



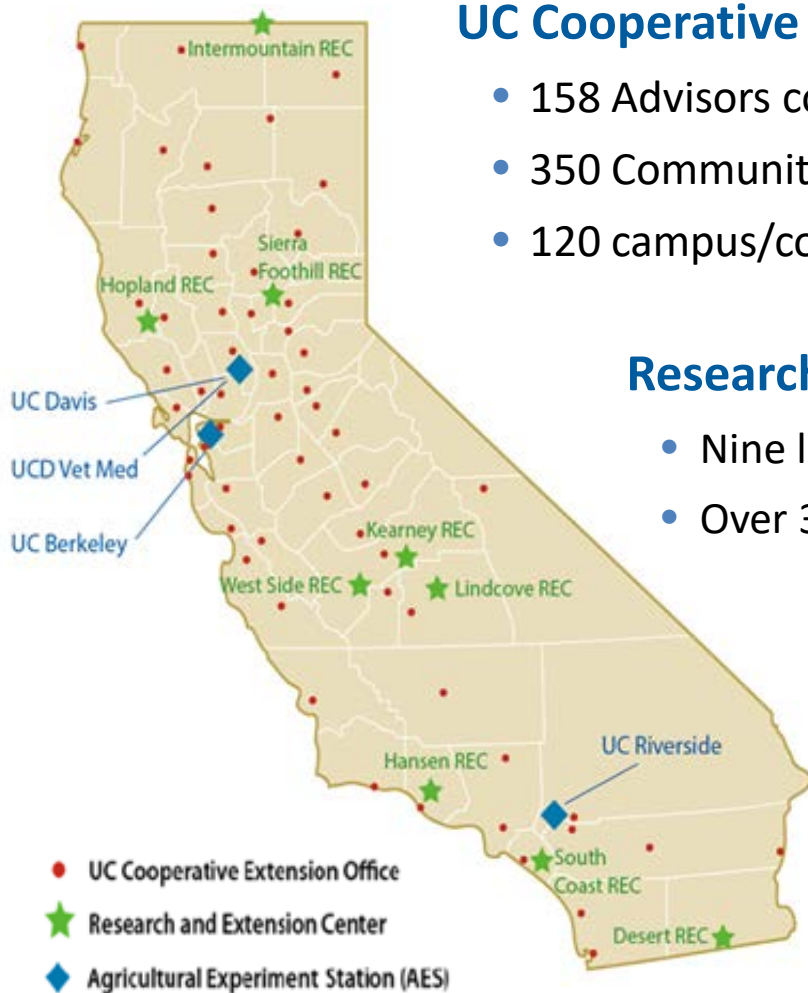
Future of Food

Transformation and Inclusive Economic Development

Dr. Glenda Humiston
Vice President, UC ANR

May 20, 2021

 **UNIVERSITY OF CALIFORNIA**
Agriculture and Natural Resources



UC Cooperative Extension

- 158 Advisors conduct research in local communities
- 350 Community Educators delivering programs
- 120 campus/county-based Specialists

Research and Extension Center System

- Nine locations statewide; 13,000 acres
- Over 375 research projects annually

Agricultural Experiment Station

- 540+ researchers on 3 campuses
- 1,300+ research projects annually

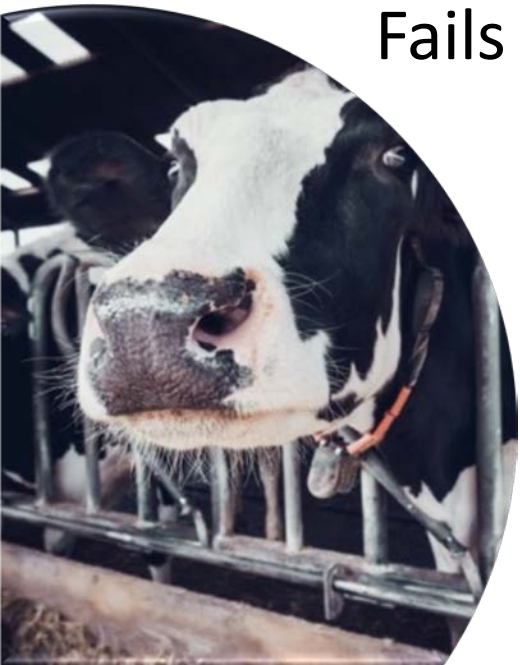
12 Statewide Programs and Institutes



Over 26,500 volunteers contribute 1,144 FTE — the equivalent of \$71 million in donated public service each year

Agriculture and Food Systems Face Huge Challenges

Shifting
Consumer
Preferences &
Supply Chain
Fails



Climate
Change



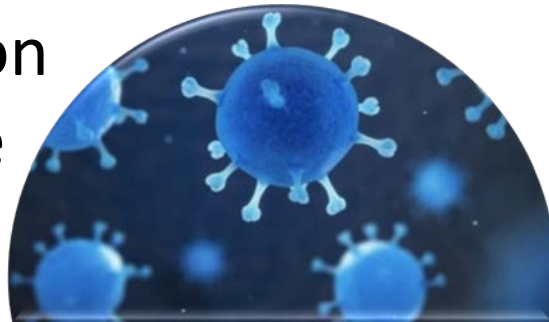
Drought

Less Arable
Land

More &
New
Pests



Substandard
Nutrition
& More
Disease



Lack
of
Labor



Food
Safety
& Food
Waste



Food Supply Chains in Chaos: Empty Shelves, Crops Wasted

Grocery Stores

+27%

March 2020

Food Service
& Drinking

-25%

March 2020



Dumped Milk, Smashed Eggs, Plowed Vegetables: Food Waste of the Pandemic

With restaurants, hotels and schools closed, many of the nation's largest farms are destroying millions of pounds of fresh goods that they can no longer sell.





CALIFORNIA'S WORKING LANDSCAPE

<http://ucanr.edu/WorkingLandscapes>

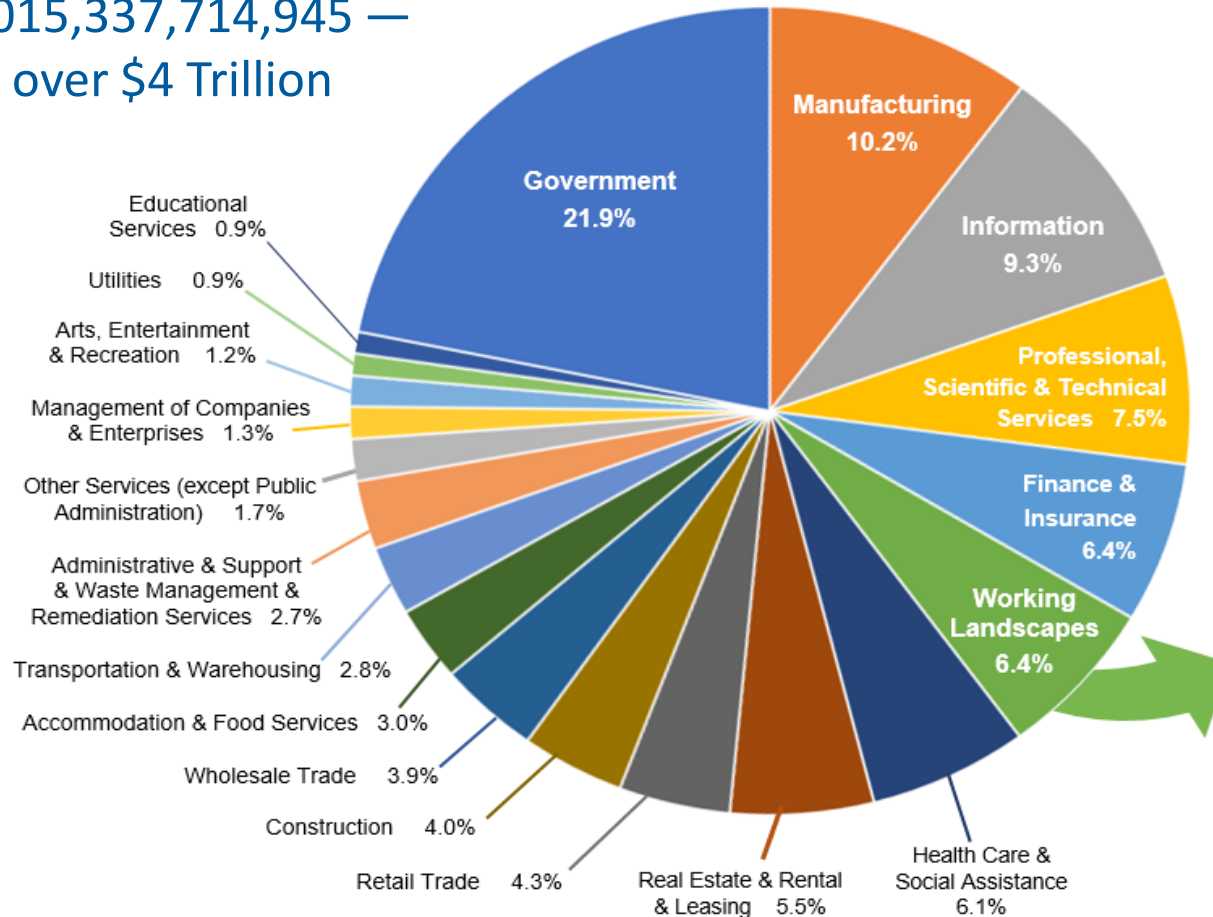
A Key Contributor to the
State's Economic Vitality

NOVEMBER 2019



The 2018 California Economy

\$4,015,337,714,945 —
just over \$4 Trillion



SOURCE: Report by California Community Colleges Centers of Excellence using 2018 data from the North American Industry Classification System (NAICS)

\$333 Billion Sales

Agriculture \$263.5 B

Mining \$32.2 B

Forestry \$23.2 B

Outdoor Recreation \$6.3 B

Renewable Energy \$5.9 B

Fishing \$1.7 B

1.5 Million Jobs

\$85 Billion Earnings

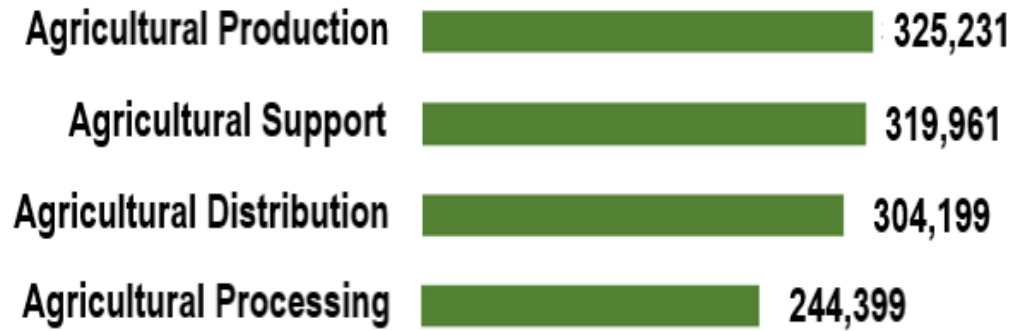


UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources



California's Agricultural Sectors

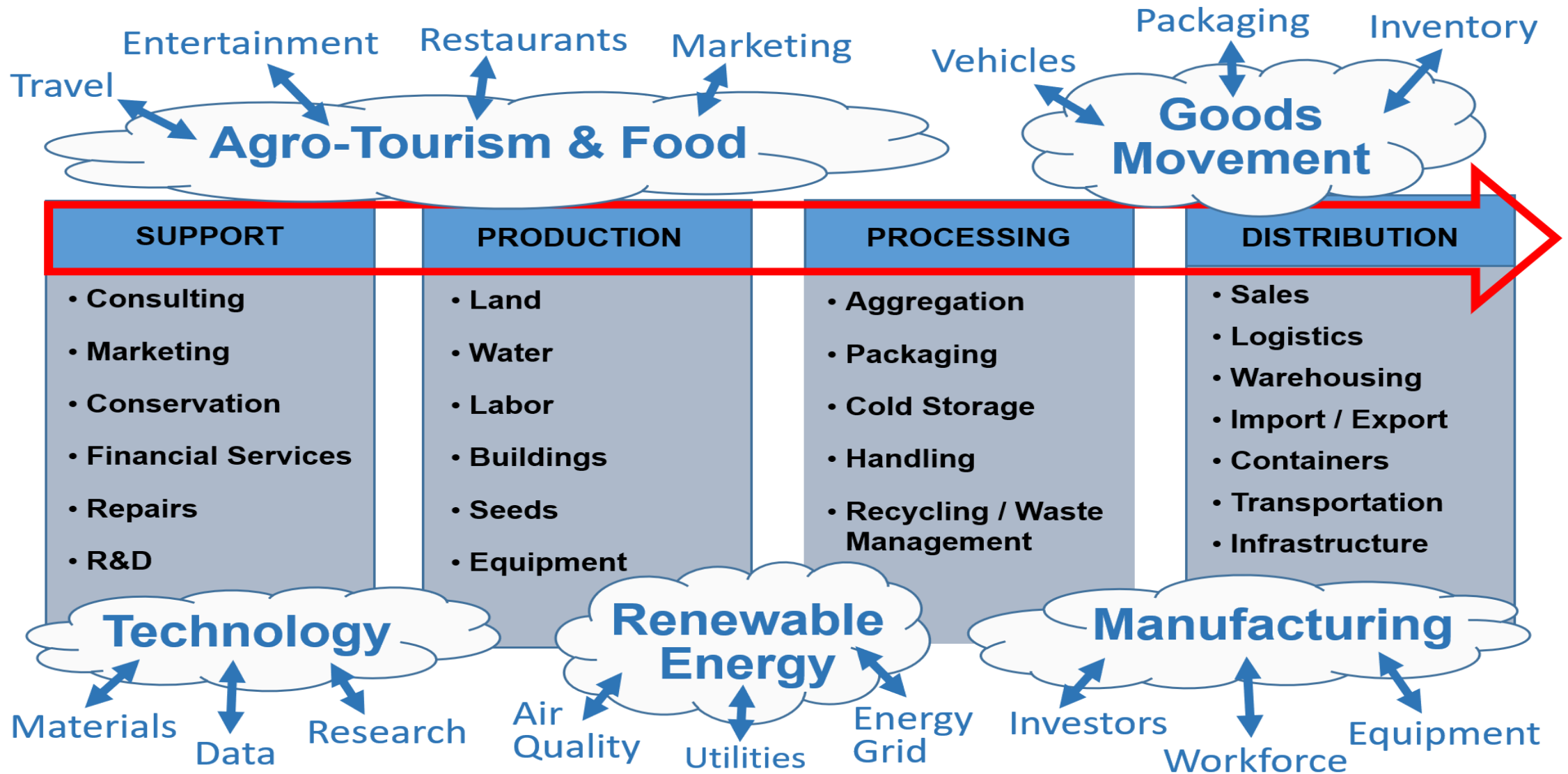
\$264 Billion in Direct Sales in 2018



**Number of
Jobs by
Segment**



**Earnings
by
Segment**



Opportunities for Synergy & Leveraging

Elements of an Economic Ecosystem

WORKFORCE & TRAINING

TRADE / NEW MARKETS

INFRASTRUCTURE

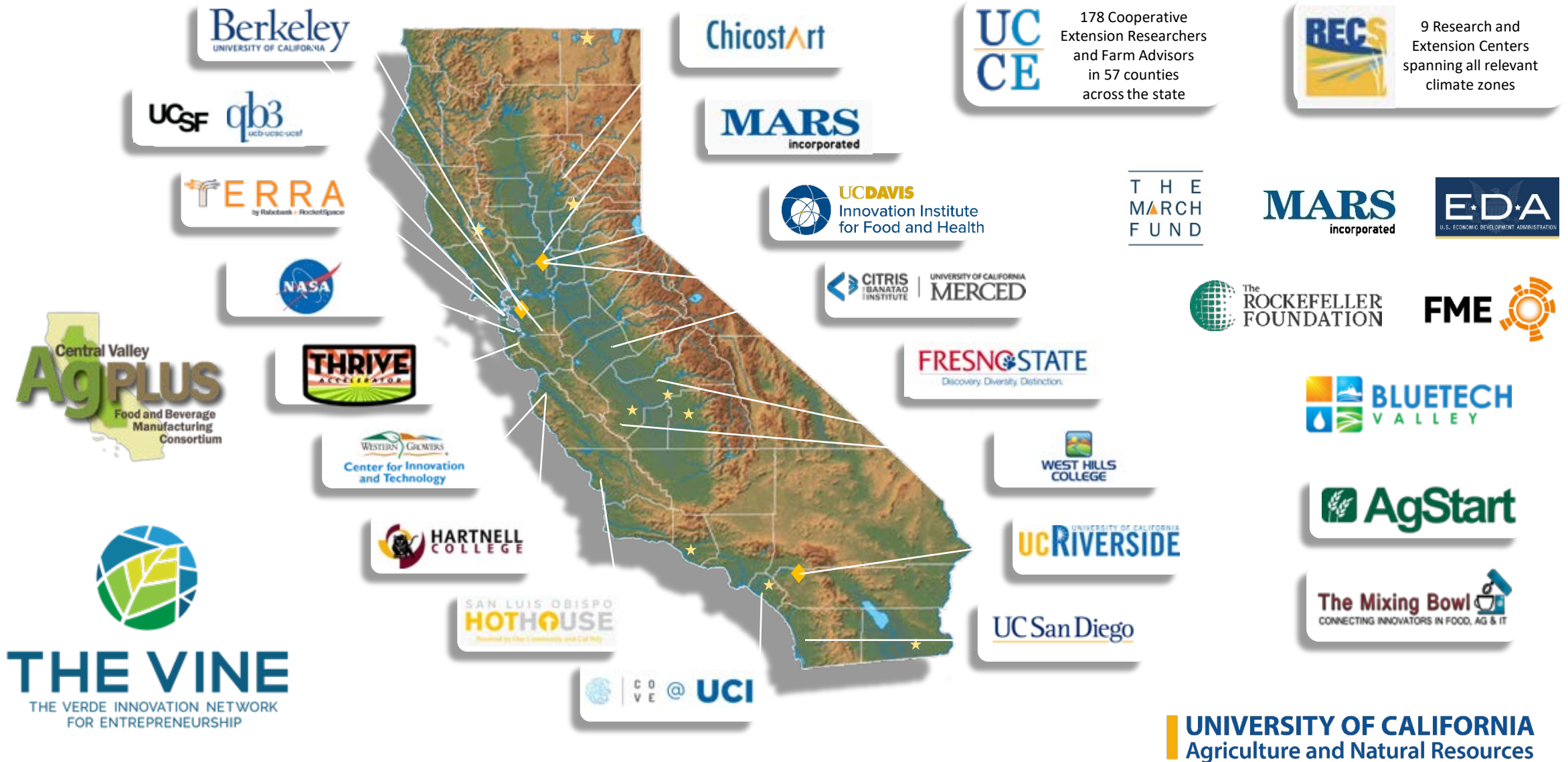
SUPPLY CHAINS

ACCESS TO CAPITAL

RESEARCH AND INNOVATION



Catalyzing Collaboration on Ag + Food + Health Innovation



\$20 Million Grant Received from USDA NIFA and NSF



*...empower the next generation to produce and distribute **sustainable, nutritious food** with fewer resources through transformative **AI technologies***

Molecular Breeding



Agricultural Production



Processing & Distribution



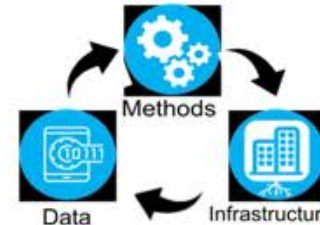
Nutrition



...and the people behind it



...with AI and technology as an enabler

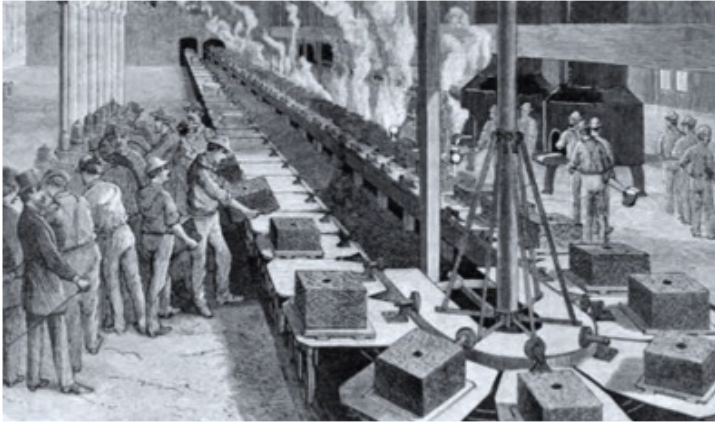




Eureka's Redwood Acres Fairgrounds – an Innovative Business Incubator – Currently the Home of Over 15 Business



Building the Future of Agriculture, Food, Nutrition & Health



Food 1.0 19th Century

- Basic food safety begins
- Early industrialization of product manufacturing
- Scientific understanding of agriculture grows



Food 2.0 20th Century

- Nutrition science constantly changing
- Shelf-life extended & more processing
- Globalization of brands & supply chains
- GMO's, inputs & mechanized agriculture
- Globalization of obesity & diabetes
- Calorie security but NOT nutrition security



Food 3.0 21st Century

- Precision nutrition: food-for-health
- Supply chain integrity & traceability
- Sustainable agricultural production
- Caloric & nutritional security
- Decreased food waste
- Connected farmers & consumers



Glenda Humiston

Vice President

University of California
Agriculture & Natural Resources

glenda.humiston@ucop.edu

510-987-0716

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources