5th California Climate and Agriculture Summit

February 28, 2017

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California Climate & Agriculture Network

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California Climate and Agriculture Summit

February 28th, 2017

Conference at a Glance

The plenary sessions from 8:30 – 10:45am take place in the UC Conference Center Ballroom. The workshop breakout sessions happen in five rooms in the Conference Center and the nearby Alumni Center on the quad just northwest of the Conference Center.

8:00 – 8:30am	**Registration & Light Breakfast**
8:30 – 9:15am (Ballroom)	**Welcome & Keynote Addresses** Karen Ross, Secretary of the California Department of Food and Agriculture Glenda Humiston, Vice President of UC Division of Agriculture and Natural Resources
9:15 – 10:00am (Ballroom)	**Farmer Panel: Biodiversity as a Climate Solution** We will hear from three farmers in dialogue about their implementation of on-farm biodiversity as strategy for both mitigating climate change and enhancing resilience to climate impacts. What are the barriers and challenges to implementing biodiversity? What are the research needs? What policy tools would be helpful? Speakers: Javier Zamora, JSM Organics; Scott Park, Park Farming; Rose Marie Burroughs, Burroughs Family Farms. Moderator: Jo Ann Baumgartner, Wild Farm Alliance
10:00 – 10:30am (Ballroom)	**Climate & Agriculture Policy: Vision & Action** Jeanne Merrill, CalCAN Policy Director
10:30 – 10:45am (Ballroom)	**Leadership Award Presentations** At each Summit, CalCAN recognizes individuals who have demonstrated leadership in climate and agriculture science, policy and practice. It is our honor to announce the following 2017 Climate and Agriculture Leadership Awards: CDFA Secretary Karen Ross Judith Redmond, Full Belly Farm Dr. Kerri Steenwerth, USDA ARS
10:45 – 11:00am	**Break & Poster Session**
11:00 – 12:30pm	**Workshop Session #1**
12:30 – 2:00pm	**Lunch & Poster Session**
2:00 – 3:30pm	**Workshop Session #2**
3:30 – 3:45pm	**Break**
3:45 – 5:15pm	**Workshop Session #3**
5:15 – 6:30pm	**Wine & Cheese Reception**

Workshop Descriptions & Schedule

Note: The three workshop sessions are organized into three tracks:
Policy, Practice and Science.

Workshop Session #1
11:00am – 12:30pm

Envisioning a California Climate & Agriculture Research Agenda *(Policy Track)*
Alumni Center, Allewelt

California agriculture faces numerous challenges in the face of climate change, and research into both climate adaptation and climate mitigation specific to the state's agricultural system is needed. Join in a dialogue to explore the research gaps, the role of programs such as Cooperative Extension, SAREP and existing federal research programs in advancing a research agenda, the need for grower-directed research, and the programs and funding needed to carry out the vision.

Speakers: Glenda Humiston, UC Agriculture and Natural Resources; Tom Tomich, Agriculture Sustainability Institute; Tom Willey, T&D Willey Farms. Moderator: Jeanne Merrill, CalCAN

Does Organic Farming Have an Edge in Sequestering Carbon? *(Science Track)*
Conference Center Room B

What can we learn from high functioning organic systems about improving soil health and mitigating climate change on all kinds of farms? What are scientists and organic farmers learning from each other about how to build soil with practices such as cover cropping, crop rotation and increased biodiversity? Research shows that organically managed plots accumulate more soil organic matter than those managed conventionally, but how do these results translate onto actual organic farms? This session will explore these questions and present the latest science on organic farming and carbon sequestration.

Speakers: Louise Jackson, Department of Land, Air and Water, UC Davis; Jim Durst, Durst Organics; Emma Torbert; Cloverleaf Farms. Moderator: Jane Sooby, CCOF

Ecology and Justice: Integrating Social Equity into the Transition to Climate Smart Agriculture *(Practice Track)*
Conference Center Room A

The vulnerabilities and needs of rural communities and farmworkers and their families must be addressed in efforts to ensure a viable, resilient and ecologically oriented farming future in California. This session provides an overview of the importance of soil health in reducing exposures to pesticides, the importance of farmland conservation in land use and development decisions, the connection between soil health and water quality and quantity, and considerations regarding heat related illness among farm workers. Speakers will also discuss California's approach to climate change, agricultural sustainability and equity through various policies and programs, and opportunities for improvement.

Speakers: Sarah Aird, Californians for Pesticide Reform; Phoebe Seaton, Leadership Counsel for Justice and Accountability; Gail Wadsworth, CA Institute for Rural Studies. Moderator: Janaki Jagannath, Community Alliance for Agroecology

Water We Going To Do? Navigating California Water Policy in a Changing Climate *(Policy Track)*
Alumni Center, AGR Hall

The Sustainable Groundwater Management Act. The Irrigated Lands Regulatory Program. The State Water Efficiency & Enhancement Program. These state policies are the new realities of agricultural water management in 21st-century California. This moderated discussion will cover challenges growers face in complying with the regulations, as well as opportunities to achieve multiple environmental, agronomic, and public health benefits.

Speakers: Max Stevenson, Yolo Flood Control District; Scott Weeks, CDFA; Ruth Dalquist-Willard, Cooperative Extension Fresno County. Moderator: Craig McNamara, Sierra Orchards

Farmer-to-Farmer Soil Health Networks *(Practice Track)*
Conference Center Ballroom

The success of California's climate smart agriculture programs will depend on the involvement of agricultural professionals who can provide outreach and technical assistance. This will be especially important for reaching California's diverse agricultural regions and crop production systems, and for serving small and medium-sized producers. In this session, two teams describe their efforts to provide on-farm demonstration and research: (1) The California Farm Demonstration Network focused on crop rotations and cover cropping, conservation tillage, and innovative grazing systems; (2) The Soil Health Network that supports and promotes practices that improve soil health including cover crops and use of compost.

Speakers: Jeff Borum, NRCS; Darrell Cordova, East Stanislaus RCD board member; Kandi Manhart, Glenn RCD; Steve Gruenwald, Bosque Verde. Moderator: Dave Runsten, CAFF

Workshop Session #2
2:00 – 3:30pm

Healthy Soils: New State and Federal Incentives *(Policy Track)*
Alumni Center, AGR Hall

CDFA has a new Healthy Soils Program, part of California's efforts to increase carbon storage in soils and reduce greenhouse gas emissions. USDA has its Climate Change Building Blocks, focused on incentivizing practices that reduce GHG emissions and improve soil health. California has also passed laws requiring increased diversion of organic waste from landfills and funding to improve and increase compost production. You will learn about the status of these programs and their relationship to each other.

Speakers: Geetika Joshi, CDFA; Alan Forkey, NRCS USDA; Neil Edgar, Compost Coalition. Moderator: David Gates, Ridge Vineyards

To Till or Not To Till, That is the Question *(Practice Track)*
Conference Center Room A

There has been a lot of attention paid to the potential value of reduced tillage for increasing soil carbon sequestration. Some farms are using reduced tillage techniques successfully and seeing improvements in yields and soil health, and others are struggling with the challenges of weed and disease management and other practical barriers. What does the science say about the connection between tillage, soil health, nutrient cycling and carbon storage? What are the practical and agronomic considerations related to tillage?

Speakers: Eric Brennan, USDA ARS; David Smart, UC Cooperative Extension, Napa; Paul Muller, Full Belly Farm. Moderator: Andrea Davis-Cetina, Quarter Acre Farm

The Potential of Biochar as a Climate Tool *(Science Track)*
Conference Center Room B

Among California's environmental challenges are climate change, water scarcity, and forest fire threats associated with millions of dead trees caused by the drought and its related bark beetle infestation. You will get an overview of the current science on the potential of biochar production to address these challenges, and hear about an on-farm example of biochar use at a commercial egg production operation.

Speakers: David Morell, SEC/Biochar Initiative; Sanjai Parikh, Department of Land, Air and Water, UC Davis; Mike Weber, Weber Family Farms. Moderator: Garrett Liles, Chico State University

Net Energy Metering & What It Means for Farmers *(Practice Track)*
Alumni Center, Allewelt

Every year, more California growers install renewable energy to save money and reduce emissions. The state incentivizes on-farm solar, wind, and bioenergy through the Net Energy Metering (NEM) program. The program is evolving, with new challenges and new opportunities, including NEM Aggregation—a new program crafted especially for agriculture. Learn from producers and a solar industry expert about their experiences with on-farm renewable energy projects and programs.

Speakers: Kevin Flanagan, ThinkWire Energy Services; Don Cameron, Terra Nova Ranch Inc.; Sallie Calhoun, Paicines Ranch. Moderator: Beth Smoker, Food & Agriculture Policy Consultant

Lightning Talks *(all tracks)*
Conference Center Ballroom

This session will feature a smorgasbord of innovations in the arena of sustainable agriculture and climate change. Speakers will present their projects using short, compelling "lightning talks" designed to inspire and communicate their core ideas.

Moderator: Dave Henson, Occidental Arts & Ecology Center

Metagenomics — Metagenomics is a modern DNA-based assay that allows a quick, affordable snapshot of the microbial communities present in soil and offers the capability to understand not only who is living in the soil, but what functions those inhabitants perform. *Speaker: Jenna Lang, Trace Genomics*

Life Cycle Analysis of a Grassfed Beef Operation — The life cycle analysis of a grass-fed beef operation at TomKat Ranch found fewer greenhouse gas emissions, reduced water use and water pollution, and improved soil health and forage abundance and diversity. *Speaker: Kevin Watt, TomKat Ranch Educational Foundation*

From Local to Global: Leveraging the Case of California to the Global Scale — California is being used as a case study globally of how countries and regions create a policy enabling environment for climate smart agriculture. *Speaker: Josette Lewis, UC Davis World Food Center*

Citizen Science Protocol — The Citizen Science Protocol is designed to empower producer communities, supporting them in understanding their own soil-based carbon-cycle-assessment of their regionally produced goods. *Speaker: Kelsey Brewer, Department of Plant Sciences, UC Davis*

Low Interest Loans for On-Farm Conservation — Low interest loans are one creative financing tool for funding on-farm conservation practices. Learn about a pilot project of California FarmLink and the Santa Cruz RCD who are using pooled investment funds to serve groups of growers. *Speaker: Ali Robinson, FarmLink*

Purple Sulfur Bacteria Manure Lagoon System — This system provides an alternative dairy manure management method using natural phototrophic "red water" lagoon systems with lower levels of odor and polluting gases, and with no detectible presence of methane-producing bacteria. *Speaker: Gary Wegner, Natural Aeration Inc.*

Almond Orchard Waste as a Resource — As an alternative to incinerating almond orchard tree waste or, even worse, open air burning, whole tree removal by grinding and incorporating the chips into soil can provide soil building benefits. *Speaker: Brent Holtz, UC Cooperative Extension*

Workshop Session #3
3:45 – 5:15pm

Dairy Methane Reduction: Opportunities & Challenges *(Practice Track)*
Conference Center Room A

Dairies are responsible for about half of California's methane emissions, through both enteric fermentation (cow burps and farts) and stored manure. California regulators plan to require significant methane emissions reductions on dairies, and legislators have set aside tens of millions of dollars for incentives to tackle this issue. Though much of the state's focus has been on capturing methane from manure lagoons with anaerobic digesters, there is a larger suite of methane-reducing management practices available. You will hear about alternatives to digesters including dry manure management techniques and pasture-based systems that can be employed to reduce dairy methane emissions across the diversity of California dairy operations.

Speakers: Stacey Sullivan, Sustainable Conservation; Steve Zicari, Department of Biological and Agricultural Engineering, UC Davis; Jake Schmitz, Organic Valley. Moderator: Mike Griffin, Organic Valley

The Smart Growth Case for Farmland Conservation *(Policy Track)*
Alumni Center, Allewelt

California has the country's first program aimed at reducing greenhouse gas emissions associated with avoiding the conversion of our finite agricultural lands. The Sustainable Agricultural Lands Conservation Program has funded conservation easements on 33,000 acres of agricultural land since 2015. California is also looking to increase urban in-fill development and address the state's housing crisis. What are the opportunities and challenges for reducing farmland loss in California?

Speakers: Stephen Wheeler, Professor in the Landscape Architecture Program, UC Davis; Andrea Mackenzie, Santa Clara Valley Open Space Authority; Julie Alvis, Deputy Assistant Secretary, California Natural Resources Agency. Moderator: Virginia Jameson, American Farmland Trust

On-Farm Climate Adaptation Decisions: Where Theory Meets Practice *(Practice Track)*
Alumni Center, AGR Hall

California farmers are increasingly faced with the need to adjust management practices to respond to climate change-related threats to production such as water scarcity, extreme weather events and heat patterns, and decreased chill hours. This session focuses on resources and case studies that can help farmers make adaptation decisions and weigh the risks and trade-offs involved. Speakers will explore how climate modeling relates to the practical needs of growers. Participants will engage in an exercise that illustrates the considerations of on-farm adaptation decisions, then discuss ways to improve decision-making.

Speakers: Kripa Jagannathan, Energy and Resources Group, UC Berkeley; Tapan Pathak, Cooperative Extension, UC Merced; David Doll, Cooperative Extension Merced County. Moderator: Carolyn Cook, CDFA

Ecological Benefits of Integrated Crop-Livestock Systems *(Science Track)*
Conference Center Room B

As the science of agriculture and climate change advances, livestock and crop systems are often examined separately. Yet there is great potential for biologically diverse systems to be very resilient, productive, efficient, and to offer climate and other ecosystems benefits such as carbon sequestration, improved soil health, reduction in fossil fuel use and water conservation. This session explores the state of scientific knowledge and research in integrated crop livestock systems in California, as well as a case study on a diversified sheep operation.

Speakers: Amelie Gaudin, Department of Plant Sciences, UC Davis; Rebecca Burgess, Fibershed; Jaime Irwin, Kaos Sheep Outfit. Moderator: Marisa Alcorta, Center for Land-Based Learning

Carbon Farm Planning & Practice *(Practice Track)*
Conference Center Ballroom

A Carbon Farm Plan assesses and quantifies the potential for farms and ranches to sequester carbon and reduce greenhouse gas emissions while supporting a suite of other ecosystem services. Carbon Farm Planning is based on NRCS conservation planning and can include a variety of strategies, including riparian restoration, windbreaks, organic amendments and other time-tested conservation practices. You will learn about the process of Carbon Farm Planning, and hear about how it is being applied in a Napa Valley vineyard operated by the Resource Conservation District and on a sheep ranch in Lassen County.

Speakers: Valerie Minton, Sonoma RCD; Charles Schembre, Napa County RCD; Lani Estill, Bare Ranch, Lassen County. Moderator: Jeff Creque, Carbon Cycle Institute

From 5:15 to 6:30pm, join us for a complimentary reception in the AGR Hall of the Alumni Center.
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The California Climate and Agriculture Network (CalCAN)
is a statewide coalition that advances state and federal policy
to realize the powerful climate solutions offered by sustainable and organic agriculture.

We seek a widespread transition to sustainable and organic agricultural systems
that are increasingly resilient, environmentally sound and healthy, and that provide
climate benefits, protect our natural resources, sustain our food security, provide for
economically vibrant agricultural communities, and maintain our finite agricultural lands.

Coalition members: CCOF, California Farm Link, Center for Food Safety,
Community Alliance with Family Farmers, Ecological Farming Association,
Occidental Arts and Ecology Center, Wild Farm Alliance

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