming soon
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@gabe.youtsey