

2012  
2013  
UCCE  
ORANGE  
COUNTY



# ANNUAL SUMMARY

**University of California**  
Agriculture and Natural Resources


Making a difference for California



# CONTENTS

---

## Introduction



1 About



2 Meet UCCE



3 Where We Work

## Program Highlights




6 4H




9 EFNEP



12 Master Gardeners



15 Environmental Horticulture



19 Water Quality and Water Resources

# ABOUT

## UC Cooperative Extension

Throughout California, the University of California's 57 Cooperative Extension offices are local problem-solving centers. We are the bridge between local issues and the power of UC research. Our county-based staff is part of the community – we live and work in the areas we serve.

More than 300 campus-based specialists and county-based farm, home and youth advisors work as teams to bring practical, unbiased, science-based answers to problems throughout California.

As part of the agricultural community, we help farmers develop more-efficient growing methods, solve pest management problems and develop crops and irrigation methods that use less water.

As stewards of the land, we help develop smart water-use strategies, develop wildfire education and help preserve natural areas and farmland.

As advocates for healthy communities, we promote healthy diets and exercise for better health, help Californians learn to choose the most nutritious foods and help shape the citizens of tomorrow through the EFNEP Program.

And thousands of volunteers extend the reach of our work through the Master Gardener Program and the California 4-H Youth Development Program.

We work in full partnership with federal, state, county and private resources.

We are stewards, problem-solvers, catalysts, collaborators and educators.

We are UC Cooperative Extension.

## Orange County CE

In 1918, a unique partnership between the University of California, the United States Department of Agriculture, and the County of Orange, Cooperative Extension was created to provide vital research-based information to growers and their families in this agriculturally rich community.

Today, over 90 years later, Orange County has changed from a wide expanse of citrus groves and walnut trees to an industrial and residential megalopolis. However, while the economy and lifestyles throughout the South Coast have changed, the need for education and training has not.

# MEET UCCE

The work summarized in this document was performed by the following UCCE Orange County principal advisors and program staff coordinators.



**Darren Haver**

OC UCCE County Director  
South Coast Research and  
Extension Center Director  
Water Resources/Water Quality  
Advisor



**John Kabashima**

Environmental Horticulture  
Advisor



**Tammy Majcherek**

Water Resources/ Water Quality  
Program Representative



**Jason Suppes**

4-H Program Representative



**Guadalupe Cabrera**

EFNEP Program Representative



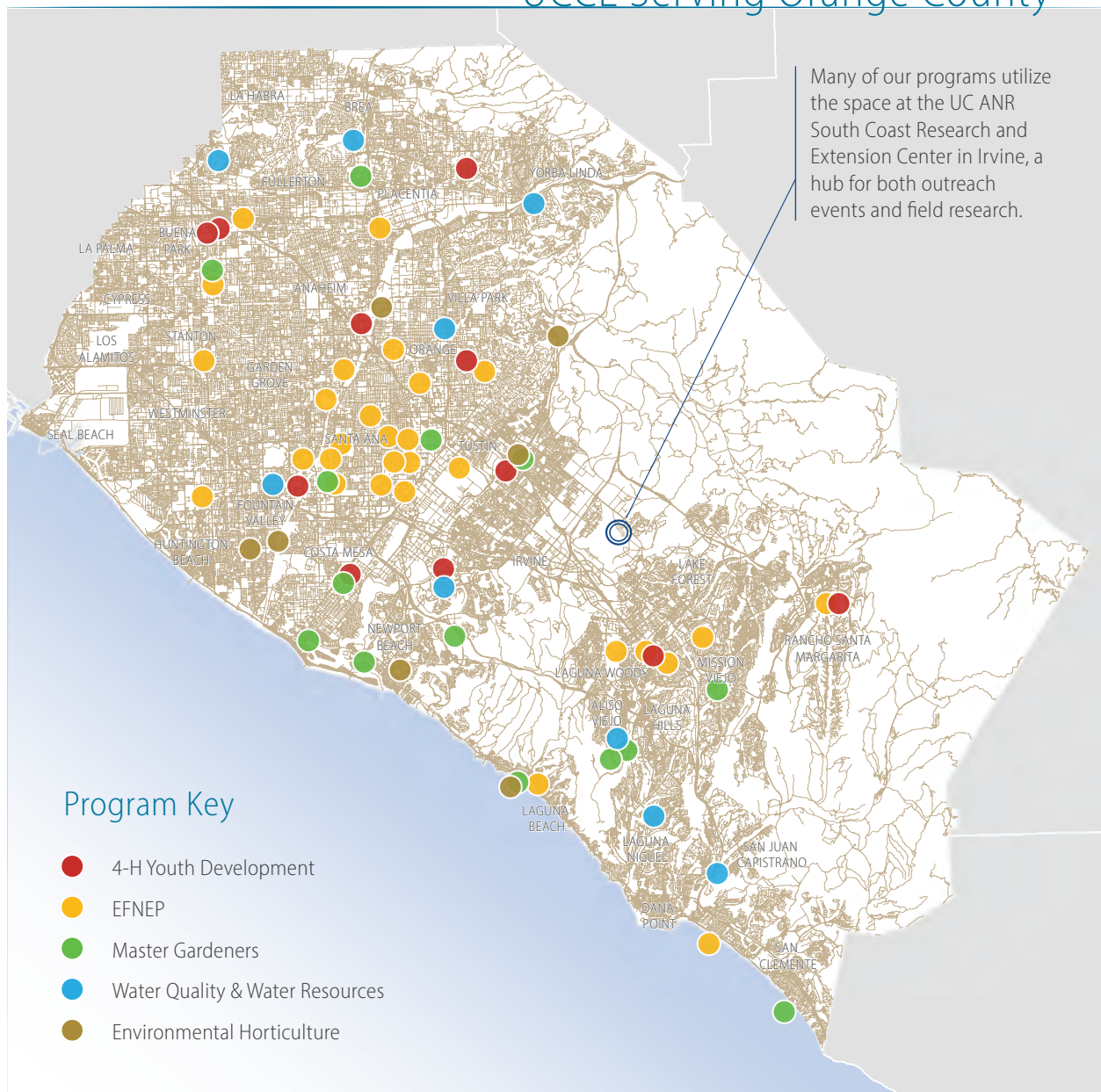
**Sharon Stolen**

Master Gardener Program  
Representative

# WHERE WE WORK

UCCE reaches out to a diverse population through a variety of local activities. Depicted below are some of the places where we have provided workshops, lead classes, conducted field research, or hosted events for the benefit of Orange County, in 2012-2013.

## UCCE Serving Orange County



UC

---

CE

# PROGRAM HIGHLIGHTS

---

# 4-H YOUTH DEVELOPMENT



## Head, heart, hands, and health

The 4-H Youth Development program is the youth education component of the UC ANR Cooperative Extension. The organization, for youth ages 5-19, promotes hands on learning and is based on parent and volunteer participation. 4-H welcomes all youth (and adult volunteers) from all backgrounds in all locales (rural and urban) regardless of race, religion, color, national origin, sex, marital status, sexual orientation, age, veteran status, medical condition or disability.

4-H Clubs are one of the most popular and visible parts of the overall 4-H program. A 4-H Club is run by youth with the help of adult advisors. Each Club offers one or more projects. Projects are the heart of 4-H's hands-on learning. Each project focuses on a topic – anything from art to zoology. By using 4-H projects as important means for achievement and growth, members build skills they can use the rest of their lives. 4-H educational experiences are built around life skills that center on positive self-esteem, communication and decision making.

4-H Youth Development stresses project learning and family values and keeps youth in productive learning activities as a deterrent to gangs. 4-H projects, activities, and events help participants become contributing, productive, self-directed members of a forward-moving society.



## Summary of Activities:

- Trained 50 new adult volunteer leaders
- Partnered with OC Parks on a service learning project for 50 4-H members at O'Neill Regional Park
- Increased program visibility through various outreach events (Tanaka Farms Open House, San Juan Capistrano Earth Day, Poultry Demo Day at Ortega Tack and Feed, South Coast REC Open House) and social media campaigns
- Received a grant from Toyota for water education in Orange County; working with OC Watersheds to increase and support the effort to bring watershed education directly to school aged children
- Partnered with Master Food Preservers of Orange County to deliver food safety and preservation techniques to 4-H members
- Connected with California Coastal Commission exploring educational programs for 4-H at the Upper Newport Back Bay



## Increased member participation in major 4-H events:

- Food Fiesta - Member participation and entries increased by 15%
- Youth Expo - Small animal science entries increased by 20%
- Presentation Day - Member involvement and the number of presentations given increased by 10% and 15%, respectively

▲ Top: OC 4-H Teen Leaders Becky Bender and Ashleigh Mathias of the Trabuco Trailblazers walk steer "Thor" at the 2013 Youth Expo.

Bottom left: Primary member Anna Babinchenko of the Mesa Goathill Gogetters shows off her winning poppy seed bread at this year's Food Fiesta.

Bottom right: OC Parks Reserve Ranger demonstrates the proper way to prepare soil for planting at the 4-H Earth Day event.

## 4-H County and State Anniversaries

In 2013, 4-H celebrates its 96th year in Orange County and 100th year in California. Work is underway to celebrate Orange County's 4-H and Orange County's Cooperative Extension at the 2013 South Coast Research Extension Center Open House on October 5th.



▲ Top: An Orange County 4-H member poses with her steer at the OC Fair in this undated photograph.

Bottom: Earliest known photo of Orange County 4-H members at the Spurgeon Methodist church in Santa Ana, circa 1922.

# EFNEP

## Expanded Food & Nutrition Education Program



### Making a difference

Orange County's overweight and obese populations continue to grow rapidly, with 43.9% of the population overweight and 9.1% obese. Subsequent healthcare costs for conditions such as heart disease and diabetes are also on the rise.

EFNEP, a fully-funded federal USDA program administered locally by UCCE, is helping alleviate this economic burden by providing nutrition education to OC adults and youth.

Using the research-based "Eating Smart/Being Active" curriculum, the Adult EFNEP program empowers participants to adopt healthy lifestyle practices through a series of nutrition education classes. In the Youth EFNEP program, staff train volunteer teachers in schools and community-based organizations to use one of several University-approved curricula. These curricula are designed to help youth develop healthy eating habits, choose healthy snacks, practice safe food handling, and increase physical activity.





## In FY 2012-2013, Orange County EFNEP:

- Delivered nutrition education to 518 adult family members.
- Taught an average of 8 lessons to each adult participants.
- Reached more than 2,460 family members indirectly.
- Provided nutrition education to 127 youth.



▲ Top: Since her participation in the Adult EFNEP Program, Mrs. Gonzalez has cooked with less fat and salt and buys fewer candies and sodas - and her daughters enjoy preparing their favorite salads themselves.

▲ Bottom: Alonso, student at Thorman Elementary in Tustin, proudly holds up the healthy lunch he created using MyPlate.

## EFNEP Participants Profile:

53% of adult participants had less than a high school education.  
44% of families had income levels at or below 186% of the poverty level.  
86% of participants participated in one or more food assistance programs.  
96% identified themselves as Hispanic or Latino.

## Of 431 Adult Program Graduates:

90% improved at least one nutrition practice.  
88% improved at least one food resource management practice  
40% showed improvement in one or more food safety practices.



- ◀ Left: EFNEP Program Representative Hilda Perez leads an Eating Smart & Being Active class at Lincoln Elementary School.
- ▶ Right: Participants at an adult EFNEP class at Olivewood Elementary School learn a stretch band exercise for strong bones.

# MASTER GARDENERS



## Advice to grow by

The Master Gardener (MG) Volunteers extend UC research-based information about home horticulture and pest management. In 2012-2013, MG's shared this information with the public at a variety of events, including classes, workshops, demonstration gardens, community gardens, and booths at fairs and shows. They also interact with the public through one-on-one consultations and a website and hotline.

UCCE Master Gardeners of OC do make a difference: our projects implement these Agriculture and Natural Resources (ANR) core issues:

- Promoting environmentally responsible and sustainable horticultural practices
- Waste Management: Composting green-waste to reduce landfill materials
- Education: reducing fertilizer and pesticide pollutants
- Education: protecting water quality & quantity
- Education: detection and management of invasive species



## In 2012-2013,

300 MG's served 18,600 volunteer hours to reach 65,600 OC residents. Our group has over 50 active projects in the community to meet diverse populations. We train youth, teachers, and homeowners through a plethora of opportunities to equip them with the best management practices from our UC resources.



### A sampling of our program's activities:

- MG Hotline crew researched and answered 1000 questions submitted by OC residents.
- The MG educational website had 28,000 unique hits with readers visiting 110,000 pages. This year's most popular subjects: edible plants, soil management, and ornamental care.
- MG Speakers Bureau gave 90 presentations.
- At just one show, Green Scene, we talked to 3200 people in two days.
- At the Great Park, we continue to provide the following educational programs: Saturday Fall and Spring Garden

- ▲ Master Gardeners discuss sustainable landscaping with a guest of the UC ANR South Coast Research and Extension Center Open House.

Workshops (4-5 workshops each season), Edible Gardening Classes (once a month, six month series), Children's Garden Workshops (once a month, all year).

- The Farm + Food Lab demonstration garden at the Great Park continues to be a bountiful educational resource. Hundreds of people visit every week, take home UCCE educational materials, view gardening techniques like square foot gardening, container and raised bed gardening, vertical gardening, fruit tree espaliering, etc. UC Master Gardeners are present 7 days a week to answer questions.

## What is most impressive, however, are the experiences shared by those who attend our workshops and visit the garden:

- The older couple who drive down to Irvine for every Edible Gardening Class and have turned their yard into the neighborhood's veggie garden where they share their knowledge and the produce they grow.
  - The folks (and there are several) who take off Tuesday mornings once a month from work to attend the Edible Gardening classes.
  - The day care/summer camp programs that now use the Farm + Food Lab as a field trip destination (we see the groups virtually every day now that it's summer).
  - The mother and daughter, recently moved from a large home in Temecula with a big garden to an apartment in Irvine, who come to the Farm + Food Lab because they miss gardening so much (the 10 year old wants to become a Master Gardener!).
  - And, of course, the dozens and dozens who share their stories of new or better gardens, healthier cooking and eating, and more.
- ▶ The Great Park thanks the OC UCCE Master Gardeners for their work at the Food and Farm Lab.
  - ▶ A Master Gardener practices her pruning skills at the UC ANR South Coast Research and Extension Center.



# ENVIRONMENTAL HORTICULTURE



## Sustainable landscapes through research & education

Environmental Horticulture (EH) applies to both the commercial and residential production of plants for ornamental use. Projects may thus address a variety of issues, including insect, disease, and weed management in ornamental horticulture production systems; biological control of exotic pests; water use; water related problems; Total Maximum Daily Loads (TMDLs); detection and removal of pathogens, pesticides and nitrates in agricultural runoff water and in recycled water systems.

Through the EH Program, UCCE conducts applied research and continuing education for the production nursery industry, public and private landscape professionals, water agencies, environmental and conservation groups, the County of Orange, and the gardening public.

The UCCE EH Program regularly conducts and contributes to local applied research projects benefitting Orange County. EH also gains exposure through frequent presentations at seminars and workshops, as well as representation on a number of program boards and committees.



## 2012 - 2013 Extension Outreach

Over thirty lectures were presented at seminars and workshops during FY 2012-2013.

- Audiences ranged from local (OC Parks, UCCE Master Gardeners) to state (Pest Applicators Professional Association-PAPA) to national (National Plant Board) entities.
- Lectures covered topics such as: Integrated Pest Management, entomology, garden pests in Orange County, new invasive pests, abiotic causes of plant abnormalities, and nursery best management practices.
- Events included field days, nursery workshops, the UC ANR South Coast Research Extension Center Open House, and various conferences (Western Tree Management Symposium, PAPA Conference).
- Dr. Kabashima also emceed the Regional Polyphagous Shot Hole Borer Nursery Meeting at Huntington Library and Vertebrate Pest Conference in Anaheim.

- ▲ Dr. John Kabashima discusses home pest management with visitors to the UC ANR South Coast Research and Extension Center's Residential Landscape Open House.

## Applied Research Projects

One crucial aspect of environmental horticulture is Integrated Pest Management (IPM), an approach to pest management that minimizes health and environmental risks through pest prevention, monitoring, and identification, and conscientious, site-specific selection of pest control tactics. The projects described here exemplify the routine monitoring, attention to pest biology, and careful pesticide use that are vital to IPM and the sustainable management of our urban environment.

- ▼ A yellowjacket prepares to fly pesticide-laced bait back to its nest at Irvine Regional Park.



- Yellowjacket Population Monitoring and Trapping, Irvine Regional Park
- Red Palm Weevil Trapping Project, Laguna Beach
- Oriental Fruit Fly - arranged access to WCA tree inventory for UC Riverside research
- Trilure Trap Study, South Coast REC in collaboration with University of Hawaii
- Glassy-winged Sharp Shooter Nursery Task Force - worked on getting 24(c) special local need label for Tame on nursery fruit and vegetables
- Asian Citrus Psyllid Workshops and Management - Retail Nursery Workshop, Ontario - arranged parasitoid release at OC Irvine Ranch Historical Park
- Light Brown Apple Moth (LBAM) Management - trained SY and Nakase Nurseries on how to deploy LBAM pheromone for infestation management

## Service Projects

UCCE Environmental Horticulture is represented in various academic and public domains by Dr. John Kabashima, who participated in or actively contributes to the following programs, boards, and committees.

### Boards

California Department of Food and Agriculture  
Nursery Advisory Board  
Nursery Growers Association Board  
Nursery Growers Leadership Board (ex officio member), a subcommittee of the California Association of Nurseries and Garden Centers)  
Orange County Farm Bureau (ex Officio Member)  
SoCal California Association of Pest Control Advisors (CAPCA) Board of Directors

### Committees

OC Fair Horticulture Manager Interview Committee  
OC UCCE 4-H PR Interview Committee  
Orange Coast College Horticulture Advisory Committee  
Specialty Crops Research Initiative Water3 USDA Project Proposal Team  
UC ANR South Coast Research and Extension Center Research Advisory Committee  
UC Nursery and Floriculture Alliance Executive Committee  
Urban Water Quality Research Project Proposal

### Community Service

Orange County Gardeners Association  
Southern California Gardeners Federation

### Programs

Blind Children's Learning Center Sensory Garden  
Glassy-winged Sharp Shooter Nursery Task Force  
Veteran's Agricultural Learning-Opportunities and Resources Program

## Publications

C Newman, J., J. A. Bethke, J. Kabashima, J., K. Robb, and C. Wilen. 2012. Integrated Pest Management (IPM). Pp. Xx-xx. In (ed) Julie Newman. Container Nursery Production and Business Management Manual. Xxpgs.

Bethke, J. A., J. Kabashima, J. Newman, K. Robb, and C. Wilen. Insects, Mites, Snails and Slugs, Chapter 14. In Newman, J.(ed). Container Nursery Production and Business Management Manual. Univ. of Calif. Agric. And Nat. Res. Publication XXXX. Richmond, CA. (In Press, Accepted 8/27/12).

Kabashima, J.N., J.A. Bethke, and S.Tjosvold. The impact of invasive pests on the nursery industry, Chapter 17. In Newman, J. (ed) Container Nursery Production and Business Management. Univ. of Calif. Agric. and Nat. Res. Publication XXXX. Richmond, CA. (In Press, Accepted 8/27/12).

Reed, D., J.P. Newman, T.M. Perring, J.A. Bethke, and J.N. Kabashima. 2013. Management of Bagrada Bug in Nurseries. UC Integrated Pest Management Statewide Program.

# WATER QUALITY & WATER RESOURCES



## Protecting water resources through better water management

In 2004, the National Pollutant Discharge Elimination System (NPDES) Principal Permittee, Orange County, entered into a cooperative agreement with the University of California Cooperative Extension program to conduct water quality monitoring studies and implement water quality improvement programs in areas where the University has special expertise, particularly related to fertilizer and pesticide applications.

This report showcases highlights from three aspects of the Water Resources and Water Quality program at the UC Cooperative Extension of Orange County:

- Outreach activities provided to local Homeowner Associations (HOAs)
- The Annual Residential Demonstration Landscape Open House, hosted by the UC ANR South Coast Research and Extension Center
- Water quality research in collaboration with the California Department of Pesticide Regulation (CDPR)



## 2012 - 2013 HOA Outreach Activities

- Conducted workshops consisting of presentations and tours of the demonstration landscapes at South Coast REC to HOA Boards and Landscape Committees.
- Partnered with two (2) large property management companies to host two events for HOA Boards they represent in Orange County.
- Extended water conservation and water quality information to over 146 HOA Board members through various events within the County.
- Distributed 600 pieces of water quality and integrated pest management related educational material.

- ▼ The 'H2O for HOAs Forum' was hosted by the Tri-City Water Savers in San Juan Capistrano.



Community Associations Institute (CAI) estimates there are 300,000 community associations housing 60 million Americans in the United States, ranging in size from two-unit associations to large-scale, master planned communities with more than 30,000 units. Irrigating common areas within HOAs has become a significant cost covered by individual residents as part of their HOA monthly dues. In addition, surface runoff resulting from overwatering and poorly designed and maintained irrigation systems carries chemicals such as fertilizers and pesticides into nearby waters, where they can ultimately impact beneficial uses. During the current program year, the Water Resources and Water Quality program partnered with several property management companies and landscape professionals to introduce HOA board and landscape committee members to water conservation and water quality management practices to implement in their communities.



## Impact of 4th Annual Residential Demonstration Landscape Open House:

- Attended by over 450 residents from thirty-seven Orange County cities.
- Results from email survey showed a 97 percent adoption of at least one sustainable landscape management practice since visiting the demonstration landscapes.
- Visitors were exposed to multiple water quality and stormwater messages delivered through direct and indirect interaction with UCCE staff and UCCE Master Gardener volunteers serving as landscape docents and speakers.
- 3700 items of outreach literature were distributed to attendees.

▲ A guest vendor speaks with a crowd of visitors to the Annual Open House.

The Annual Residential Demonstration Landscape Open House and Vendor Fair held at the UC ANR South Coast Research and Extension Center in Irvine provides the general public access to three residential landscapes with different water use requirements and varying ability to mitigate irrigation and stormwater runoff. The landscapes located at the Center differ by the types of plants grown, irrigation control and delivery, and hardscape permeability. Rainwater harvesting is demonstrated along with structural elements designed to increase infiltration, such as gravel pits, slot drains, and underground stormwater infiltration devices. The site also serves as a location to conduct research on fertilizer and pesticide movement, overall water use of residential landscapes, and alternative pest control tactics to minimize pesticide use.

# Study: Pesticide Runoff in Orange County Watersheds

Urban runoff is an important source of pesticide loading into surrounding waterways. According to the California Department of Pesticide Regulations (CDPR) Study 270, it is estimated that urban pesticide use accounts for over 70% of the total pesticide use in California (UP3 Project, 2007).

UCCE Orange County Water Quality staff members have worked with CDPR to identify and characterize pesticide use trends in urban runoff at five sites located within the Dana Point Coastal Streams and Aliso Creek Watersheds. Field monitoring combined with scheduled dry and wet season water and soil sampling via storm drain outfalls has provided data that will assist in determining the effectiveness of any new regulatory measures being proposed in California.

Initial results of this research have repeatedly detected pesticide chemicals of concern. In addition to this study, CDPR and UCCE Orange County staff has been working with outside cooperators to establish new methods of application and alternative practices to reduce the risk of potential pollutants entering local watersheds.

## Impact of Monitoring Study

- Potential to track performance of mitigation measures and outreach programs within a defined area.
- Potential adoption of new application methods by pest management professionals through outreach programs.





**Orange County  
University of California Cooperative Extension**

1045 Arlington Drive  
Costa Mesa, California 92626  
Phone: 714-708-1606  
Fax: 714-708-2754  
Web: <http://ceorange.ucanr.edu>



It is the policy of the University of California (UC) and the UC Division of Agriculture & Natural Resources not to engage in discrimination against or harassment of any person in any of its programs or activities on the basis of race, color, national origin, religion, sex, gender, gender expression, gender identity, pregnancy (which includes pregnancy, childbirth, and medical conditions related to pregnancy or childbirth), physical or mental disability, medical condition (cancer-related or genetic characteristics), genetic information (including family medical history), ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services (as defined by the Uniformed Services Employment and Reemployment Rights Act of 1994 (USERRA), as well as state military and naval service. This policy is intended to be consistent with the provisions of applicable state and federal laws and University policies.

University policy also prohibits retaliation against any employee or person in any of its programs or activities for bringing a complaint of discrimination or harassment pursuant to this policy. This policy also prohibits retaliation against a person who assists someone with a complaint of discrimination or harassment, or participates in any manner in an investigation or resolution of a complaint of discrimination or harassment. Retaliation includes threats, intimidation, reprisals, and/or adverse actions related to employment or to any of its programs or activities.

In addition, it is the policy of the University and ANR to undertake affirmative action, consistent with its obligations as a Federal contractor, for minorities and women, for persons with disabilities, and for covered veterans. The University commits itself to apply every good faith effort to achieve prompt and full utilization of minorities and women in all segments of its workforce where deficiencies exist. These efforts conform to all current legal and regulatory requirements, and are consistent with University standards of quality and excellence.

In conformance with Federal regulations, written affirmative action plans shall be prepared and maintained by each campus of the University, including the Division of Agriculture and Natural Resources. Such plans shall be reviewed and approved by the Office of the President and the Office of the General Counsel before they are officially promulgated.

Inquiries regarding the University's equal employment opportunity policies may be directed to Linda Marie Manton, Affirmative Action Contact, University of California, Davis, Agriculture and Natural Resources, One Shields Avenue, Davis, CA 95616, (530) 752-0495.