

% Curious 2 Pardener

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University of California
Agriculture and Natural Resources

Gardening Fun with Children

A Quarterly Newsletter Published by the University of California Cooperative Extension and the UC Master Gardeners of Placer and Nevada Counties

by Ann Wright, Nevada County Master Gardener

There are many ways to engage children in garden activities. Spring and early summer is a good time to encourage children to get outside, to observe what they see in their surroundings and to dig in the dirt! There are a number of school and community gardens where children may learn the benefits of growing what we eat, and the concept of sharing what we har-



vest. Gardens are truly living laboratories where children can learn about the soil, plant propagation as well as good garden hygiene. The child's understanding of the need for consistency in care of plants will enhance growth and development.

With the weather warming, there are a number of ways to involve children in garden projects:

- Start by locating and planning a small patch of garden space just for them. Help children understand what plants need to grow: light, water and air (carbon dioxide for photosynthesis).
- Teach children the importance of the soil health that organisms in the soil play a special role by helping break down decaying matter (dry leaves, grass, etc.) adding nutrients for the health of future plants.
- Younger children may enjoy finding earthworms—which are like little factories which breakdown dead organic material in the soil. As the worms break down dead material, they add waste to the soil, called "castings". Castings are very high in nutrients and bacteria which is beneficial to soil health.
- Help children start plants that are fairly easy to grow, such as beans, peas, summer squash, radish, cherry tomatoes or potatoes.
- Share a seed starting party where children are allowed to fill seed trays with seed starting soil, plant seeds and mist seeds with spray water bottle.
- Once seedlings have emerged, and there are some secondary leaves budding from the plant, help children gently transplant the seedlings outdoors – once threat of frost has passed.

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- Depending on the child's age, attention to the parts of the plant will help their understanding of how plants grow.
- When the garden is established, allow children to hand water the plants; this is a nice opportunity to teach children the importance of not wasting water, a very precious resource.
- As plants grow, encourage children to inspect their plants for "good bugs" or "bad bugs". This is another opportunity to teach children about balance – healthy strong plants will withstand pest invasions better than weak, droopy plants.

Above all, have fun and encourage children to have fun with the garden and enjoy your time together!

Happy Gardening!

Reference

 Collective School Garden Network. Western Growers Foundation. 2015. http://www. csgn.org/



You fight dandelions all weekend, and late Monday afternoon there they are, pert as all get out, in full and gorgeous bloom, pretty as can be, thriving as only dandelions can in the face of adversity.

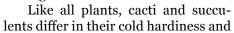
— Hal Borland

Whether you admire or hate them, learn more about dandelions and how to manage them at http://ipm.ucanr.edu/PMG/PESTNOTES/pn7469.html

Growing Cactus and Succulents from Seed

by Joan Goff, Placer County Master Gardener

All cacti (the plural of cactus) are succulents, but not all succulents are cacti. In general, cacti have spines and succulents do not, but there are lots of exceptions to that rule. Here is some basic information about starting and growing succulents in your garden. This article focuses on starting plants from seed; in our next issue we will cover propagating by leaf and stem cuttings.





Agave seeds started January 16 show tiny green sprouts on February 25.

sun tolerance. To succeed with them, we need to pay attention to how they want to be treated. With the exception of one South African species, all cacti evolved in the Americas. Succulents have developed all over the world and in most types of climates.

Cacti and succulents generally don't like wet feet. But the ones growing in my garden don't appear to be bothered by the rains we received this winter. Drainage is everything! Water them when dry, not before. It is much easier to kill a cactus or succulent with too much water than any other way. Good drainage, whether planted in the ground or in a pot, is very important. The other piece of information that is important is whether the plant you are trying to grow is a winter or summer grower. Succulents that aren't actively growing want even less water.

Growing cactus and succulents from seeds require the same attention as growing other plants from seed. And due to how tiny the seeds often are, it can be a challenge to get them to germinate. Each plant requires specific preparation, temperature and planting depth, but generalizations can be made.

Seeds need to be planted in a medium that drains well and is clean of disease. The seeds should be planted no deeper than they are wide. They must be kept moist, but not wet, during the germination. They often germinate within a few weeks of planting but can take much longer. Ernesto Sandoval, director of the UC Davis Botanical Conservatory, recommends topping the seeds with sand rather than soil. He also recommends placing the pots into plastic bags to maintain the moisture. Germination is more likely with fresh seed.

When germination occurs and small plants can be seen, the plastic needs to be opened to allow for air circulation. Fungus is a threat to the seedlings when they are small. Gradually reduce moisture and when the plants fill the pot or are the size of a marble, they can be transplanted into their own pots and gradually acclimated to the big wide world.

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Lawn Removal with Sheet Mulching

by Carol Feldman, Placer County Master Gardener Part 2 in the series "From Lawn to Water-Smart Landscape"

After five long years of drought and water restrictions, many Californians are ready to say goodbye to their lawns. Even though the current drought has ended, drought is not uncommon in California's history. Lawn replacement is always a great opportunity to create a beautiful garden that will not only save water, time and money, it will provide habitat for some very important pollinators too.

To start the process, you need to kill off the lawn and improve the soil. Solarization (see next page) will kill the lawn but won't improve the soil. However, you can improve the soil while killing the lawn with sheet mulching, a process of applying layers of organic mulch over soil.

Materials such as compost, wood chips, straw and paper products all make good mulch layers, so long as the materials are free of weed seeds. A combination used by many homeowners is a layer of newspaper or cardboard followed by four inches of finished compost topped with two inches of bark. It should be noted, however, that termites could be attracted to cardboard. If the lawn to be removed is close to your house or other wooden structures, think twice before using cardboard.

You can choose to dig up the existing lawn and smother the area with mulch, or just smother the lawn in place. Here are a few guidelines to help you choose:

- If your irrigation lines run close to the surface, it's safest to leave your lawn in place and smother it. (You'll still need to be careful when planting!)
- If your lawn is on a fairly steep slope, you may want to dig out the lawn and terrace the area to keep water and mulch from running off.
- If you start in the fall, it's better to dig up the lawn before winter rains give the lawn adequate moisture to come back from dormancy.

If you choose to dig up the lawn, dig down about six inches. It's easiest to turn the lawn upside down and let it rot in place, reusing perfectly good organic matter. You can also use the dug-up lawn to create mounds for a more interesting planting area, but bear in mind that the dead lawn will shrink as it continues to decompose, so oversize the mounds.

Before putting a shovel to your turf, determine where your sprinkler heads are, and protect them. As part of your lawn conversion you can convert the sprinklers into drip irrigation, using the sprinkler heads as access points for the irrigation pipe, but that's another topic!

To lay the mulch, start with a few layers of newspaper or a layer of cardboard (with the caveat noted above). Cover every square inch of the lawn area, and be sure to overlap the edges by several inches so no light can get through. (Overlap by a foot or more if you've got Bermuda grass!) Wet this layer to start the decomposition. The next layer should be about four inches of organic matter. Compost is best because it already has a good balance of carbon (brown waste) and nitrogen (green waste). Wet this layer as you lay it down, so

it's as moist as a wrung-out sponge. Then on top of that, pile on two inches of an organic material that you like to look at, because this is the top layer. Bark is popular because it usually complements the rest of the landscape. Wet this as well, but be sure to keep the mulch at least six inches from the foundation of your home.

Keep the mulch moist. If there's no rain, you can turn those former sprinkler heads into micro sprayers to automate the watering. After three to four months, your garden will be ready for planting. Just dig in and enjoy the fruits of your labor!



Placer County master gardener Julie Long, winner of Regional Water Authority's Rethink Your Yard contest, will discuss her yard makeover at a free workshop on July 17. See the events calendar on page 8 for time and location.

The photo above shows Julie's yard during the sheet muclching phase where she killed the lawn and improved the soil in one step.

References:

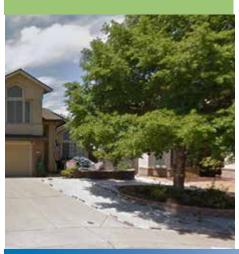
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Soil Solarization A Method for Lawn Removal



Another way to kill your lawn without using chemical herbicides is with a technique called solarization. Cover the soil surface with clear plastic for four to six weeks during hot, sunny weather as shown in the photos above and below. Be sure to secure the edges well. Trapped solar radiant energy will heat the soil and kill not only the lawn, but also weed seeds and soil pathogens.

For detailed information on solarization, go to http://ipm.ucanr.edu/PMG/ PESTNOTES/pn74145.html







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Aristolochia californica California Pipevine

by Lynora Sisk, Placer County Master Gardener

Did you know that there is a butterfly in our region that is named after a vine? The beautiful pipevine swallowtail derives its name from the exotic looking plant *Aristolochia californica* or California pipevine. This tropical looking plant is actually a California native and is the only host plant for the swallowtail larvae to feed on.

Pipevine can be a little slow to establish but once it takes off it can trail up shrubs, trees, and trellises, reaching 12 feet high. The vine is very adaptable to most soils and spreads by underground rhizomes. It's perfect for a shady location such as under oak trees. It naturally grows along streams in foothill canyons so you may have spotted it out hiking.

One important thing to be aware of is the pipevine contains a lethal toxin, aristolochic acid. This toxin helps to protect the swallowtail larva and butterfly, making them inedible to predators. This plant/butterfly relationship is truly amazing and one more example of the interconnectedness of nature.

According to Dr. Arthur Shapiro, professor of Evolution and Ecology at UC Davis, the pipevine swallow-tail flies in late winter to autumn and lays eggs on the young tender shoots of the pipevine. As the larva mature they move to feed on the larger leaves of the plant. He states that "most or all leaves end up damaged, but few are badly damaged." The pipevine usually stops its vigorous growth in June but then regenerates rapidly with new growth in the off-season.

As we know, butterflies are important pollinators in our gardens. So if you're willing to put up with a few chewed leaves, you can help benefit the butterfly population by planting our California native pipevine.

For more information about butterflies, be sure to check out Dr. Shapiro's butterfly website: http://butterfly.ucdavis.edu/



Memories of Flowers

by Gay Wilhelm, Placer County Master Gardener

Some of my earliest memories involve flowers and the people who gave me the gift of nature.

In the first grade my teacher soaked a sponge in water, placed it on a plate and sprinkled bird seed on top. A few days later grass sprouted. Miracle of miracles! I was in awe and hooked. It was magical.

My grandmother taught me how to make hollyhock dolls with toothpicks. A bud for a head, stuck with a toothpick to an upside down flower for a skirt with toothpick arms. soon I had an entire ballet ready for the stage! Every morning at breakfast my grandmother filled my bowl with fresh wild blackberries and love.

My mother showed me how you could make flowers talk! Pinching the jaws of snapdragons made them open and close and I could almost hear them whisper. She introduced me to the peppery taste of nasturtiums and the taste of funny faced Johnny jump ups. She helped me enter a county fair with a basket of white and red geraniums and I won a first place ribbon! She taught me funny names of plants like liverwort!

Spring would bring new wonders. Who could pass up a dandelion (wishing flower) blowing seeds in the wind and making a very secret wish? Recess would find all the girls making daisy chains with the little white daisies in the grass. The longest chain won!

Another not so pleasant memory was a very secretive beach bonfire with teenage boyfriend. Unfortunately we accidently burned poison oak with the driftwood! As the smoke blew in my face a hard lesson was learned.

Who can forget the holiday season when an evergreen tree was brought into the house? What a wonderful fragrance of pine adding to the dark winter days.

Fresh peaches, peas fresh from the garden—the list can go on and on. Do you have memories of your own? Thank a gardener and pass it on.

Do you have Hotline gardening questions?

Call the Master Gardener gardening questions? Hotline in your county Nevada Co. 530-273-0919 Placer Co. 530-889-7388



A portion of some of my blackberries are white to tan in color. It seems to occur in a random pattern, and usually affects a small percentage of the crop. This year, however, about 1/3 of the berries are affected - what causes this and how can I prevent it from happening?

by Pauline Kuklis, Placer County Master Gardener

Each "ball" of a berry is called a drupelet. A condition known as "White Drupelet Syndrome" causes one or more drupelets of a berry to turn white or tan in color. This condition is typically caused by ultra violet radiation which increases in intensity when there is a sudden increase in temperature, coupled with low humidity. Normally, growers see this early in the season, and it may go away with time. Berries can still be eaten or used in baking, despite looking a little odd. Refer to the following online articles for more detailed information:

http://ipm.ucanr.edu/PMG/r71800111.html https://rubus.ces.ncsu.edu/2015/06/white-drupelets/

Seeds Contain the Past and the Future

By Barbara Kermeen, Nevada County Master Gardener

Seed Banks

Some folks might think "my diet is mostly meat; why should I care about seeds?" Animals that are grown or that are hunted for food eat grasses, forbs, and grains that all begin with seeds. What if the seeds were gone? Without seeds, the population of the earth would go hungry.

Seed savers range from the home gardener, who saves a few squash or tomato seeds, to commercial seed vendors, to the Global Seed Vault.

Wait! The What? Somebody seriously considered the enormity of losing entire categories of seeds, and thus was born The Global Crop Diversity Trust. The Trust partnered with the Government of Norway to create the Svalbard Global

Seed Vault. Funded by the government of Norway and by the Bill and Melinda Gates Foundation, the Vault is deep within an abandoned mine, in an Arctic mountain, on an island, about 1,300 km north of continental Norway. The Vault began with more than 860,000 samples, originating from almost every country in the world.

Researchers claim that the Vault can weather any disaster from bombings to earthquakes. The fact that the Global Seed Vault exists begs the question "is this the world's only seed bank?" As safe

as it seems, it may still be "putting all our eggs in one basket." Didn't someone say that the Titanic was unsinkable? Do we need to worry about the safety of our reserved seeds and of their genetic diversity?

The Svalbard Seed Vault was created to store seeds. In cooperation with over 1,000 individual seed banks throughout the world, the Svalbard Vault acts as a back-up to the individual banks.

These individual seed banks concentrate either on saving the seeds of their particular geographic region, on saving seeds that are grown in a particular climate, or on protecting seeds of one particular category. For instance, the International Rice Research Institute in the Philippines has now saved seeds of over 3,000 varieties of rice.

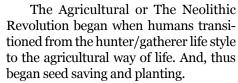
The Global Seed Vault was not intended to be a supermarket for those who think that having plants grown from exotic seeds would be nice. In fact, the Svalbard Vault is so secure that no one person has access to the individual secure storage containers within the Vault. Much like safety deposit boxes in financial institutions, each of the 138 sub-vaults requires two people, with individual codes, to open.

And then along came WAR.

The International Center for Agricultural Research in Dry Areas, in Aleppo, Syria, ran a major seed bank. In 2012, rebels took over the area, just one year into the civil war. Before it was forced to shut down, researchers at the Center were able to transfer thousands of seeds out of their facility. Many were sent to Svalbard.

So in 2015, the situation was so critical that the seed vault was opened for withdrawal for the first time. Seeds that were native to Syria were dispatched to countries with similar climates (Lebanon and Morocco), to be planted, to generate more seeds. Those seeds are intended to be planted in Syria, when its fields and its gardens could again be considered safe.

The Frugal Gardener Says Save Your Own Seeds!



I read recently, on the occasion of Pioneer Day in Utah, that there were thirteen pioneer skills that were important for everyone to learn. The Girl Scout in me guessed that the first on the list was building a fire; I was wrong. The first two on the list were gardening and seed saving. What could be a better example of reuse or recycling for us than seed saving?

The first seeds that I saved were from a volunteer tomato plant that grew up in the midst of a marigold border. For several years I grew the progeny of "Volunteer Tom," a bright red, tasty, succulent, indeterminate tomato. I collected Tom's seeds to save money and hoped for the best.

The caveat in seed saving is to make sure that you are saving the seeds from heirloom or non-hybrid plants if you want to replicate of the source of the seeds. Seeds from hybrids can be grown, too, but plants grown from them may always be a mystery. Maybe "Volunteer Tom" was an heirloom, maybe a hybrid. I'll never know. Maybe I just got lucky.

The basics of seed storage are that seeds must be cleaned, kept dry, cool, and out of sunlight. If seeds are not thoroughly dried before storage, they can rot, even if refrigerated. Or they can suffer frost damage in the freezer. They should be dried for at least two or three weeks. Seeds can be dried on a tray or cookie sheet covered with paper towels or butcher paper. Separated seeds will dry faster.

If you are not sure that they are dry, use a snap test or a shatter test. Large seeds can be snapped. If they won't snap, they will bend indicating that they are not ready for storage. Seeds too tiny to be grasped with two hands, for the snap test, can be tested by shattering. But small seeds dry faster than large seeds, so this drastic a method is probably unnecessary.

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Once seeds are dry, they should be placed in an air-tight container and refrigerated or frozen. They can be stored in small glass jars with tight-fitting lids, or bagged, then jarred. Consistency in temperature and humidity for storage is paramount. Freezing is preferable because of its more consistent environment.

The Resources and Further Reading sections at Seed Saver's Exchange and the Wikipedia article on Seed Saving are good places to start to obtain additional knowledge.

My final surprise is a new use for your vacuum food sealer: Save the bag scraps after you trim up the food that you vacuum seal and use the scraps



for seed storage. The picture above is my little bag of vacuum packed squash seeds. I put the bag in a canning jar and put the jar in the freezer. Multiple bags of seeds can be stored in one jar. A larger bag can be used to store all the commercial seed packets left over from the current season's planting.

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agri-cola, ae m tiller of the field, farmer, husbandme caulis, is m stalk, stem of a plant; cabbage colo, colui, cultum 3 to care for; a) to till, cultifarm; b) to tend; adj. cultus 3 cultivated, the culta, orum m/p/ tilled land, gardens, processo, crevi, (cretum) 3 to grow cultus m cultivation, labor, tilling; a) b) care, training, education; c) cultions, tis blooming, flowering floreo, ui 2 to bloom, blossom flos, oris m flower, blossom flos, oris m flower, blossom fodio, fossom 3 to dig, diffolium, i n leaf; folias herba, ae f grass, behortus, i m garderadix f root; a viridis, e grant grant

Find Out What Those Weird Plant Names Mean

by Peggy Beltramo, Placer County Master Gardener

This month, let's look at a really important aspect of the binomial naming system.

When planting a new plant, it is imperative that you consider how large it will be at maturity. It is very disappointing to have a cute little plant grow into a thug that crowds out its neighbors or outgrows its allotted space.

Many specific epithets, the second words in the binomial naming system, refer to the shape or size of a plant. For instance, *prostratus* or *procumbens* refers to growing flat to the ground and

repens indicates a creeping habit, but *columnar*, or *linearis* signal an upright or narrow shape and *scandens* tells you that this is a climbing plant. A plant labeled *nanus* is a small species, since the Greek word *nanos* means dwarf. After seeing *frutescens* and *fruticosa* as part of plant names for years, I just learned that these plants will be shrubby, since *frutex* is Latin for shrub.

The trend with growers to use only the genus to label a plant appears to be increasing, so you need to check with a nursery salesperson to be sure you are getting what you are expecting. If a nursery label has only the genus of a plant you will never know its ultimate size. For instance, *Mahonia repens*, a creeper, reaches eighteen inches, while *Mahonia fremontii* can top out at ten feet! Do your homework and choose a plant with its whole name, then be sure you know what you are getting. Size DOES matter!



Mahonia repens (left), photo by Barry Breckling, and Mahonia fremontii (right), by Gary A. Monroe, hosted by the USDA-NRCS PLANTS Database.

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Events Calendar

Nevada County Demo Garden

1036 W. Main St., Grass Valley (on NID Grounds)

Placer County Demo Garden

11477 E. Ave., Auburn (Senior Garden, DeWitt Center)

Nevada County events in green; Placer County events in yellow All events are free unless noted otherwise

June

June 10

10:00 am - noon

Good Bugs in the Garden: For Kids and Parents Too

Nevada County Demo Garden

June 17

8:00 - 9:00 am

Build a Pollinator Corridor

9:00 - 10:00 am

Remove Your Lawn and Create a Pollinator Paradise

Placer County Demo Garden

June 21

11:00 am-1:00 pm

Open Garden Day:

Tour the Garden and

Ask a Master Gardener

Placer County Demo Garden

July

July 15

9:00 - 10:00 am

Harvesting and Preserving Your Summer Crop

Placer County Demo Garden

July 19

11:00 am-1:00 pm

Open Garden Day: Tour the Garden & Ask a Master Gardener

Placer County Demo Garden

Visit Our Websites for Up to Date Information

Nevada County Master Gardeners ncmg.ucanr.org

Placer County Master Gardeners pcmg.ucanr.org

August

August 9, 10, 11, 12, 13

10:00 am - 7:00 pm

Visit the Master Gardeners Booth at the Nevada County Fair

Come to talk gardening and pick up information. Daily Workshops, Composting Demos and Fun for "Little Sprouts."

(See NC Fair Guide for schedule)
Ag-Sperience area of Nevada County
Fairgrounds, 11228 McCourtney Rd,
Grass Valley

August 19

10:00 am-noon

Compost: a Gardener's Best Friend

Nevada County Demo Garden

August 19

9:00 - 10:00 am

Year Round Vegetable Gardening: How to Grow More Food Than You Ever Thought Possible During the Fall/Winter Months

Placer County Demo Garden

August 23

11:00 am-1:00 pm

Open Garden Day:
Tour the Garden and

Ask a Master Gardener

Placer County Demo Garden

August 26

10:00 am-noon

How to Grow Cool Season Vegetables

Nevada County Demo Garden

September

September 2

10:00 am - noon

A Homeowners Guide to Seed Saving

Nevada County Demo Garden

September 9

9:30 am - 1:00 pm

"Bite Me" Tomato Tasting & Open House

Nevada County Demo Garden

September 16

10:00 am-noon

Growing Great Soil: From Lasagna Gardening to Cover Crops

Nevada County Demo Garden

September 16

9:00 - 10:00 am

Lasagna Gardening

Placer County Demo Garden

September 20

11:00 am-1:00 pm

Open Garden Day: Tour the Garden and Ask a Master Gardener

Placer County Demo Garden

Visit Master Gardeners at Local Farmers' Markets

8:00 am to noon Mid May–Mid Sept. at the Saturday Growers Market, North Star House, **Grass Valley**

8:30 am to 1:00 pm every Tuesday, May to September, near Whole Foods at the Fountains, **Roseville**

8:00 am to noon 1st & 3rd Saturdays, May to September, Old Town Courthouse parking lot in **Auburn**

8



About Master Gardeners

Our mission as University of California Master Gardener volunteers is to extend research-based gardening and composting information to the public through various educational outreach methods. We strive to present accurate, impartial information to local gardeners so they have the knowledge to make informed gardening decisions in regard to plant choices, soil fertility, pest management, irrigation practices, and more.

The Master Gardener volunteer program was started in the early 70's at the Washington State University. Farm Advisors became overwhelmed by all the incoming calls from home gardeners and homesteaders so they trained volunteers to answer these questions and the "Master Gardener Program" was born. The first University of California Master Gardener programs began in 1980 in Sacramento and Riverside counties. The Nevada County and Placer County Master Gardener Associations began soon thereafter in 1983.

Over 30 Years of Serving Placer and Nevada Counties

Production Information

The Curious Gardener is published quarterly by the University of California Cooperative Extension Master Gardeners of Placer and Nevada Counties.

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Placer County Master Gardener

Have a Gardening Question?

Call our Hotline

Placer County Residents 530.889.7388

Nevada County Residents 530.273.0919

Master Composter Rotline 530.889.7399

UC Cooperative Extension Placer County

11477 E Avenue Auburn, CA 95603 530.889.7385 office 530.889.7397 fax

email: ceplacer@ucdavis.edu

UC Cooperative Extension Nevada County

255 So. Auburn Street Grass Valley, CA 95945 530.273.4563 office 530.273.4769 fax

email: cenevada@ucdavis.edu

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Log on to http://pcmg.ucanr.org/ Curious_Gardener_Newsletter/ to sign up for your electronic delivery.

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University policy also prohibits reprisal or retaliation against any person in any of its programs or activities for making a complaint of discrimination or sexual harassment or for using or participating in the investigation or resolution process of any such complaint.

University policy is intended to be consistent with the provisions of applicable State and Federal laws. Inquiries regarding the University's nondiscrimination poli-

University policy is intended to be consistent with the provisions of applicable State and Federal laws. Inquiries regarding the University's nondiscrimination policies may be directed to the Affirmative Action/Equal Opportunity Director, University of California, Agriculture and Natural Resources, 1111 Franklin Street, 6th Floor, Oakland, CA 94607, (510) 987-0096.