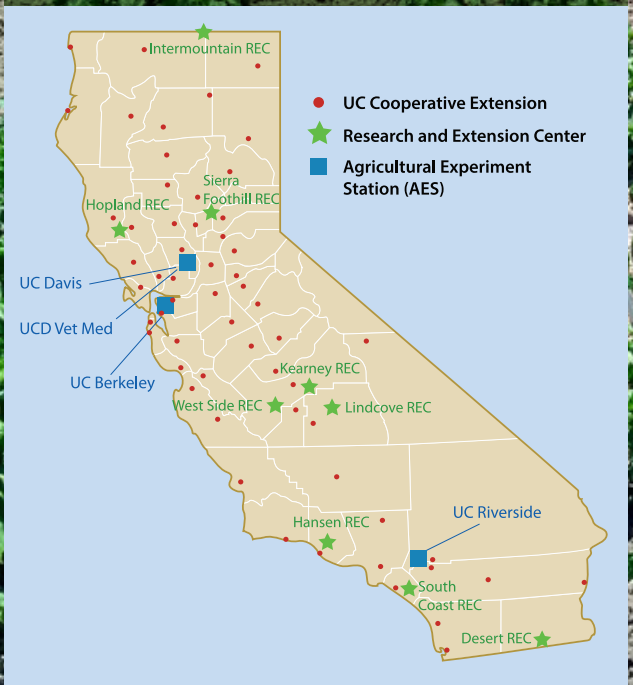
COOPERATIVE EXTENSION/HANSEN AGRICULTURAL RESEARCH AND EXTENSION CENTER

VENTURA COUNTY | 2021
ANNUAL REPORT | 2022

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources

LEVERAGING THE POWER OF UC ANR

True to the mission of the land grant universities, UC Agriculture and Natural Resources connects the power of UC research in agriculture, natural resources, nutrition and youth development with local communities to improve the lives of all Californians.



October 1, 2022

Honorable CEO, Board of Supervisors and Members of the Community of Ventura County,

I am pleased to share with you the accomplishments of the University of California Cooperative Extension (UCCE) in Ventura County and the Hansen Agricultural Research and Extension Center (HAREC) during the 2021-2022 fiscal year. This annual report highlights research and outreach conducted by our advisors, educators, staff and volunteers.

On behalf of the entire team, I would like to take this opportunity to honor Ventura County Supervisor Carmen Ramirez, whom we tragically lost this summer, and express our gratitude for her dedication and service to Ventura County and support of our mission.

Over the past year, we have slowly emerged from the Covid-19 epidemic and resumed many of our in-person activities, while Zoom and hybrid meetings have become commonplace. Research and extension activities continued at a steady pace. A planning committee of UC ANR staff, stakeholders, and consultants met multiple times to discuss and outline the future programs and facilities of the Hansen Agricultural Research and Extension Center (HAREC 2.0). While a new location has yet to be confirmed, negotiations are underway on a site near Camarillo. In the meantime, we continue to lease 14 acres in Santa Paula for field experiments and educational activities.

We are excited to have started working with the County on realizing the goals in the 2020-2040 Ventura County General Plan, which will provide a roadmap for current and new programs of our unit over the next few decades. Our gratitude goes out to Ventura County, UC ANR, the Thelma Hansen Fund and other funding agencies and donors for their financial and logistical support. We also thank our Advisory Board members, members of the HAREC 2.0 Planning Committee, stakeholders, partner organizations, and volunteers who are invaluable in supporting our mission. We look forward to serving the people of Ventura County with science-based solutions in 2022-2023!

Sincerely,

Annemiek Schilder, PhD
Director, University of California Cooperative Extension in Ventura County and the Hansen Agricultural Research and Extension Center

WHAT'S NEW?

New Advisory Board

A new UCCE Ventura County Advisory Board was established to guide our programs, usurping the former Hansen Advisory Board. The new Board consists of the Ventura County Agricultural Commissioner, the CEO of Farm Bureau of Ventura County, representatives of the agricultural community and educational institutions in the County, a UCCE advisor and a local community leader. The Advisory Board improves connectivity to the County and covers all programs of UCCE and HAREC.

Ventura County Agricultural Commissioner Ed Williams

The Ability to Rebuild

In 2021, a historic increase in state funding, championed by Senator John Laird, restored UC ANR's budget to pre-COVID levels and provided $32 million in new ongoing funding for the division. Over the past 20 years, UC ANR had seen its budget dwindle by almost 50% when adjusted for inflation. This budget increase will help us rebuild the footprint that was lost over the years, by hiring 80-90 new academic positions statewide. For Ventura County, this means two long-awaited new advisor positions as well as support for new educator positions.

California Senator John Laird

Electronic Newsletter

UCCE Ventura has launched a monthly electronic newsletter which is sent to a broad range of clientele. Anyone can sign up for it. The newsletter features upcoming UC ANR and partner events in Ventura County, as well as relevant workshops and Zoom meetings in other counties. It also includes news articles and blogs on topics ofww interest. To sign up for the UCCE Ventura County Newsletter, send an email to ceventura@ucanr.edu.

Research Collaboration

In 2020, a memorandum of understanding was signed between UC ANR and California State University Channel Islands (CSUCI) to increase collaboration in research and education for the benefit of Ventura County. In March 2022, CSUCI hosted the first official meeting on its beautiful campus between interested faculty and staff from CSUCI and academics and staff of UCCE Ventura and UC Davis. CSUCI Dean Vandana Kohli and Provost Mitch Avila also attended, as well as Maureen McGuire, CEO of Farm Bureau of Ventura County. A joint seminar series is being planned, beginning on November 18, 2022.

Using novel remote sensing technologies to improve range monitoring

For decades, range scientists have clipped grass on their hands and knees in order to measure the total amount of forage production available for livestock consumption on rangelands. Total production at any one site in a given year varies widely in response to rainfall and temperature as well as soil type, aspect, and topography, making it difficult to obtain accurate estimates across a larger region. That is why Advisor Matthew Shapero started working on a multi-year research project in collaboration with professors and remote sensing scientists at UC Davis, to refine procedures for measuring forage production across the state using satellite imagery.

As more and more satellites come online, they are providing more frequent and higher-resolution imagery. Using sophisticated algorithms and ground-truthed data, Advisor Shapero and his team are evaluating spectral patterns of reflected light to estimate forage biomass totals. Ventura County currently hosts two of 48 sites across the state that are helping to validate this technology by correlating satellite images with real, on-the-ground forage production data.

The goal of the project is to develop capacity for near-real-time forage monitoring using satellites that capture images every 5-8 days with a 15 ft. x 15 ft. pixel resolution. The team anticipates being able to offer a smart-phone app where ranchers, property owners, and agency personnel can access accurate and up-to-date forage production figures throughout the growing season. This work has the potential to transform the way range science is practiced and livestock grazing is managed in California.

Top: Rangeland site near Ventura; the exclosure prohibits cattle from grazing in the research plot.

Bottom: Clipping forage to estimate production in Ojai.

Grazing Intensity and Fire Behavior

As the threat of wildfire deepens, land managers and researchers are examining all available tools that can help reduce the impacts of fire on human and natural environments. One such tool, domestic livestock grazing, has long been implemented to reduce vegetation that accumulates on rangelands annually and serves as "fuel" during wildfire events. Although it is broadly understood that grazing's vegetation removal reduces fire risk, the nature and extent of this reduction has not been well studied. Advisor Matthew Shapero and a team of statewide UCCE researchers are examining this question in detail in order to understand how different levels of grazing intensity in grasslands affects fire behavior.

The study, which will conclude in early 2023, has been implemented at ten prescribed fires in three different ecoregions over the last three wildfire seasons. Grass was manipulated to simulate different grazing intensities (light, moderate, heavy, no grazing) and fire behavior metrics were measured, like flame height, rate of spread, and fire intensity. This work should produce preliminary recommendations for grazing intensities that can be included in management plans or guide management strategies that will increase wildfire resilience in Ventura County.

Top: Studying fire behavior in forage research plots.

Bottom: CalFire video production featuring Matthew Shapero's work.

2021 Wildfire Symposium a Success

Advisor Sabrina Drill was one of the organizers of the Wildfire Symposium in fall 2021. Over the course of three days, several hundred people from across Southern California participated in 12 hours of presentations and discussions with 40 experts about the relationship between climate change and fire, how fire impacts ecosystems and vice versa, and how public agencies and communities are adapting to changing fire regimes.

California Aquatic Invasive Species Website Launched

The California Aquatic Invasive Species website (ucanr.edu/sites/calais/) is an information portal about aquatic invasive species, developed jointly with the Aquatic Invasive Species reporting program of the California Department of Fish and Wildlife. We added an ArcGIS Story Map as an engaging way to share information about this important problem that allows users to see, in one place, up-to date information about the distribution of aquatic invasive species compiled in real time from a number of different local, state, and federal sources. This kind of information can be used by resource agencies and managers to plan restoration activities.

In 2021, Advisor Drill also conducted and published research on the relationship between local and global biodiversity planning, increasing urban resilience through river restoration, engaging underserved communities in conservation, and how citizen science helped us manage invasive species and cope with changes in access and education brought on by the pandemic. She retired from UC ANR at the end of June 2022. We wish her luck in her next venture with the National Extension Climate Initiative, creating a national strategy to build capacity within Extension to increase community resilience to climate change.

Top: Ventura River in Ojai.

Middle: Wildfire climbs uphill.

Bottom: Retirement picnic for Sabrina Drill (left).

Emerging Tree Pests Project

The Emerging Tree Pests project focuses on insects known to be a problem in or a threat to crops and landscapes in Ventura County. The project is a collaboration between UCCE Ventura and the Ventura County Agricultural Commissioner/Weights and Measures (VCACWM), and aims to educate homeowners, citizen scientists, educators, arborists, and utility companies on the most recent science and management options for these pests.

Insect species of interest are invasive shothole borers, first found in Ventura County in 2012, and the goldspotted oak borer, which is known to occur in the Angeles National Forest. Other emerging pests are the Asian citrus psyllid, black fig fly, and the Eucalyptus bronze bug. Species on watch lists that have strong likelihoods of invading California include emerald ash borer and spotted lanternfly.

- In fall 2021, Community Education Specialist Julie Clark worked with the UC California Naturalist program to train 42 Master Gardeners in Ventura, Los Angeles, and Orange Counties to become citizen scientists. Trainees learned to use the online reporting tool iNaturalist to inform resource managers and scientists of emerging tree pests.
- In June 2022, over 6,000 people attended the 2nd Oxnard Insect Festival in Oxnard, where Clark coordinated a popular booth on invasive insects in collaboration with the Master Gardener Invasive Pests Outreach Group and the VCACWM.

Weed and Wildflower Show

The first annual Ventura County Weed and Wildflower Show was held on April 22-24, 2022 in Santa Paula, CA. The three-day event, organized by the Ventura County Weed Management Area team, in which UCCE Ventura also participates, included a lecture about the invasive giant reed *(Arundo donax)*, Agriculture Museum garden tours, iNaturalist trainings, educational exhibits, the 1916 Ventura County plant collection of Romain Young, and an exhibit of 120 live weeds and wildflowers found in Ventura County.

Top: Insects fascinate children and adults alike at the UCCE & Master Gardener booth at the Oxnard Insect Festival (Photo: Randall Musser).

Bottom: Hundreds of visitors attended the Ventura County Weed & Wildflower Show at the Agriculture Museum in Santa Paula (Photo: Maria Solorzano).


Growers like to do experiments with us because they want to learn more too.
– Ben Faber

Diamondback Moth Is Not a Cabbage's Best Friend

The diamondback moth (DBM) is a worldwide pest of cole crops, like cabbage, broccoli, cauliflower and Brussels sprouts. The green larvae, which are about 1/3 inch long, chew holes in the leaves and disrupt head formation in cabbage, broccoli, and cauliflower. They are especially damaging to young plants.

While DBM has been present in Ventura County for a long time, the insect has been on the increase due to year-round cole crop production and development of pesticide resistance, rendering some commonly used insecticides ineffective. Populations with insecticide resistance can move from old to new plantings. Advisor Oleg Daugovish initiated a research project in 2022 to help growers improve management. Preliminary findings were:

- Trapping of adult moths indicated when and where high infestations occurred in the County, which helped with planning of plantings. Insect pressure increased over the summer due to higher temperatures which speed up insect development.
- Some mustard cover crops and wild cruciferous hosts may serve as reservoirs of DBM.
- Seventeen green cabbage cultivars were tested for resistance. At low to moderate insect pressure, some cultivars could tolerate DBM and produced marketable heads. However, at high pressure, none of the cultivars produced satisfactory heads.
- At least two naturally occurring parasitoids were effective in reducing larval viability, thus disrupting the DBM life cycle.
- *Bacillus thuringiensis* (Bt) biocontrol products improved control of DBM when the products were able to reach exposed larvae and pupae.

Top: Evaluation of cabbage cultivars for resistance to diamondback moth.

Left: Diamondback moth larva and adult (photos: Jack Kelly Clark, UC IPM).

Outracing a New Race of a Celery Pathogen

Celery is among the top ten crops in Ventura County. Fusarium yellows is a lethal disease of celery caused by the soilborne fungus *Fusarium oxysporum* f. sp. *apii*. The disease can be managed by planting resistant cultivars or chemical soil fumigation. Multiple races of the pathogen exist. A new strain of the pathogen (race 4) has been discovered in Ventura County that attacks previously resistant cultivars and prefers higher soil temperatures.

Fortunately, new breeding lines show promise against race 4 in field trials; 42 breeding lines from the University of California and private industry are being evaluated in Ventura and Santa Barbara Counties. Advisor Oleg Daugovish is collaborating with plant pathologists and plant breeders from the USDA and UC Riverside in evaluating these field trials, which are funded by the California Celery Board.

Susceptible celery cv. Challenger (left) and resistant breeding line RZ4006 (right) grown in a field with Fusarium oxysporum f. sp. apii race 4.

Charting Development of Charcoal Rot in Strawberries

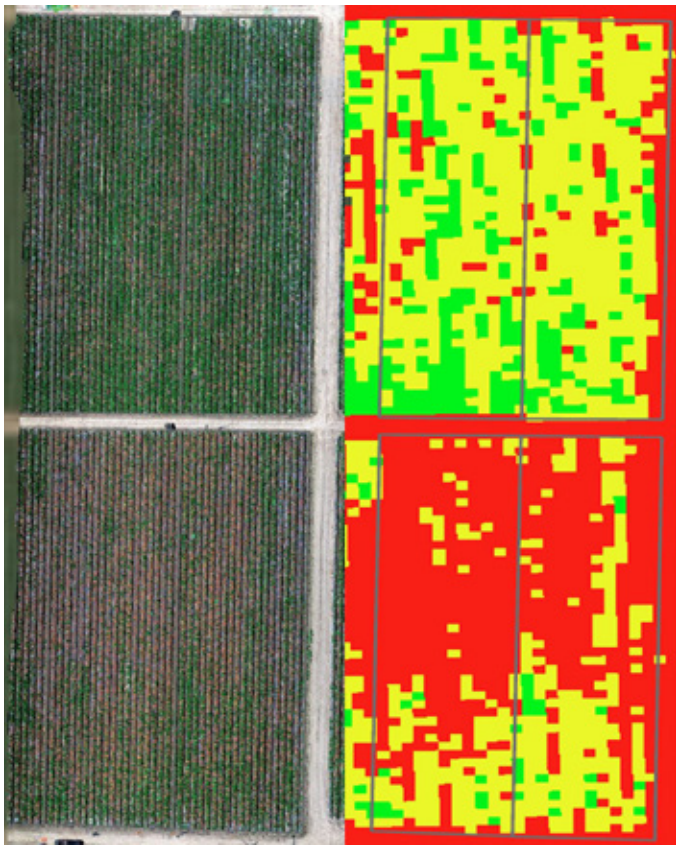
Charcoal rot, caused by the soilborne fungus *Macrophomina phaseolina*, has become prevalent in strawberries in Ventura County in recent years and is a major concern for the strawberry industry. Drought and heat stress hasten disease development and plant death. In collaboration with colleagues at UC Davis and the USDA, Advisor Daugovish assessed how the amount of fungus in the soil affects symptom severity in different cultivars. Symptoms increased with increasing inoculum density, from 0 to 200 colony-forming units per gram of soil, until most plants were dead. Cultivar Mojo was significantly more tolerant than the other cultivars, while Fronteras, currently the top public variety for fall-planted production, was most susceptible. Growing tolerant or resistant varieties is recommended in infested fields.

Oleg Daugovish and Gina Ferrari harvest strawberries in a trial at HAREC. Note plants killed by charcoal rot in the foreground.

Drones Facilitate Disease Assessment in Strawberry Fields

Chris Greer, an IPM advisor based in San Luis Obispo County with a partial assignment in Santa Barbara and Ventura Counties, assisted UC researchers with drone technology to map spatial distribution of soilborne diseases in strawberry fields in Ventura County (www2.ipm.ucanr.edu/highlights/2020/Will_unmanned_aerial_vehicles_replace_inthefield_monitoring/). The drone camera detects green vegetation against contrasting soil using reflected light in the visible and near-infrared range. Images are then converted using the Normalized Difference Vegetation Index (NDVI) to quantify plant canopy and health.

Advisor Greer used drone imagery of strawberry fields to guide and assess the efficacy of variable-rate (precision) fumigation. Soilborne diseases, like Fusarium wilt, are not uniformly distributed in fields. Rather than fumigating the entire field with a single rate of fumigant, the rate was reduced in areas with low disease pressure. Variable-rate fumigation was successful, reducing the total amount of chemical used, with no detrimental effects on plant growth and yield in fields with low to moderate disease pressure.



Left Middle: Area IPM Advisor Greer operating drone in strawberry field.

Left Bottom: Drone used in strawberry research.

Right: Drone images of strawberry fields and NDVI-converted maps for variable rate fumigation trial (red =dead, yellow = stressed, and green = healthy plants).

Ventura County Growers Receive Climate Smart Agriculture Grants

In 2021, the CDFA once again invited applications for the Healthy Soils Program (HSP) and the Statewide Water Efficiency Enhancement Program (SWEEP) to support the adoption of climate-smart agricultural practices. Statewide, 940 HSP grants totaling over $77 million and 1,111 SWEEP grants totaling $123 million were awarded.

Community Education Specialist Nicki Anderson assisted growers and ranchers in applying for these grants in Ventura and Santa Barbara Counties. Three farms in Ventura County received HSP grants, for a total of $196,444. This assistance will go toward the implementation of cover crops, hedgerows, compost, mulch and range planting. Four farms were selected to receive SWEEP funds, totaling $508,767, which will help farmers pay for flow-based sensors, fuel conversion, reduced pumping, improved energy efficiency of pumps and variable frequency drives.

Top: An established hedgerow featuring a mature blue elderberry.

Bottom: Blue elderberry fruit ready for harvest (photo: Sonja Brodt).

Consider Native Blue Elderberries for Your Hedgerows

Hedgerows are rows of trees and shrubs as well as other perennial and annual plants, serving as living fences and windbreaks in the agricultural landscape. Hedgerows provide numerous ecological benefits, such as habitat and food for wildlife, pollen and nectar resources for beneficial insects, and cooling shade. Hedgerows can significantly increase biodiversity in and around agricultural fields.

A popular plant for hedgerows is native Western blue elderberry, *Sambucus nigra* subsp. *caerulea*, which can grow up to 20-30 feet tall and wide (ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=44005). This deciduous tree or large shrub is adapted to hot, dry environments and can provide income from the harvest of its flowers and berries. The fruit has a high phenolic content and can be used for jam, juice, and wine making.

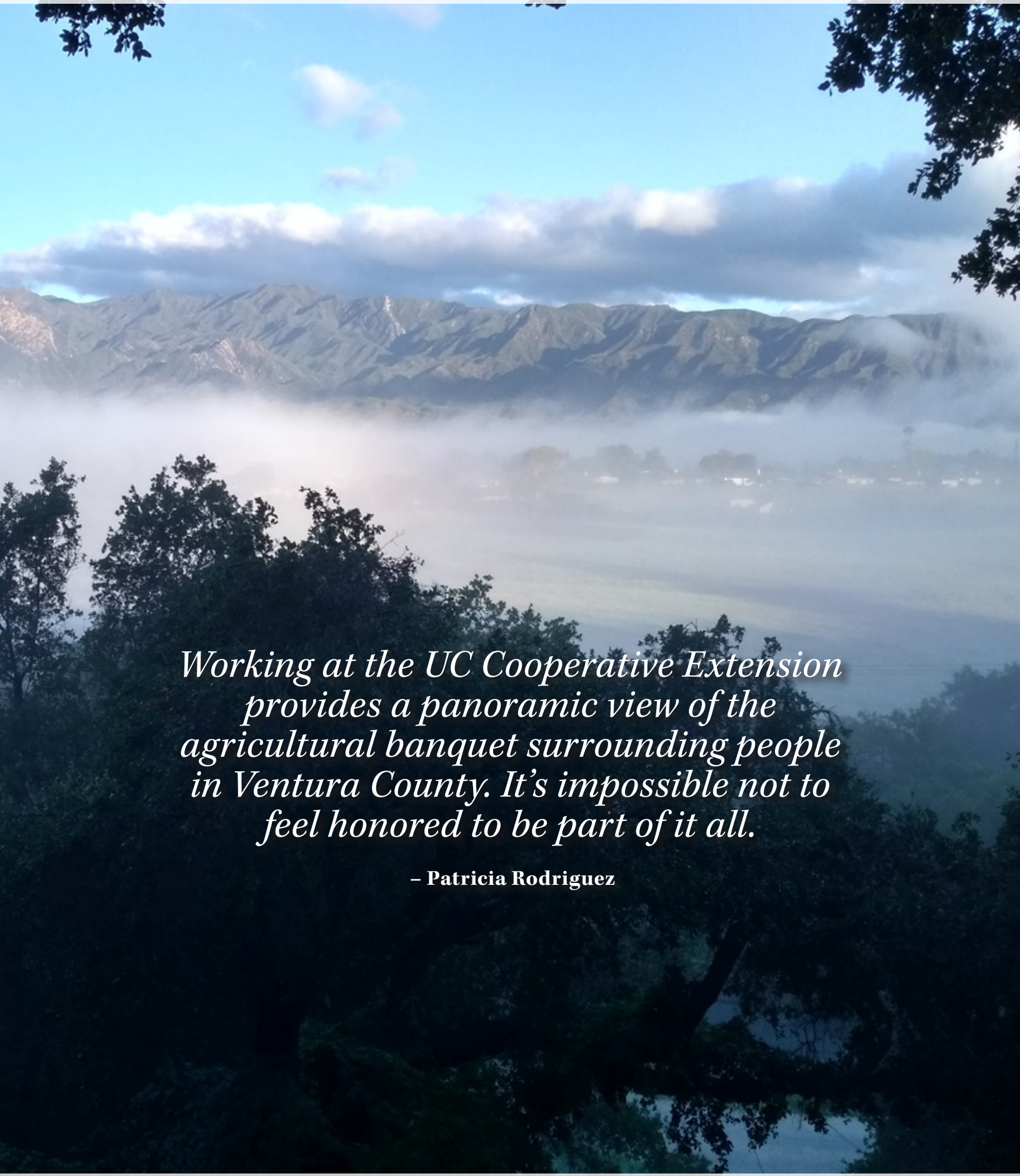
Your Soil Chemical Analyses May Not Be as Accurate as You Think

Chemical analysis of soil samples is recommended to determine nutrient availability and calculate fertilizer rates before planting. Soil tests provide information on a range of plant nutrients, salinity and pH, as well as soil texture, bulk density and organic matter content. There are many commercial soil testing laboratories in California. The decision where to send soil samples is usually determined by physical proximity, word of mouth or prices, which can vary significantly.

Advisor Andre Biscaro decided to assess the performance of eight soil testing laboratories using standardized soil samples to measure accuracy (how close the values were to the actual) and precision (how similar the values were between tests). The results were surprising: two laboratories were consistently inaccurate and imprecise, while two others were consistently accurate and precise. One laboratory performed particularly poorly, reporting values that varied by 300% from the actual nutrient content. The remaining four laboratories showed varying accuracy and precision. Advisor Biscaro recommends a proficiency program where commercial soil testing laboratories have to meet minimum accuracy and precision standards to serve their clientele.

Top: Plowed field with heavy soil in Santa Paula.

Bottom: Residue on the soil surface needs to be removed before a soil sample is taken (photo: Daniel Geisseler).



Working at the UC Cooperative Extension provides a panoramic view of the agricultural banquet surrounding people in Ventura County. It's impossible not to feel honored to be part of it all.

– Patricia Rodriguez

Black Fig Fly: A New Invasive Pest of Figs

Fig growers need to be aware of the black fig fly, an invasive insect that was recently discovered infesting figs in southern California. This insect has been reported in Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego and Ventura Counties. Movement of figs from these counties is strongly discouraged to prevent spread of this pest to other areas of the State. CE Specialist Houston Wilson is working with Advisor Ben Faber and the CDFA to further delineate populations as well as improve monitoring and management strategies.

Most large-scale fig growers are located in the Central Valley, but there are several small growers in Ventura County who mainly sell through farmers' markets. Many homeowners grow figs as well. The fly lays eggs in unripe figs and you may not see the larvae until you bite into a fig or cut it open before eating. Growers should make sure to remove and destroy any infested fruits.

A black fig fly laying eggs inside a green fig (photo: Houston Wilson).

Damage inside a fig caused by the larva of the black fig fly (photo: Houston Wilson).

Argentine Ant Management to Manage Citrus Pests

Argentine ant protecting scale insect (photo: UC IPM).

Advisor Ben Faber and colleagues have begun a study using hydrogels infused with pesticides to control Argentine ant in citrus orchards. Argentine ant is an aggressive invader that disrupts biological control of such pests as Asian citrus psyllid, scale, aphids and mealy bugs. The ants feed on the sugary honeydew produced by these insects and defend them from attack by natural enemies, such as parasitic wasps and predatory lacewings.

These hydrogels are similar to gelatin and can be made of seaweed. The gels swell up with a sugar, water and pesticide solution. Only a very small fraction of pesticide is used compared to normal field applications. The ants carry the sugary pesticide back to their underground nest, feeding it to the young, which causes the decline of the ant colony.

Lemon Rootstock Trial Bearing Fruit for the Industry

The lemon rootstock trial was planted in 2014 and is just now really starting to bear fruit. This trial is part of a continuous series that has gone on for more than 50 years in collaboration with UC Riverside. Advisor Ben Faber has played an active role in lemon rootstock and scion evaluations for decades. As new rootstocks and scions (grafted shoots) become available, they are incorporated in these ongoing studies. The plant material comes from collections around the world and is cleaned up by the Citrus Clonal Protection Program (ccpp.ucr.edu/) at UC Riverside to ensure freedom from viruses and other pathogens.

The harvest is a team effort, with personnel from UCCE Ventura and UC Riverside, pickers provided by the grower and the assistance of dedicated Master Gardener volunteers. Fruit is weighed and then sent to the packinghouse to be sized and graded. These trials are expensive and labor intensive, and are only possible with the collaboration by local growers. In the end, the results identify selections that are not only more productive but also more disease and pest resistant.

Top: Lemon rootstock trial with cover crop in Santa Paula.

Middle: Bins lined up for harvest of lemon scion trial in Santa Paula.

Bottom: Master Gardeners Bonnie Brown, left, and Tracy Kahn, right, assisting with harvest in the lemon scion trial.

Trees Benefit from Mulch Research During Drought

Unrelenting drought and water restrictions have many homeowners rethinking their landscaping. While many are willing to forego green lawns, there is much concern about keeping trees alive and healthy. Trees beautify gardens, provide cooling shade, and capture carbon for climate change mitigation. Many urban areas in Ventura County are tree poor, exacerbating the "heat island" effect. The Ventura County 2020-2040 General Plan has a goal to plant 2 million trees by 2040.

Advisor James Downer has worked on sustainable landscapes in Ventura County for over 37 years, focusing on tree health and supporting the tree care industry. Decades of research on mulching have benefited Ventura County and culminated in a UC publication on mulches for gardeners and landscape professionals (anrcatalog.ucanr.edu/Details.aspx?itemNo=8672).

Mulching with wood chips around trees reduces water demand by reducing evaporation and suppressing weeds. Advisors Downer and Faber showed that newly planted, mulched trees require watering half as often as unmulched trees. They also demonstrated that arborists' wood chip mulches are safe to use and do not spread plant pathogens. Mulch reduced Phytophthora root rot, leading avocado growers to adopt mulching in groves worldwide.

Top: Canby oak grows well with little applied water in climate-ready tree trial.

Bottom: Fresh arborist's mulch.

UNIVERSITY OF CALIFORNIA
Agriculture and Natural Resources
UC Master Gardener Program

Freshly Minted Master Gardener Class of 2022

Every other year, the UC Master Gardener Program of Ventura County invites community members to apply to become Master Gardener volunteers. In November 2021, 35 trainees started a 20-week-long course with 70 hours of classroom instruction in botany, soils and water, climate, sustainable landscape practices, plant pathology, entomology, and integrated pest management. The course also included 20 hours of hands-on training in one of our eight demonstration gardens.

The small group projects were a welcome reprieve from the reclusiveness of online classes. Trainees could choose from 11 projects focused on drought-tolerant and pollinator-friendly gardens, including a monarch butterfly sanctuary at the California Veterans Home; a salvia garden at the Conejo Valley Botanic Garden; and a garden mimicking the native woodland habitat of the California Channel Islands. These newly established gardens are a valuable resource for the public, demonstrating climate-appropriate options for home gardens.

"The Master Gardener program has fundamentally changed my definition of the word 'gardener.' I now understand that a gardener is not just someone who prunes, trims plants or mows lawns. But a true gardener is the one who understands the soil, the trees, pollinators, and the whole dynamics between all the natural elements that help turn a garden into a paradise.
– Anjali D., Class of 2022

Left: Nancy Taylor Walker (left) receives her official badge and certificate from Education Committee co-chairs Rebecca Martin (center) and Roanna Prell (right) (photo: Bob Carey).

Right: Newly minted Master Gardeners on graduation day, April 27, 2022 (photo: Bob Carey).

Accomplishments in 2021–22

- 200 Master Gardener volunteers contributed 12,428 volunteer hours valued at $441,940 (Source: Independent Sector at $35.56/hour)
- Hosted nine Hands-On Drip Irrigation Workshops at two locations in the County
- Hosted 43 gardening talks attended by 1,039 members of the public
- Provided home gardening support to 374 Ventura County residents through the Master Gardener Helpline
- Donated over 400 pounds of vegetables harvested from Master Gardener sites to local hunger relief agencies
- Started new partnerships with the City of Ventura, Growing Works/ Turning Point Foundation, and Moorpark Library

After attending Master Gardener public education events,

73%

of participants reported that they selected low-water use plants,

88%

improved practices growing edible plants, and

60%

reported spending more time gardening.

Farewell to Alexa Hendricks

After 3 years with UCCE Ventura County, our wonderful Master Gardener Coordinator, Alexa Hendricks, left the program to take a position with a local water district. We thank her for her outstanding contributions and wish her well for the future. We are currently in the process of hiring a new Master Gardener Coordinator.

Top: Master Gardeners at succulent workshop with Lori Vreeke.

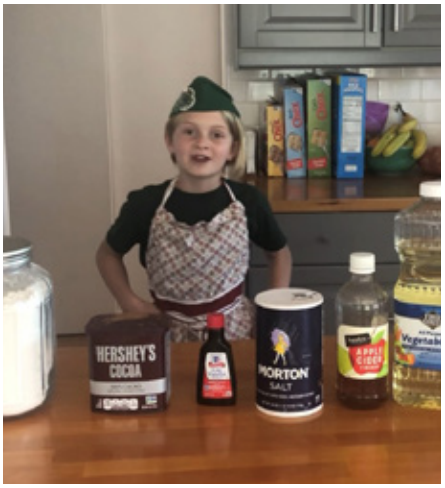
Right: Alexa Hendricks

Master Gardener demonstration garden at HAREC.

4-H Program Resuming In-Person Activities

The 4-H Youth Development Program persevered through COVID-19 restrictions that dominated over half of the reporting year. Once restrictions were lifted, in-person activities resumed with enthusiasm supported by 4-H Representative Valerie Zeko and Education Program Coordinator Susana Bruzzone-Miller. For the first time in two years, 4-H Club members participated in popular County-wide events, such as Presentation Day, honing public speaking skills; Fashion Revue, featuring clothing design; and Large Livestock Field Day, practicing showing livestock and participating in knowledge-based competitions. 4-H Club members also participated in Ventura County Farm Day and the "Trick or Treat So Others Can Eat" event with Food Share.

The final quarter of this reporting year saw a resurgence of the 4-H School Enrichment programs at the UC Hansen Agricultural Research & Extension Center (HAREC). After a two-year hiatus, educators were invited back into classrooms, science nights, and school-wide activities to provide in-person agricultural literacy lessons. A significant amount of fresh produce grown at HAREC was donated to schools to facilitate cooking activities. A new after-school partnership with the City of Thousand Oaks Library, featuring agricultural literacy lessons, provided an opportunity to reach east-County youth. Over 2600 youth were reached in this short period.



Top: Mupu 4-H Club members Presentation Day "Share the fun skit".

Left: 4-H Club members getting ready to collect canned goods for "Trick or Treat So Others Can Eat".

Middle: Participants in Ventura County Fashion Revue sew or purchase outfits to model before fellow 4-H members and family.

Right: Ventura County 4-H Virtual Food Faire submission by Sloan Lees.

Valerie Zeko

Julie Salomonson

Susana Bruzzone Miller

In February 2022, 4-H Representative Valerie Zeko left our program to return to substitute teaching. We thank her for almost 4 years of steadfast service. We recently hired Julie Salomonson as the new 4-H Representative. Julie is excited to rebuild 4-H Club membership which declined during the Covid-19 pandemic. She will also be developing non-club 4-H programs.

In June 2022, Susana Bruzzone-Miller, Youth Education Program Manager, retired after a 20-year career with UC ANR in nutrition and youth education. We are grateful to Susana for her tremendous contributions to the program.

"Taking care of animals teaches us responsibility and compassion. Being responsible for all their care, we learn to take charge."
– Deborah Murphy, former 4-H Club member

Thelma Hansen Symposium Focuses on Local Food and Food Waste

In spring 2022, we offered a 3-day webinar series, free for anyone to attend, entitled: "Local Food: Shortening the Supply Chain and Reducing Food Waste." The first day focused on the food supply chain and food policy, the second day on local and regional food systems, and the third day on reducing food waste.

Speakers were Dr. David Zilberman, UC Berkeley; Dr. Diana Winters, UCLA Resnick Center for Food Law and Policy; Dr. Gail Feenstra, UC Sustainable Agriculture Research & Education Program; Vanessa Zajfen, Ocean View School District in Oxnard; Max Becher, Farmivore; Dr. Ned Spang, UC Davis; Sue Mosbacher, UC Master Food Preserver Program; and Monica White, Food Share Ventura County. The overall conclusion was that a concerted effort is needed at all levels to shorten the food supply chain and reduce food waste in Ventura County.

Vegetable Demonstration Plot Yields Vegetables for Education and Charity

Seed of a range of vegetable crops was donated to HAREC by Corona Seeds, Inc., a vegetable and herb seed company based in Camarillo, CA. Vegetables included peas, tomatoes, asparagus, collard greens, spinach, cilantro, beets, carrots, cabbage, broccoli and cauliflower, which were grown expertly by field technicians Jose Hernandez and Santos Ramirez. The plentiful produce was donated for cooking classes in local schools, to Food Forward – a nonprofit organization that brings fresh surplus fruits and vegetables to people experiencing food insecurity - and the student food pantry at UCLA. A huge thank you to Corona Seeds!

Top: Dr. Ned Spang, UC Davis, conducts research on food loss and waste across the entire food chain.

Middle: Sugar snap peas.

Bottom: Purple broccoli.

Ventura County Farm Day brings Crowds to HAREC

HAREC participated in the 9th Ventura County Farm Day, organized by SEEAG (Students for Eco-Education and Agriculture) on November 6, 2021. Almost 300 visitors from Ventura and Los Angeles Counties and beyond took a self-guided walking tour of agricultural and horticultural research projects, 4-H activities, U-pick vegetables, pumpkin patch, and Master Gardener demonstration garden.

The Master Gardeners educated visitors on raised bed gardening, (worm) composting, drip irrigation, and hosted workshops on winter vegetable gardening and decorating pumpkins with succulents. Thanks to the efforts of staff and many volunteers, we received many positive reactions. We look forward to participating in the 10th Ventura County Farm Day in 2022.

Top: 4-H youth with chicken.

Left: Farm Day visitors with harvested U-pick vegetables.

Right: Farm Day visitors with decorated pumpkins.

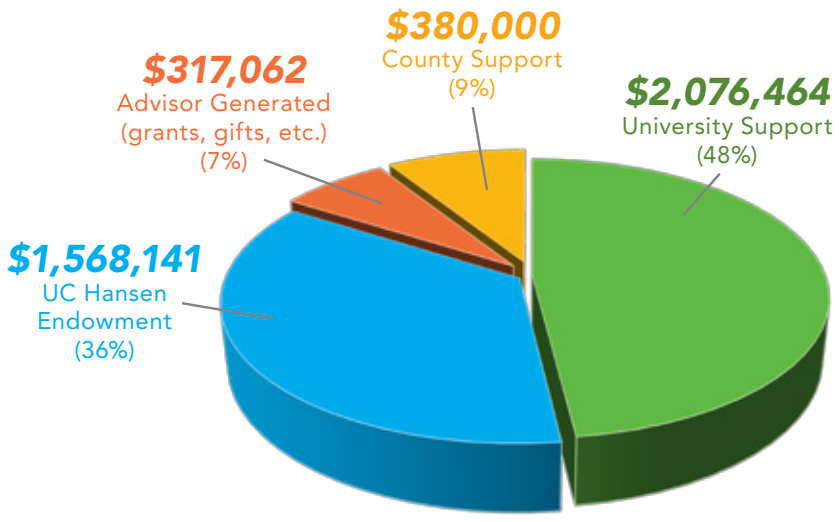
Thelma Hansen

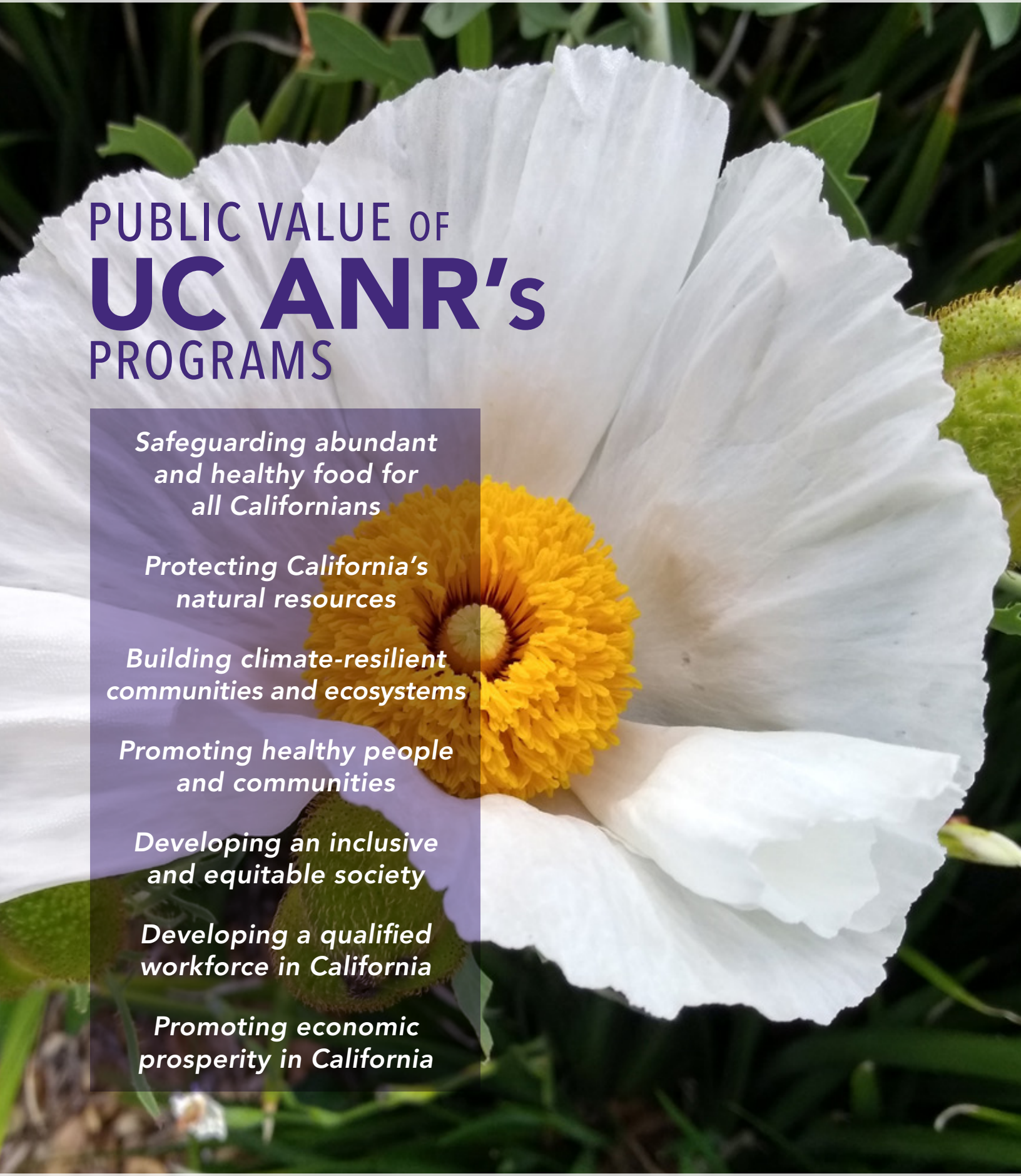
A native of Ventura County, Thelma studied mathematics at UC Berkeley in the early 1900s. Upon graduation, she returned to the family farm in Saticoy. Her generous bequest in 1993 created the Thelma Hansen Fund, a UC endowment that supports and maintains University research and extension activities for the sustainability and benefit of agriculture and natural resources in Ventura County.

It is estimated that for every $1 in agricultural research and extension, there is a return of $20 to the community.

Alston et al., 2010

TO DONATE donate.ucanr.edu





PUBLIC VALUE OF UC ANR's PROGRAMS

Safeguarding abundant and healthy food for all Californians

Protecting California's natural resources

Building climate-resilient communities and ecosystems

Promoting healthy people and communities

Developing an inclusive and equitable society

Developing a qualified workforce in California

Promoting economic prosperity in California

Dedicated to Serving Ventura County

UC COOPERATIVE EXTENSION STAFF

Advisors

1. Andre Biscaro
2. Oleg Daugovish
3. James Downer
4. Sabrina Drill
5. Ben Faber
6. Matthew Shapero

Research & Field Assistants

7. Gina Ferrari
8. Maripaula Valdes-Berriz
9. Vegas Riffle
10. Julie Clark

Community Education Specialists

11. Alexa Hendricks
12. Nicki Anderson
13. Gwyn Vanoni
14. Valerie Zeko
15. Julie Salomonson

HANSEN AGRICULTURAL RESEARCH & EXTENSION CENTER STAFF

Education & Outreach

16. Susana Bruzzone-Miller

Field & Facility

17. Jose Hernandez
18. Leon Preciado
19. Santos Ramirez
20. Brandy McCarthy

Ron Entrekin (not pictured)

UCCE/HAREC Support Staff

21. Stephanie Gallimore
22. Patricia Rodriguez
23. Kathy Speer
24. Patti Verdugo Johnson

We extend a hearty welcome to new employees Ron Entrekin, Julie Salomonson, Kathy Speer, and Maripaula Valdes-Berriz. We thank retired employees Susana Bruzzone-Miller, Sabrina Drill, Leon Preciado, and Patricia Verdugo Johnson for their many years of dedicated service. We also thank John Antongiovanni, Alexa Hendricks, Anthony Luna, Vegas Riffle, DeAnna Vega, and Valerie Zeko, who left our program in the past year, for their valuable contributions.

UC ANR builds partnerships based on deep and long-lasting relationships with local, state, and federal governments, community-based organizations, schools, nonprofits, and private industry. We wish to thank our volunteers as well as the many community partners and collaborators for their dedicated service and support that helps enrich the lives of Ventura County residents.

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4-H

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California Avocado Society

California Celery Research and Advisory Board

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California Department of Food & Agriculture

California Department of Pesticide Regulations

California Department of Water Resources

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California Native Plant Society–Los Angeles/ Santa Monica Mountain Chapter

California Native Plant Society–Riverside/ San Bernardino Chapter

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California State Parks

California State University Channel Islands

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California Women for Agriculture

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Los Angeles County Cattlemen's Association

Metropolitan Water District

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Museum of Ventura County–Agricultural Museum

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Ventura County Museum–Agriculture Museum
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Ventura County Public Works Agency
Ventura County Resource Management Agency
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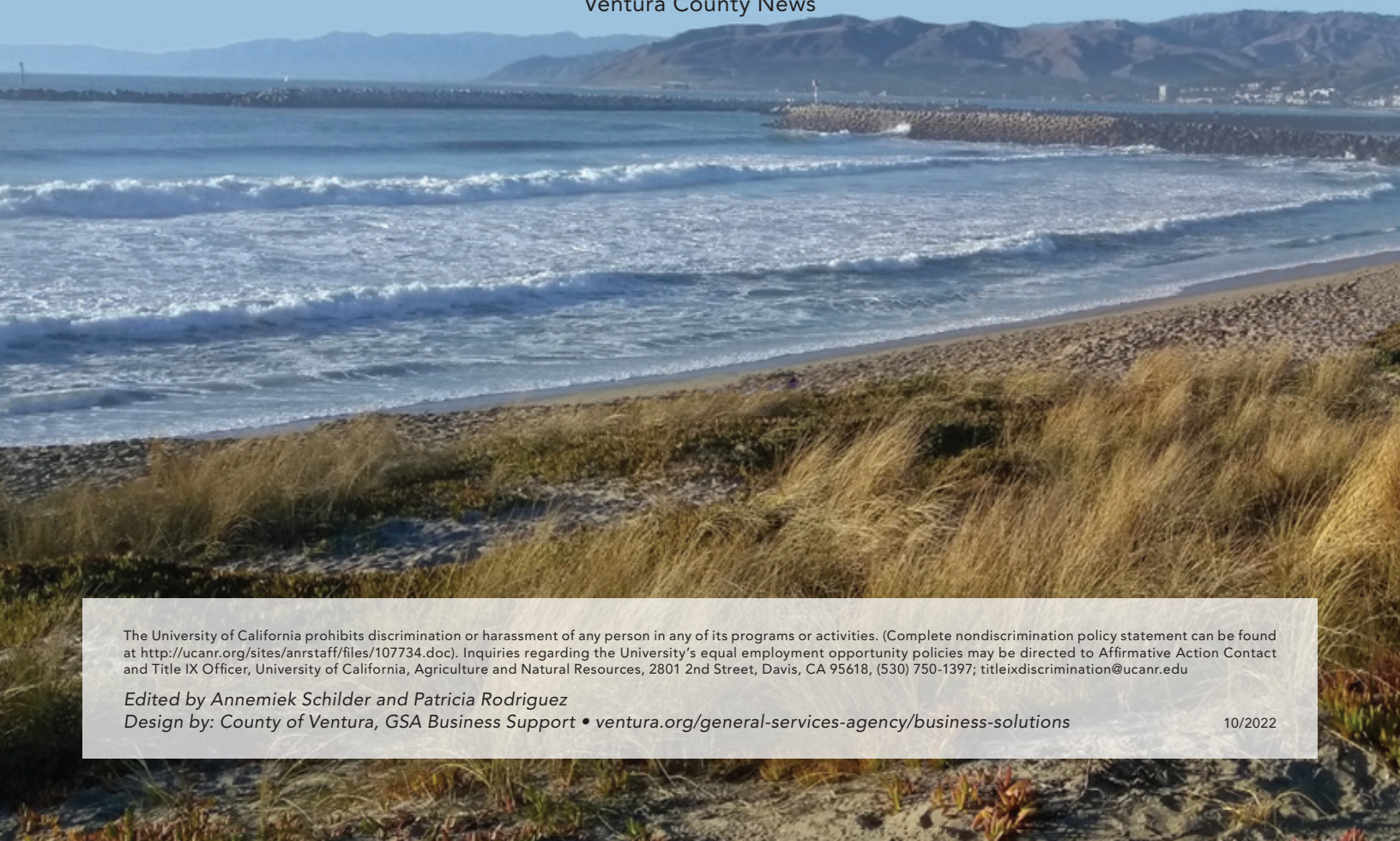

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