

Town Hall

2-3 pm, May 15, 2025

- Welcome
- Leadership Update
- Stories from the Field
- Strategic Focus
- ANR in the News
- New Hires
- Other Updates

Chat warmup

Learning about each other:

What are you doing over the long Memorial Day Weekend?



Leadership Update

Vision & News - (10-15 mins)



Stories from the Field

 UNIVERSITY OF CALIFORNIA
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UCCE North Coast Viticulture

Prescribed burn risks to vineyards

Christopher Chen, Ph.D.

UCCE – Integrated Vineyard Systems Advisor
North Coast

Fire Risk in California

An average of $\approx 5,000$ acres burn to wildfire in CA each year (CalFire/ USFS)

$\approx 70,000$ acres of land are burned in a controlled/prescribed manner each year to limit wildfire risk (CalFire/ USFS)

Removing ground litter and fuel source build up is essential to reduce wildfire intensity and frequency

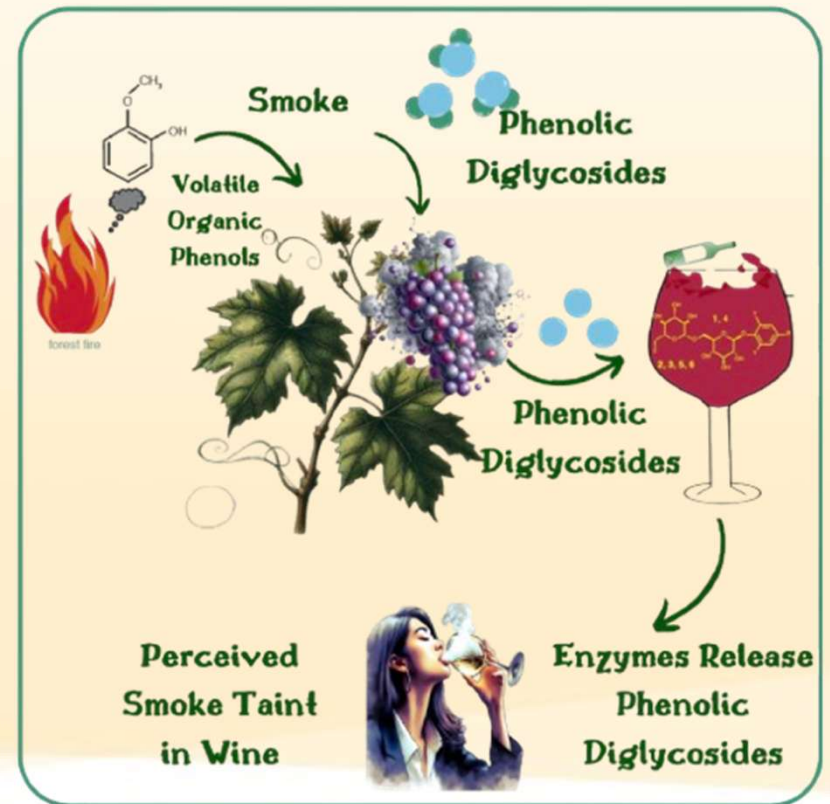


Smoke Taint in Vineyards

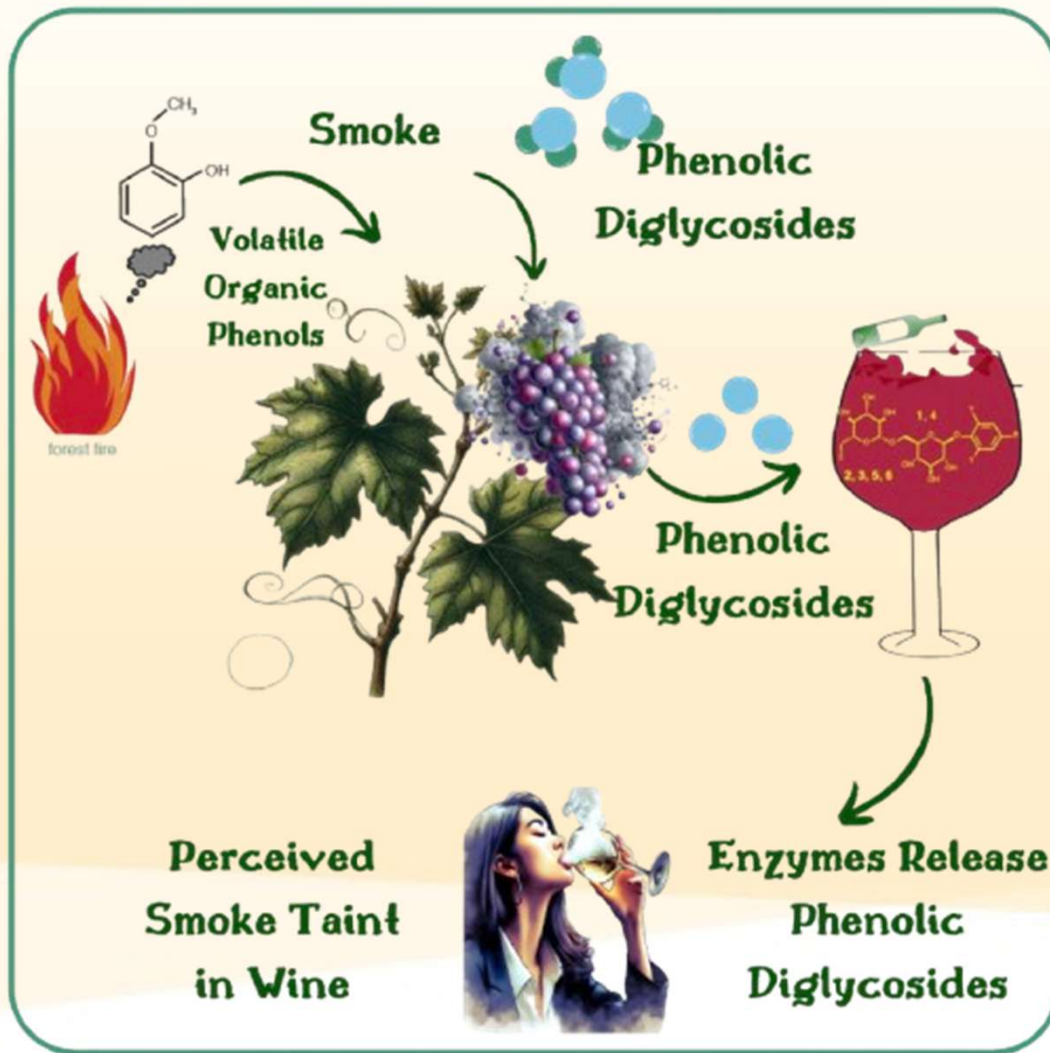
Smoke taint in grapes can result in significant losses to harvestable fruit

- 2020 smoke damage resulted in 165,000-325,000 tons unharvested CA
- Each year, fruit is damaged beyond salvage due to smoke exposure

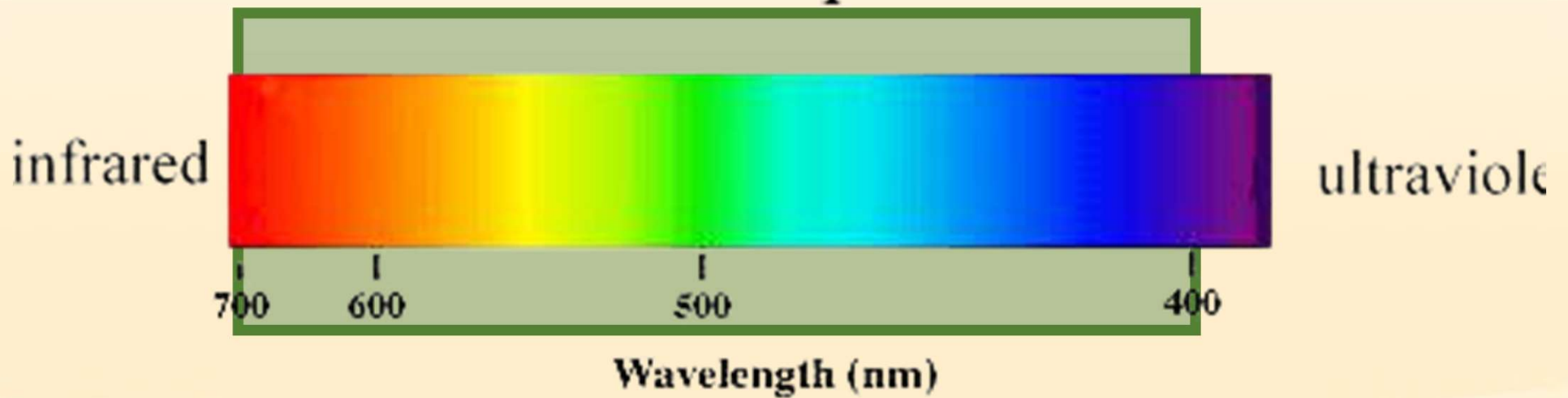
Volatile organic compounds (VOCs) in smoke bind to plant tissue and impart an “ash tray” like flavor to the wine



UCCE Viticulture Handout (2024)



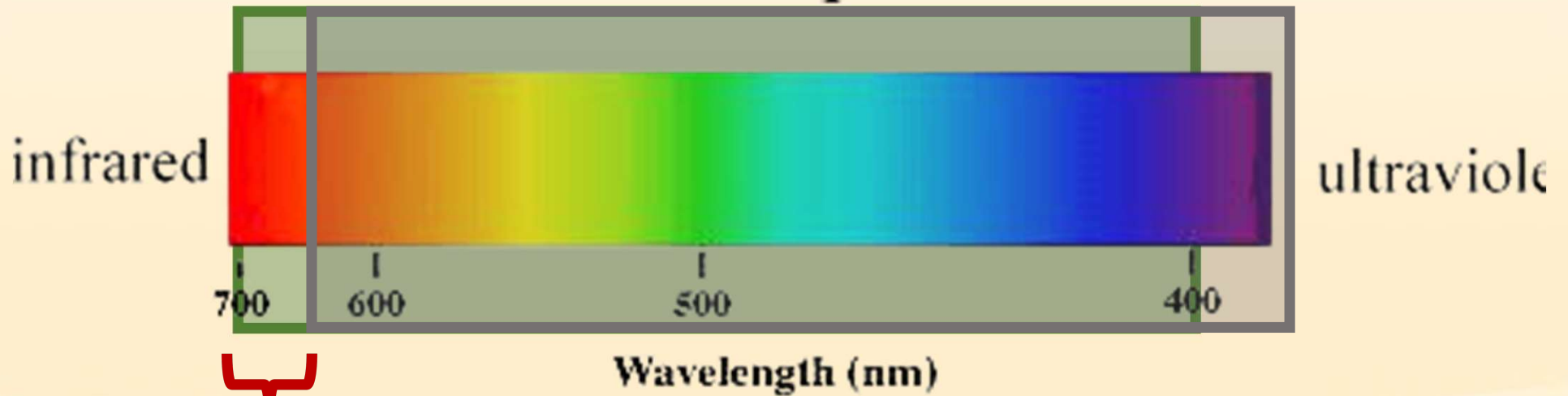
The visible spectrum



Photosynthesis

Wavelengths reduced
from wildfire smoke

The visible spectrum

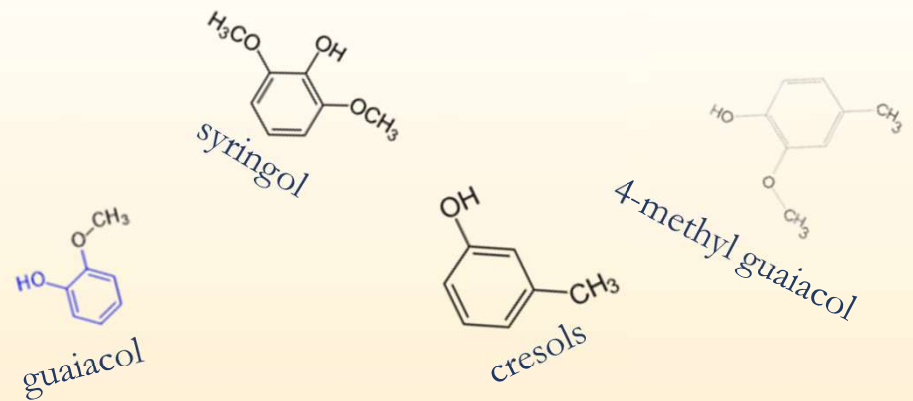


Wavelengths responsible for
most temperature gains

Photosynthesis

Existing Knowledge

- Fuel source lignocellulose content affects VOC production
- Trees and woody species have more lignocellulose than vegetative species
- Increasing distance and time suspended in air affects smoke taint risk in grapevines



Woody and Vegetative
Tissues



Only Vegetative
Tissues

(Sources : Adeboye et al., 2014; Kolb et al., 2013; Tao et al., 2020; Zhu et al., 2022)

Preliminary Study Hopland REC

I've received calls each year from concerned clientele whenever a prescribed burn occurs nearby their vineyard

Actual risk to vineyards needed to be assessed

Preliminary study conducted in Autumn 2024

Grass and forb fuel sources

- Less lignocellulose than hardwoods

PurpleAir Flex™
Smoke Sensor



Before



After

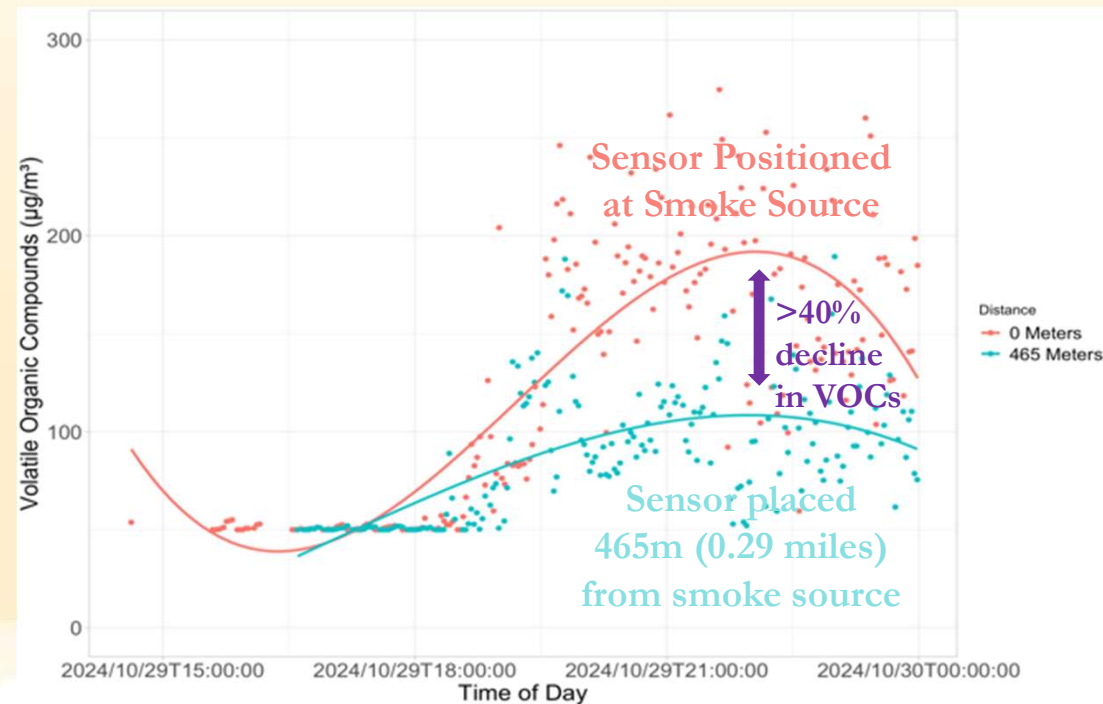
Results – HREC Prescribed Burn

Concentration of VOCs reduced by 31% on average at 465 meters (0.29 miles) away from smoke source

> 40% decline in airborne VOCs at time of maximum smoke output

Still a significant risk to vineyards

Decline in VOCs at <0.5 miles from source of smoke is a useful finding for CA vineyards to assess risk



Impacts to local stakeholders

Helps growers estimate their risk when prescribed burns occur

Allows those burning to better understand the impact of distance and fuel sources

Alleviates some fear of crop damage from fire-safety practices



UC Davis Oakville Research Station (2017)

Future Plans

Seeking funding for larger assessment in 2025-2026 cycle to occur at HREC

Will assess VOC production of various vegetative-species compositions commonly burned

Plan to assess the influence of foliar barriers and quantify the reduction in VOCs by distance from source



Summary

1. Prescribed burns are a valuable tool for limiting the impacts of wildfire
2. Smoke exposure has short-term impacts on photosynthesis and gas exchange in vines and can cause direct fruit damage via smoke-taint
3. Binding of volatile organic compounds as phenolic diglycosides makes the smoke characteristics stable in the fruit
 - Often these PDs are released by enzymes in the mouth of humans
4. Preliminary work at HREC measured a significant reduction in smoke-carried VOCs at short distances during a prescribed grassland burn event
5. Future work will include a better assessment of the effect of distance as well as influence of foliar barriers on airborne VOC persistence

Downloadable Presentation

You can find this presentation at:

1. <https://ucanr.edu/sites/chenlab>
2. Speaker Presentations
3. “2025 UC Cooperative Extension” section



References

- Adeboye, P. T., Bettiga, M., & Olsson, L. (2014). The chemical nature of phenolic compounds determines their toxicity and induces distinct physiological responses in *Saccharomyces cerevisiae* in lignocellulose hydrolysates. *AMB Express*, 4(1), 46. <https://doi.org/10.1186/s13568-014-0046-7>
- CALFIRE. (2025). Statistics. California Department of Fire and Forest Protection, Sacramento, CA. <https://www.fire.ca.gov/our-impact/statistics>
- Kolb, M., Schieder, D., Faulstich, M., & Sieber, V. (2013). Analysis of lignocellulose derived phenolic monomers by headspace solid-phase microextraction and gas chromatography. *Journal of Chromatography A*, 1307, 144-157. <https://doi.org/10.1016/j.chroma.2013.07.094>
- Tao, W., Yang, X., Li, Y., Zhu, R., Si, X., Pan, B., & Xing, B. (2020). Components and Persistent Free Radicals in the Volatiles during Pyrolysis of Lignocellulose Biomass. *Environmental Science & Technology*, 54(20), 13274-13281. <https://doi.org/10.1021/acs.est.0c03363>
- Zhu, X., Han, Y., Feng, Y., Cheng, P., Peng, Y., Wang, J., Cai, J., & Chen, Y. (2022). Formation and emission characteristics of intermediate volatile organic compounds (IVOCs) from the combustion of biomass and their cellulose, hemicellulose, and lignin. *Atmospheric Environment*, 286, 119217. <https://doi.org/10.1016/j.atmosenv.2022.119217>



Thank You

Strategic Focus Cultivating Community

**Elizabeth Moon, Director of Workplace
Inclusion & Belonging**

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CULTIVATING COMMUNITY

Principles of Community Focus:

Openness We foster openness through clear communication and a willingness to embrace diverse perspectives, ideas and feedback.

You are Important We recognize that every person at UC ANR is integral to our work, shaping and guiding how we partner with and improve lives within every community across California.

Directions:

- Join a breakout room.
- Each person takes a turn to ask questions from below.
- Each person in the group can answer or pass.
- Share out in Town Hall chat how you felt connecting with your colleagues

Questions:

- Share a valuable resource (book, article, video) that shifted the way you thought about something.
- If you could write a letter to your 18-yr old self, what one piece of advice would you give yourself?
- Share how/why you are doing the job you have now. What part of the job brings you the most professional joy?
- Learn about someone's passion outside of work?
- Share ways on how to practice self care – ways that reenergize and reaffirm the work you are doing

In the Media

- **Daniel Swain** was in [USA Today](#) about federal science policy changes. He spoke with [PPIC](#), [Slate](#) podcast and Science about impact of cuts to NOAA and National Weather Service. He discussed LA fires for [Sierra Club](#)'s new podcast
- **Yana Valachovic** was quoted in a [CalMatters](#) story on home hardening
- **Alison van Eenennaam** told [Time](#) there can be unintended consequences of using genetic engineering to bring back the colossal dire wolf and other extinct animals
- **Maurice Pitesky** told [Knowable Magazine](#) avian influenza is the largest animal disease outbreak we've ever had
- **Tina Saitone**'s study was cited in [Capital Press](#) for finding a single wolf can cost cattle ranchers more than \$160k. **Ken Tate** told [LA Times](#) that every California wolf sampled had eaten cow
- **Rachael Callahan** discussed benefits of agritourism on [MyAgLife](#) podcast

[https://ucanr.edu/News/UC ANR in the news](https://ucanr.edu/News/UC_ANR_in_the_news)



Selina Wang joined the Dave Chang Show podcast to discuss seed oils

New Hires: Welcome to UC ANR

April 15– May 12, 2025

Christian	Banderas	INTERMOUNTAIN REC
Alexis	Carlson	UCCE CONTRA COSTA COUNTY
Nichole	England	UCCE SAN MATEO COUNTY
Kayla Marie	Hettinger	UCCE SAN BERNARDINO COUNTY
Carrie	Hildebrand	UCCE VENTURA COUNTY
Kristy	Lauron	UCCE SAN JOAQUIN COUNTY
Pedro Luis	Ochoa Cendejas	UCCE FRESNO MADERA MCP
Dora	Sun	RESOURCE PLANNING & MANAGEMENT
Molly	Shea	NUTRITION POLICY INSTITUTE
Stepha Krylov	Velednitsky	UCCE CONTRA COSTA COUNTY
Kahla	Wallace	IMM OFFICE OF HR
Crystal	Whitelaw	SUSTAINABLE AG RESEARCH & EDU



Stepha Krylov Velednitsky



Kahla Wallace



Molly Shea

Other Updates

CA 4-H State Field Day – Ryan Cleland

ANR Photo Contest – Ricardo Vela

Giving Day – Scott Brayton

CA 4-H State Field Day 2025

- Annual culminating events for 4-H members
- Serves approximately 700 4-H members
- Largest UC ANR client serving event with no outside partnerships
- Need additional volunteer support
- Evaluators needed for Presentations, Fashion Revue and Interviews
- Wellman Hall, UC Davis Campus
- **Saturday, May 17**
- 8 a.m.



ANR Photo Contest

2025 Theme: “Serving Californians”

Categories:

- Agricultural Landscape – Farm scenes, crops, livestock, and the rural environment
- Nature – Wildlife, water in the environment and natural landscapes
- Urban Landscape – City scenes, street life, and everything urban
- Family and Friends – Celebrate your people
- A Day in the Field – Work-related moments that capture the spirit of what we do

GIVING DAY

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Sacramento County 4-H
May 5 at 10:00 AM · 🌐

🌟 Support Tomorrow's Leaders! 🌟
Join us on UC ANR #GivingDay, May 15-16, and help empower the next generation through the California 4-H Youth Development Program! Your... See more



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You, UC Agriculture & Natural Resources and 5 others · 2 shares

Like Comment Share

UC FARM SMART · Follow
May 5 at 3:00 PM · 🌐

🌱 UC ANR Giving Day is almost here!
May 15-16 | Noon to Noon

Join us for 24 hours of giving to support UC ANR and fuel local solutions to real-world challenges — from sustainable agriculture and climate resilience to healthy living and nutrition. It is thanks to our community's support through generous donations and grants that Farm Smart can continue offering meaningful experiences for both our K-12 students and the wider community.

#GivingDay



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UCCE Master Food Preservers of Sonoma County · Follow
Yesterday at 12:00 PM · 🌐

🕒 Only 2 Days Until #GivingDay! 🌱

We need your support to bring research-based food preservation practices to communities across California. Together, we can reduce food... See more



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Emily Delk · Like Comment Share

UC Master Gardeners of Orange County
May 12 at 7:00 PM · 🌐

🕒 Only 3 Days Until UC ANR #GivingDay! 🌱
Help us sow the seeds of knowledge and grow a greener future! 🌱 Your donation to the UC Master Gardener Program empowers commu... See more



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You and 3 others · 1 comment

Like Comment Share

Make Your Gift!
givingday.ucanr.edu

THANK YOU!

Next Town Hall:
UC ANR Employee Recognition
Monday, June 16, 2025
2-4 p.m.

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