# HORTICULTURE AND CROP SCIENCE

LEARN. DO. LEAD. | CAL POLY | FALL 2019

### Field Study

CAMPUS-GROWN REAL-WORLD PROJECTS





### Growing Our Program, Facilities

As we begin another cycle of program review to identify our strengths and opportunities for improvement, we will reach out to industries and other academic institutions. We aim to maintain a program that supports our graduates by making them highly desirable by industry. This includes strengthening the areas of food safety, pest management, environmental stewardship, healthy soil management, urban horticulture, and sustainable and organic agriculture. If you would like to comment, please contact me or any of the faculty or staff with your input.

These are exciting times for our "sister" department, Wine and Viticulture. Construction has begun on the JUSTIN and J. LOHR Center for Wine and Viticulture, which will begin with a 12,000-square-foot Grange Hall and a state-of-the-art 5,000 case, bonded 15,600-square-foot winery to replace the winery that we shoe-horned into the Crops Unit years ago. The Grange Hall will serve as a conference and meeting venue with incredible views of Bishop Peak. This first stage will include a complete renovation of the Crops Unit into the Plant Sciences Complex, located on Highland Drive. The complex will support teaching and research in environmental plant production, plant pathology, soil health, automated agriculture, water management and postharvest processing, and food safety. It will include cutting-edge greenhouses named after longtime supporter George Wurzel of the J.G. Boswell Co. The complex will also include a plant pathology lab named after Bee Sweet Citrus CEO Jim Marderosian for his generous support of our program. The old Crops Unit Building will be converted to a farmers market to sell our produce and other student-grown products.

Another project, the William and Linda Frost Center for Research and Innovation, is a collaboration among the colleges of Agriculture, Food and Environmental Sciences, Science and Mathematics, and Liberal Arts. The 100,000-square-foot, \$125 million complex will contain the Boswell Ag Tech Center with labs for food sensory, food safety, and product development. Construction has begun, but don't worry — the infamous river red gum (Eucalyptus calmaldulensis) outside of Building 10, the largest of its kind outside its native Australia, will be saved.

The Summer Undergraduate Research Program, designed to provide students and faculty with funding to facilitate student-faculty projects over the summer, has been a huge success with a positive impact on student learning. I highly encourage our supporters to consider any amount up to a \$5,000 donation to fund each faculty-student partnership that will occur next summer. Use the envelope included or contact me for more information. SURP ends in August with a conference at which participating students will present the results of their projects in an interactive poster session with faculty, staff, students, the public and industry representatives.

Professor Wyatt Brown retired in June 2019; however, he plans to participate in the Faculty Early Retirement Program. We are turning his position into a post-harvest microbiologist to accommodate recent trends and regulations in food safety.

SCOTT STEINMAUS | DEPARTMENT HEAD

Scott Steinmaus

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ON THE COVER: Graduate student Omar Alexander Gonzalez-Benitez (Agriculture and Environmental Plant Sciences, '17) evaluates a strawberry anthracnose experiment in Field 25. Gonzalez-Benitez was elected an officer in the national Minorities in Agriculture, Natural Resources and Related Sciences organization. Read about it on Page 16.

THIS PAGE: Tomatoes thrive

in Cal Poly's hydroponics greenhouse.

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H. Paul Fountain oversaw the first planting of the Trestle Vineyard.

#### IN MEMORIAM

### H. Paul Fountain

Cal Poly alumnus and viticulture and fruit science Professor Emeritus H. Paul Fountain died Feb. 18, 2019.

A lifelong agriculturist, Fountain's varied work experience included positions as a senior agriculture inspector, an orchard and vineyard manager and consultant, and 36 years as a professor at Cal Poly. During his time at Cal Poly, he oversaw the first planting of a 3-acre section of the campus' teaching vineyard, the Trestle Vineyard, which allowed students to enhance their Learn by Doing education in viticulture.

After he retired in 2001, he and his wife, Dorothy, created a gift endowment to provide funds for continued development and maintenance of the vineyard for years to come. Fountain is survived by his wife, three children and four grandchildren.

Contributions can be made to the H. Paul Fountain Teaching Vineyard Fund. Checks should be made payable to Cal Poly and include "Fountain Vineyard Fund #6451" in the memo field. Mail checks to Cal Poly, College of Agriculture, Food and Environmental Sciences, c/o CAFES Advancement, 1 Grand Ave., San Luis Obispo, CA 93407-0250. Secure, online donations can be made online at http://bit.ly/calpolyfountainmemorial.



Associate Professor Benjamin Hoover specializes in sustainable nursery production.

### He's Moving Up

### BENJAMIN HOOVER EARNS TENURE, PROMOTION

Benjamin Hoover of the Horticulture and Crop Science Department was among a group of seven College of Agriculture, Food and Environmental Sciences faculty members who were awarded tenure and promotion to associate professor, effective fall quarter 2019.

Hoover, who specializes in sustainable nursery production, joined the Cal Poly faculty in January 2013. He teaches Plant Propagation, Nursery Crop Production, Horticultural Production Techniques, Plant Materials I and II, Experimental Techniques and Analysis, and the Tomato Spectacular Enterprise Project. He has also served as primary advisor to two students who completed master's degrees. Before coming to Cal Poly, Hoover worked in the nursery industry in Pennsylvania, growing and selling plants in wholesale and retail settings. His research interests include propagation substrates, nursery production methods, and landscape plant selection.

Hoover serves as faculty advisor to the Horticulture Club and as the head coach for the Cal Poly National Collegiate Landscape Competition Team.

He earned his bachelor's degree in horticulture from Temple University and his master's and doctorate degrees in horticulture from Penn State University.

# Life Is Bountiful

#### SHASHIKA HEWAVITHARANA'S FIELD BRIMS WITH TEACHING AND RESEARCH

For Shashika Hewavitharana, the Horticulture and Crop Science Department's newest faculty member, juggling is not a part of her job description, but she finds it to be the most challenging aspect of her day.

The plant pathologist, who started at Cal Poly in January 2019, must divide her time carefully: teaching, conducting research, conducting strawberry disease diagnostics, and sharing research outcomes with strawberry growers as part of her position with the Cal Poly Strawberry Center.

"I love the three components of my job," Hewavitharana said. "I get to share my research as well – not only other researcher's findings. I really like educating growers. It's a different kind of teaching."

Education was not a distant concept to Hewavitharana, whose parents were middle school teachers in her home country, Sri Lanka, and she was a teaching assistant after earning her BSc. degree at the University of Colombo, Sri Lanka.

Her interest in plant pathology was ignited during her undergraduate studies. "My plant pathology professor, Dr. Wijesundera, taught in a way that made me want to follow that career path."

At Cal Poly, Hewavitharana taught the Introduction of Plant Pathology lab course with Assistant Professor Shunping Ding and the People, Pest and Plagues lab course with Professor Mark Shelton. Ding and Shelton served as mentors to the new faculty member, who admits it would have been a challenge teaching those on her own.

This fall she is sole teaching a new course that she developed: Advances in Plant Pathology.

Hewavitharana introduces Learn by Doing activities by engaging students with real-life situations and by fostering creativity. "I always have something for them to observe. Those who are interested in learning more than the standard curriculum, I take them into the field or my research lab."

She hopes to make an impact on her students, especially the women for whom balancing careers and families can be stressful. "I try to teach not just one subject but about life," she said. "I share how I deal professionally and as a mother."

In addition to her bachelor's degree in plant biotechnology, she earned her master's and doctorate degrees in plant pathology at Washington State University.

Assistant Professor Shashika Hewavitharana splits her time between teaching and strawberry disease-related research.



LEFT: Susan Snyder navigates the wilderness in Golden Ears Provencial Park, British Columbia.

# FACULTY MEMBERS SHARE THEIR EXPERIENCES AT WORK AND PLAY

**BAD TIMING** – Susan Snyder writes: I learned that when I was 8,000 feet up on a really pointy mountain that I am scared of heights.

SCALED OF INCIDENT. STAYING PLANTED – Jeff Wong writes: I stayed here, planted sweet corn, tomatoes and pumpkins, worked with students. Crops look great, tasted great and less filling. And I sent "ankle-biter" No. 1 to college.

**BUSY IS AS BUSY DOES** – Shashika Hewavitharana writes: My summer was very busy. My father-in-law visited us from Sri Lanka. He loved Cal Poly and enjoyed the Poly Canyon hike. I contributed to two collaborative grant proposals. My SURP (Summer Undergraduate Research Program) student, SURP (Summer Undergraduate Research Program) student, Megan Taylor, and I worked on a new project, and we got good preliminary results that led to her decision to do a senior project with me. I prepared for the new Plant Pathology course, Advances in Plant Pathology. I also attended the American Phytopathological Society's annual meeting and American Phytopathological Society's office. I went camping in Watsonville, which was fantastic.

Watsonville, which was the second sec

that my oldest model. HOME, SWEET (TINY) HOME — Dennis Eugene Smith writes: I realized last spring break on a trip to Thailand that we Americans live in such large homes compared to the rest of the world. So, having a friend who had a loft on top of a barn, I decided to help him turn it into a tiny home. It was fun and challenging.

WORK AND PLAY — Ashraf Tubeileh writes: Two of my grad students defended their theses over the summer. I attended a conference in Las Vegas. In July, the family, including my daughter, Sara, visited the west end of the Grand Canyon, including venturing onto the skywalk. Also in July, I gave a talk, "Organic growing practices," at the Organics 101 Seminar, organized by the Santa Barbara County Agricultural Commissioner's office in Santa Maria.

NEW ADDITION — Benjamin Hoover writes: I presented a research poster at the 2019 ASHS Annual Conference in Las Vegas. I saw one of my students, a recent agricultural and environmental plant sciences alumnus, at the conference presenting a research poster of his own. My wife, Pam, and I welcomed new baby Martin Crane Hoover into the family. He joins big brother, 2-1/2-year-old Dietrich. Little "Mars" is already showing signs of mastering botanical Latin.

TOO MUCH OF A GOOD THING - Dave Headrick writes about his Southwest road trip: I visited four states in 10 days; drove 2,700 miles; walked 34 miles, nine miles off road; and ate 1 billion calories. 📕

CLOCKWISE, FROM TOP LEFT: Dennis Eugene Smith helped to build a tiny home; Ashraf Tubeileh snaps a selfie with his daughter, Sara, at the Grand Canyon; Dave Headrick captures an iconic Southwestern landscape; Ben and Pam Hoover hang out with their sons Dietrich (left) and "Mars."

### Home On the Range THE UPS AND DOWNS OF LIVING ON CAMPUS



On an isolated stretch of farmland on campus, near Highway 1 and smack in the middle of the Field 25 vegetable farm, sits the Parker Ranch House, a 100-plus-year-old structure that has been home to a few Horticulture and Crop Science staff members and their families over the years.

Dan Chesini, plant science operations manager, moved into the approximately 1,700-square-foot house in July 2019 with his wife, Cal Poly alumna Jenni Chesini (formerly Jenni Taylor, Business, '03), and their three sons, ages 5, 3 and 1. Living on campus is all part of the job, but he's not complaining.

"I think it will be fun to live on campus," Chesini said. "I grew up on a farm in Northern California, so it's like being back home."

Like anywhere, there are pluses and minuses. "The big advantage is I'm at work every day," he said. "I enjoy the open space, and there are good people around all the time. The downside? I'm always at work. But it's all good."

Launnie Ginn (Crop Science, '74; M.S., General Agriculture, '98) lived in the house from 1999 until 2017 while working as the department's instructional support technician.

It was important Ginn be there 24/7 to protect the citrus and avocado crops during a freeze, when he'd have to turn on the wind machines and heaters. He also had to keep an eye on things. "Pipes break, animals can cause problems, and occasionally I'd run off a vandal or thief," he said.

He recalled one night in late summer or early fall. "Our dog was acting funny around 3 a.m. I knew something was going on, so I drove down the road with my lights off. My phone was dialed to the campus police, and my finger was ready to hit send," he said. "All of a sudden, a few students popped out from this tall field of corn. They'd decided to go camping in the corn that night."

Ginn also pulled his share of cars out of the mud. "When it rained, it got very muddy. Students didn't seem to make the connection that rain caused the roads and the fields to get muddy, and they'd get stuck. Once I had to pull out a campus police car."

He put in a lot of hours living on campus. "People think it must be great to live where you work," he said. "It is and it isn't. I didn't have to commute, but then I was never really off work, either. It's a neat old house, even with all the drafts. I'm a musician, and sometimes I'd sit outside and write and play guitar. I loved that."

Plant science Operations Manager Dan Chesini works in Field 25 and lives there with his family in the Parker Ranch House (right).



Retired Instructional Support Technician and alumnus Launnie Ginn has 18 years of memories living in the Parker Ranch House.







# Hes Retired

But while Professor Wyatt Brown pursues myriad leisure-time interests, he still keeps a hand in Postharvest Lab activities hen he first arrived on campus to teach in 1991, after completing his doctoral degree at Cornell University, Horticulture and Crop Science (HCS)

Department's Wyatt Brown might have taken himself a bit too seriously, the recently retired professor acknowledged.

Over the ensuing years, he claims to have learned to relax; but he hasn't slowed down.

Brown's new retirement phase began right after the 2019 spring commencement. After 29 years of teaching, he appreciates having the time to pursue other interests, such as gourmet cooking, traveling, and rigorous workouts at the gym.

He also plans to return to campus one quarter a year to teach his signature Postharvest Technology class. And, a UC Davis colleague







has enlisted his help in conducting postharvest research as well as co-authoring a book, "Preparing Fruit for Consumers."

During his nearly three decades at Cal Poly, Brown accumulated numerous accolades and honors. He's won awards for research as well as the university's Distinguished Scholar Award (2014-15) and the College of Agriculture, Food and Environmental Sciences' Outstanding Faculty Award (2009), Outstanding Advisor Award (2015), Outstanding Research Award (2014), and Outstanding Service Award (1999).

He estimates he has taught upwards of 4,000 students, all the while working to stay positive in class.

"I tried to bring humor to the classroom, even when dealing with hard concepts," Brown said. ► Above, from left: Wyatt Brown embarks on a boat tour from Sorrento, Italy; savors a meal that he and others prepared in an Umbria cooking class; and enjoys a regular workout routine that "has increased my strength, positivity and overall health."

Background: A port town that Brown visited on the island of Procida, near Naples, Italy.

#### FACULTY NEWS

#### CONTINUED FROM PAGE 11

"I wanted students to have some fun. I found that using analogies helped make the material relevant to students."

He found great satisfaction watching students learn. "It's really rewarding to see students reach that "aha" moment when they finally understand a difficult concept," Brown said.

To help them reach that point of comprehension, he strived to keep his content interesting.

"When you teach the same thing over and over, it's difficult to keep it fresh," he said. "I compare it to Broadway actors and how they have to keep their performance vibrant every day, week after week. I tried to keep my classes current and exciting."

Brown's efforts seemed to have paid off. He stays in contact with many students; some have remained friends since his first year of teaching. "I've been invited to numerous weddings and have watched my former students raise families," he said.

His work to equip the Postharvest Research Lab also paid off. With a keen interest in postharvest research, Brown found the lab "sorely lacking" in the '90s.

"When I started, the Postharvest Research Lab was rudimentary, at best," he said. "We had very little equipment. The heart of a postharvest research lab is refrigeration. Back then, we had an old refrigerator to support our teaching efforts. But we were able to get the money to install three state-of-the art walk-in controlledenvironment rooms. We now have a fairly well-equipped postharvest lab. At one time, I oversaw a pretty robust research program with as many as five graduate students working simultaneously with me.

"Research is the tail, and teaching is the dog" he continued. "The dog should be wagging the tail; meaning, the research is necessary, but it's necessary to support teaching."



Brown will return to campus one quarter a year to teach his Postharvest Technology class.

Brown admits he was a challenging teacher but says his students learned a lot. "I hope they consider me a fair person — someone passionate about what he was teaching ... someone who did not take his job lightly.

"I think you only get out as much as you put in," he continued. "I advise students to make every day count. Work hard, study hard, earn your play — don't take it for granted. I try to say what I mean and mean what I say. And I try to treat people as I would want to be treated."

Without the daily obligations of teaching and advising, Brown is doing more of what he wants to do. Over the summer he traveled with friends to Umbria, Italy, then drove to the Amalfi Coast. He now enjoys entertaining and whipping up gourmet French, Italian and Creole meals.

"I have enough 'things'," he said. "Now I want to spend my time and money creating memories." "I tried to bring humor to the classroom, even when dealing with hard concepts. I wanted students to have some fun. I found that using analogies helped make the material relevant to students."

### **Illuminating Lessons**

### WYATT BROWN CO-PRODUCES VIDEO SERIES ON VEGETABLE PRODUCTION

A new 26-episode weekly series on YouTube does give the next generation of vegetable crop workers valuable industry knowledge, leading to more effective stewardship practices.

Recently retired horticulture and crop science Professor Wyatt Brown (See related article, Page 10) was part of a team led by UC Cooperative Extension Vegetable Crops Specialist Jeff Mitchell to develop a series of videos designed to spark interest and train future farmers and agricultural workers in comprehensive horticultural, economic and environmental stewardship skills.

The videos depict state-of-the-art technologies and techniques used today in many production regions in California and in other parts of the world. They also examine the increasingly popular cottage farming systems that are popping up in urban areas to allow easy access to healthful foods.

"Field trips to production areas are difficult to fund and justify," Brown said. "The videos were developed partly to allow instructors to show traditional and innovative techniques and equipment associated with many crops and aspects of the the state's vegetable production industry.

"California grows approximately 50% of the vegetables produced in the U.S., and there is a strong need in the workforce for knowledgeable and well-trained graduates," Brown continued. "We're proud of the series and confident it will help meet the needs of graduates and California's agriculture industry. We also hope the videos will be used by universities and schools across the nation, as many of the techniques shown are not exclusive to California."

The team that produced the videos includes professors Kem Saichaie from UC Davis, Anil Shrestha from Fresno State, and Lee Altier from Chico State. The project was funded through the California Department of Food and Agriculture's Specialty Crops Block Grant program.

The series will be available to high school and college agriculture professors for classroom use. It is available to the public on the UC Agriculture and Natural Resources YouTube page (https://www.youtube. com/ucanr) on a playlist titled "Training of a New Generation of California Vegetable Producers."

Left: California industry representatives in the videos include John Diener of Red Rock Ranch Inc. and Laurie Foletta of Rio Farms/Gills Onions.

Below: Red Rock Ranch's tomato harvest.

A new, state-of-the-art Plant Sciences Complex planned for the corner of Highland Drive and Mount Bishop Road, near one of the main entrances to campus, is rooted in an interdisciplinary approach combining Cal Poly's agriculture and bioscience resources to conduct world-class teaching and research.

Preliminary plans for the complex include three buildings: a high-tech greenhouse encompassing about 40,000 square feet of space, a two-story lab building with approximately 36,000 square feet, and an approximately 13,500-square-foot fruit and vegetable processing building — all on about 5.5 acres of land.

The facility will be entirely funded by private donations.

The Plant Sciences Complex will include a learning center next to Cal Poly's plant production fields to support specialty crop and managed environment production. The lab, greenhouses and processing building will benefit from close access to the production fields.

## Growing Our Facilities

#### PLANS ARE UNDERWAY TO FUND AND BUILD A PLANT SCIENCES COMPLEX ON CAMPUS

The complex will also include support for teaching and applied innovation in soil health, water and air quality, plant harvesting and processing, and food safety, as well as a site for automation and systems testing. In addition, an exterior plaza and future farm store will create a synergy and gathering place for students who often attend classes in outlying agriculture units.

Programming will include the Horticulture and Crop Sciences, Bioresource and Agricultural Engineering, Natural Resources Management and Environmental Sciences and Wine and Viticulture Preliminary plans for the complex include a high-tech greenhouse, a two-story lab building, and a fruit and vegetable processing building.

departments, as well as the Cal Poly Strawberry Center.

For updates on the project, visit https://cafes.calpoly.edu/giving/ plant-sciences-complex.

Anyone interested in making a donation toward the project should contact Russ Kabaker, assistant dean for CAFES' Advancement and External Relations, at 805-756-6601 or rkabaker@calpoly.edu.

# Flower Power Poly Plant Shop Marks 50TH YEAR

The Poly Plant Shop, which held its grand opening as the Flower Shop on Oct. 11, 1969, has been serving as a prime example of Learn by Doing for 50 years.

Located at the end of Via Carta Road, the shop sells a variety of flowers, indoor and outdoor plants, and landscape materials, while providing students the opportunity to gain hands-on experience managing all aspects of a garden center operation.

Some things haven't changed since its opening: Student-grown plants are sold to benefit student efforts and

AEPS junior Boden M. Cunningham prepares for the springtime succulent sale at the Poly Plant Shop.

the horticulture program. Poinsettias are sold in late November through December to commemorate the holiday season, roses are featured in February, and tomatoes take center stage in April. Student floral designers create award-worthy arrangements that are available for sale for special events and occasions.

Some things have evolved over time, however. Carnations are no longer grown as a major crop; orchids are now available as both potted flowering plants and as cut flowers. More than 50 of types of cut flowers are student grown and made available to student floral designers.

The Flower Shop became the Poly Plant Shop, which then became two

### MARKS 50TH YEAR

entities: Poly Plant and Poly Plant and Floral Design, offering oncampus delivery services and on-campus sales events such as Friday Flowers.

Flowers and plants can also be purchased at off-campus sites, including the San Luis Obispo Farmers Market at the Embassy Suites parking lot in San Luis Obispo.

Floral designs and potted plants can be ordered at polyplantshop.com, and students and customers can keep up with the Poly Plant Shop and Poly Plant and Floral on Facebook (https://www.facebook. com/polyplantshop) and Instagram (instagram.com/polyplantshop).



### **A Golden Opportunity**

### GRAD STUDENT IS ELECTED VICE PRESIDENT OF NATIONAL ORGANIZATION

Cal Poly graduate student Omar Alexander Gonzalez-Benitez (Agriculture and Environmental Plant Sciences, '17) was recently elected region VI graduate student vice president for the national Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS) organization. He is serving a one-year term, from May 2019 to 2020.

The nonprofit MANRRS is a leadership training agency that promotes academic and professional advancement by empowering minorities in agriculture and related industries.

As an MANRRS officer, Gonzalez-Benitez will represent dozens of universities and members across the nation and function as an ambassador, meeting with leaders in



agriculture, agribusiness and professional organizations, as well as local, state and federal government officials.

"I was filled with joy knowing I could serve the MANRRS community and give back to the organization that has provided me with many opportunities," Gonzalez-Benitez said. "I want other students to experience similar opportunities."

Gonzalez-Benitez credits MANRRS for pushing him to expand his boundaries. "At MANRRS I have been challenged to step out of my comfort zone, and that has helped me grow professionally and individually," he said. "The many MANRRS workshops and trainings I have been part of has given me confidence, and I continue to dream and set bigger goals that I didn't think were possible before."

As graduate student vice president, he will work with the organization's national graduate student president and president-elect to recruit new student officers whose vision aligns with the organization.

"I will also act as a director during activities for region VI graduate student members, including facilitating communication among chapters and presiding over meetings. Additionally I will help develop and implement initiatives to recruit, retain and track graduate student members and alumni."

This isn't Gonzalez-Benitez's first leadership role. As an undergraduate, he was vice president for the Cal Poly MANRRS chapter (also known as Latinos in Agriculture). After serving as vice president for the Crops Club in the 2018-19 school year, he picked up the reins as Crops Club president for 2019-20.

Gonzalez-Benitez is pursuing his graduate degree in agriculture, with a specialization in plant protection. He expects to graduate in June 2020.

Omar Alexander Gonzalez-Benitez serves as region VI graduate student vice president for the national Minorities in Agriculture, Natural Resources and Related Sciences organization.

# Floral Finery



#### CAL POLY'S FLORAL DESIGN TEAM WINS FIRST OVERALL IN NATIONAL COMPETITION

Cal Poly's Floral Design Team took home three first-place awards from the American Institute of Floral Designers (AIFD) National Student Competition, held at the Paris Hotel in Las Vegas on July 6, 2019.

The team won first overall and first in the Flowers to Wear and Bridal Bouquet categories. The team also placed fifth in Sympathy Design and 10th in Interpretive Design. Competing team members were Alyssa Snow, a senior agricultural education major, Amber Buzzard, a junior studying animal science, and recent graduate Megan Borzone (Horticulture and Crop Science, '19).

In the individual competitions, Buzzard earned second place overall, won first in Flowers to Wear, and placed sixth in both the Wedding Bouquet and Sympathy Design categories.

Borzone came in third place overall, second in Wedding Bouquet, and fourth in Flowers to Wear.

"This contest was extremely difficult because some of the categories actually changed the night before the contest," said Cal Poly team advisor and coach Melinda Lynch, floral design lecturer in the Horticulture and Crop Science Department. "Our students had to adapt to the change and still produce creative and cleanly executed designs. I am very proud of how each member stayed focused and level-headed."

In all, 51 students from 13 institutions of higher education in the U.S. and Canada competed. Some of the schools participating included Texas A&M University, Mississippi State University, Missouri State University, Ohio State University, New Mexico University, and Tennessee State.

Above: Megan Borzone's bouquet placed second in the nation.

Floral Design Team advisor Melinda Lynch (left) with team members Amber Buzzard, Megan Borzone and Alyssa Snow.



### GRAD STUDENT JOEL LEONARD'S RESEARCH WINS FIRST ROUND IN CSU COMPETITION

Graduate student Joel Leonard's compelling work in pest control earned him a first-place prize in the first round of the 33rd annual California State University Student Research Competition held on campus in February.

Leonard, who is pursuing a master's degree in agriculture under the guidance of Professor Dave Headrick of the Horticulture and Crop Science Department, was one of 22 Cal Poly student researchers who competed in the first round of the CSU competition. A total of 10 presentations were selected to compete at the statewide level.



Leonard's project, "Evaluation of Pheromone Mating Disruption for California Red Scale in Commercial Citrus," involves disrupting pheromone mating habits of insects in citrus. "Pheromone mating disruption is a newer method of insect control," Leonard explained. "The female releases a sex pheromone to attract males when she is ready to mate. Pheromone mating disruption uses synthetically reproduced sex pheromone to confuse males and stop mating. The pheromone is put out in the orchard and will theoretically reduce the population."

His target insect, the California red scale, is one of the world's biggest citrus problems. The insect has developed a resistance to pesticides. Leonard's sustainable pest management approach has proved 90 to 100% effective in reducing the population of insects when the population isn't extremely high to start.

> The CSU Student Research Competition is designed to promote excellence in undergraduate and graduate scholarly research and creative activity. It showcases the innovative research and creative activities of CSU students in all academic programs offered by the CSU. Student participants make oral presentations before juries of professional experts from major corporations, foundations, public agencies, colleges and universities of California.

Joel Leonard (above) uses CheckMate CRS (above, left) to dispense a synthetically reproduced pheromone into citrus orchards to combat California red scale (left).

# Making the Top 20

### CAL POLY STUDENTS STAND OUT IN A CROWDED FIELD AT NATIONAL LANDSCAPE AND HORTICULTURE COMPETITION

Two Cal Poly Horticulture and Crop Science Department students ranked in the top 20 out of nearly 800 students competing in the National Collegiate Landscape Competition (NCLC) held at Colorado State University in Fort Collins, Colorado, in March 2019.

Agricultural and environmental plant sciences (AEPS) junior Tim Klittich ranked 16th, and senior Jacob Mattlin ranked 19th out of 788 students. They were joined by seven other Cal Poly students and Assistant Professor Benjamin Hoover, head coach of the Cal Poly National Collegiate Landscape Competition Team. In all, 64 schools competed at the three-day event. The Cal Poly team placed 22nd overall.

Students competed in 29 events in such categories as Computer-Aided Landscape Design, Plant Problem Diagnosis, Compact Excavator Operation, and Business Management. They also attended preparatory workshops and a career fair associated with the NCLC. "Each team member competes in three to five events, some as individuals and some with a teammate," Hoover explained. "Students get to demonstrate the knowledge and skills they have acquired in classes, internships and life experiences to solve problems and accomplish tasks."

Every year the competition attracts more than 700 students from two- and four-year colleges who demonstrate skills in real-world, competitive events. Next year's contest will be hosted by Michigan State University in East Lansing, Michigan.

> Cal Poly students (foreground, from left) Timmy Klittich, Molly Salomon, Jacob Mattlin install the landscape they designed for the competition.



### CAL POLY

Horticulture & Crop Science COLLEGE OF AGRICULTURE, FOOD & ENVIRONMENTAL SCIENCES

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### A Research Program Worthy of Support

Research is critical to any society. It builds knowledge and facilitates learning. It advances science, technology and other fields. It leads to discoveries that address pressing challenges.

Cal Poly is keenly aware of the importance research plays and has taken steps to advance scholarly inquiry while also enhancing undergraduate education. Through its Summer Undergraduate Research Program (SURP), the university has elevated Learn by Doing to a new level, fueling hands-on learning by partnering undergraduates with faculty members conducting research.

In the last two years, nearly a dozen Horticulture and Crop Science (HCS) Department students and faculty members participated. Visit the HCS website at aeps.calpoly.edu to see some of the students, their faculty mentors, and the projects they worked on.

HCS is seeking support to continue to expand SURP. Please consider a donation (using the enclosed envelope) to advance this important component of Learn by Doing. For details about how you can get involved, please call the department at 805-756-2279 or email aeps@calpoly.edu.

Agricultural and environmental plant sciences senior Madeleine MacConnell grinds pomegranate leaves to evaluate their nutrient concentration in an effort to improve sustainable fertilizer practices.