

COLLEGE OF AGRICULTURE, FOOD
& ENVIRONMENTAL SCIENCES

cultivate

CONNECT
—
LEARN
—
LEAD

ISSUE 12 SUMMER 2020

THE YEAR OF

VIRTUAL LEARNING

A NOTE FROM THE DEAN



COMMUNITY CONNECTION

As I write this letter, we are planning for about 13 percent of fall quarter classes to be held in-person with the rest being held virtually. We just received approval for first-year students to be housed on-campus in learning communities that have been adapted to ensure state and county prevention guidelines can be met. Faculty and staff will primarily be working remotely, except as needed. And students, faculty and staff will all be accommodated should they not feel comfortable living or working on campus. We will continue to closely monitor local health conditions and adjust our plans as needed.

There remains much uncertainty, but as we prepare for the academic year's demands, we have not lost sight of our longer-term mission: delivering a world-class Learn by Doing education. In this issue you'll read more about how the Cal Poly community has continued to do just that when faced with these unprecedented challenges.

The CAFES community — faculty, staff and students alike — have faced this pandemic with typical Mustang spirit. It wasn't easy, but our faculty have been ingenious in figuring out ways to facilitate hands-on learning at home; our staff have worked tirelessly to provide the backbone of support; and our students have embraced these difficult times with the can-do attitude that brought them to Cal Poly in the first place.

As we look ahead to fall, I know that together we can thrive as one Cal Poly community. I hope you all stay healthy and well.

Andrew J. Thulin, Ph.D. | Dean

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CITRUS DONATION

HORTICULTURE AND CROP SCIENCE DEPARTMENT DONATES CITRUS TO HELP SLO COUNTY RESIDENTS IN NEED

Cal Poly's Horticulture and Crop Science Department, part of the College of Agriculture, Food and Environmental Sciences, donated more than 10,000 pounds of citrus to two local organizations that are serving San Luis Obispo County residents in need during the COVID-19 pandemic.

A total of 9,000 pounds of mandarin oranges were donated to the San Luis Obispo Food Bank, which in turn distributed about 3,000 pounds weekly to local residents in need.

In addition, 1,000 pounds of citrus was donated to San Luis Coastal Unified School District, which is providing free lunches for all students during the shelter at home mandate.

The shift to a virtual spring quarter, along with fewer students on campus, left the campus orchards inundated with fruit. Typically, students harvest the fruit, process it in small batches, and sell it at campus farm stands, in local markets and at community U-Pick events.

"For the health of the trees and the quality of the fruit, we had to hire a crew to get it off of the trees," said Dan Chesini, plant science operations manager. "We didn't want it to go to waste, and we knew that the food bank was facing a higher demand than ever before."

The San Luis Obispo Food Bank has partnered with Cal Poly since 2013, sending volunteers to the fields to glean fruit when needed, making sure that the fruits and vegetables do not go to waste.

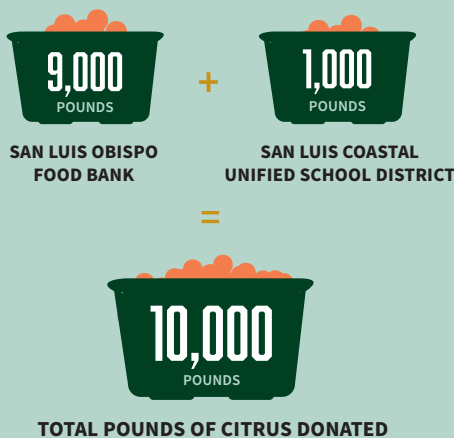
"It's a really amazing partnership to have," said Emily Wilson, GleanSLO program coordinator. "Our volunteers absolutely love the experience of gleaning at Cal Poly, and it's great to know that the folks at the Crops Unit are just as dedicated to reducing waste as we are."

The food bank has seen an increased demand during the shelter-at-home order, with many people out of work or working reduced hours, increasing the demand from local families for food resources, Wilson said.

The Cal Poly fruit will be shared at more than 50 monthly distribution sites, from Shandon to Nipomo, and at more than 40 food pantry and meal sites throughout San Luis Obispo County.

Erin Primer, director of food and nutrition services at San Luis Coastal Unified School District, said that the district is handing out about 15,000 free meals weekly to families with students enrolled at one of its 15 schools — giving five breakfast and five lunch meals to each student who preorders weekly.

"We are thrilled to support local businesses like Edna's Bakery and Taco Works and proud to accept local produce donations, such as the delicious mandarins from Cal Poly," Primer said. "It is incredible to see our community come together in this time of need to nourish our students. We are grateful for this kind donation and know how much our students and families truly appreciate it."



50
DISTRIBUTION SITES

40
FOOD PANTRIES

15,000

Free meals to families with students enrolled at one of its 15 schools in the San Luis Coastal Unified School District

AG OPERATIONS

Agriculture Housing offers students the opportunity to gain practical experience working in positions of responsibility at campus agricultural production units. Students support these campus operations year-round. A handful of students remained on campus during the spring quarter to ensure that operations continued as needed. Alumnus Jake O'Dello (Agricultural Science, '15) treated the more than 60 students to lunch (twice!) to thank them for their dedication.

Did you live and work at one of the student agricultural housing units such as the Swine or Horticulture Unit? If so, share your story and photos with us for the chance to have it highlighted on our Instagram @calpoly_cafes. Send it to AnnMarie Cornejo at ancornej@calpoly.edu.



In my decision to stay, 500 dairy animals and a family culture made it simple. Regardless of the state of our country, the one thing we can agree on is the necessity to eat. Providing a product that serves others while being able to Learn by Doing allowed me to help during this time. From animal husbandry to business practices, the dairy offers the closest experiences to industry standards I can get in college."

-Genevieve Regli, agricultural communications sophomore

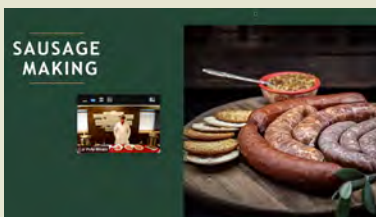
After only two years at Cal Poly, I already feel as if I have more opportunities, friends, support and fulfillment here in San Luis Obispo than I have ever had — and my experiences revolving around my department and living at the Horticulture Unit are largely to thank for that. One thing I love is having my backyard be a fully operational facility/program doing the exact things my academics aim to prepare me for. Plants can't exactly be paused, cancelled, watered remotely or grown last-minute. I stayed living on campus to help keep the many things I was part of going, all the while recognizing how absolutely incredible of a learning and growing opportunity it all was."

-Henry Main, agricultural and environmental plant sciences junior

MEET OUR NEW ASSOCIATE DEANS



Bill Hendricks, longtime head of Cal Poly's Experience Industry Management Department, and Catherine Kleier, most recently a professor of biology at Regis University in Denver, Colorado, have been named associate deans of the college. Hendricks and Kleier join current Associate Dean Jim Prince. Executive Associate Dean Richard Cavaletto will retire later this year and will be honored then. Hendricks, who joined Cal Poly in 1994, earned a doctorate in philosophy, recreation and leisure from the University of Utah. Kleier earned a doctorate in organismic biology, ecology and evolution from UCLA. She will begin in September. Following Hendricks' transition to his associate dean role, Jerusha Greenwood, currently an associate professor in the Experience Industry Management Department, will serve as the interim head of that department while a search for a permanent head is conducted.



LEARN BY DOING @HOME

The college launched a series of free Learn by Doing at Home sessions during the spring quarter to showcase its virtual model of teaching and learning. The four-part series gave a glimpse into the virtual classroom on topics such as sausage making and grilling tips, floral arrangement and event planning, an Indian street food demonstration and the art and science of making champagne. You can watch episodes at <https://bit.ly/cafesyoutube>.



TOMATO SPECTACULAR GOES VIRTUAL

The popular student-run Tomato Spectacular event went virtual, allowing people to purchase plants online and pick them up at a designated time to meet safety precautions related to COVID-19. More than 3,000 plants, grown by students in the Horticulture and Crop Science Department's campus greenhouses, sold out in record time. "While we are not able to offer the traditional sale because of important social distancing requirements related to COVID-19, staff and students alike worked hard to find a virtual platform to make sure the community was still able to support these students' hard work," said Wendy Robinson, campus greenhouse manager.

CALENDAR OF UPCOMING EVENTS

SEPT. 14

FALL CLASSES BEGIN

OCT. 9

FALL PREVIEW



MISSION UNSTOPPABLE

Lecturer Yamina Pressler, a soil ecologist in the Natural Resources Management and Environmental Sciences Department, was featured on the CBS show "Mission Unstoppable" in May. The show focused on middle schoolers, features and celebrates women in STEM, with the goal of inspiring the next generation of scientists. Pressler serves as an ambassador to the American Association for the Advancement of Science's IF/THEN movement, which seeks to further women in science, technology, engineering and math by empowering current innovators and inspiring the next generation. Watch the episode at: https://bit.ly/missionunstoppable_yaminapressler.

RARE CORPSE FLOWER BLOOMS AT CAL POLY

For the first time ever, a Titan Arum, or corpse flower, bloomed at Cal Poly, and more than 3,000 people waited in line for a chance to view — and smell — the plant from July 9-11 at the horticulture greenhouses. A corpse flower's bloom can grow more than 10 feet high and four feet in diameter. Horticulture and botany students have been growing the *Amorphophallus titanum* for several years, and this was the plant's first flower in a decade. Corpse flowers are open for only two days. At its tallest, this bloom holds the record for the world's largest unbranched cluster of flowers arranged on a stem, called an inflorescence. To attract the insects that pollinate the plant, the spathe acts like a funnel, sending out a foul aroma similar to that of rotting flesh.

Watch a timelapse video of the bloom at <https://bit.ly/cpcorpseflower>.



Visitors eager to see the rare bloom wait in line at the Cal Poly greenhouses.



'MUSTY'
Cal Poly — S.L.O.



Jamie Thompson and Avery De Mello prepare products in the Meat Processing Center.



CAL POLY MEATS

MEETING COMMUNITY NEEDS

As much of the Cal Poly campus and the surrounding community came to a sudden halt in the spring, the university's J and G Lau Family Meat Processing Center rallied to become a central provider of provisions and student-grown products.

Manager Jim Douglass worked with students and staff to create a drive-up store model, quickly transforming it into a one-stop-shop for local customers to purchase not only high-quality, local meat products, but student-grown produce, eggs and even flower bouquets. "We began this endeavor a week after California's March shelter-in-place mandate was issued," Douglass said. "We've built a great base here with our community, providing meat products, but we knew that we could no longer do it in the small, confined space of our market."

The small storefront, located on Stenner Creek Road at the northern end of campus, has long served a loyal customer base, offering fresh beef, pork, lamb, poultry and other specialty meats produced, packaged and marketed by students as part of their coursework. Cal Poly's meat processing center is one of the only Department of Agriculture-inspected plants on a college campus.

"The meat processing center is a great place to work with an amazing staff aiming to produce high-quality goods to our customers," said Jaimie Thompson, animal science senior. "Once COVID-19 hit, a lot of customers came to us looking for our products, and we adjusted our store model to accommodate the safest possible delivery of goods."

Other college units impacted by the COVID-19 pandemic soon began to partner with the meat market, selling produce and products that would have otherwise been sold at local farmers markets and other campus stores. Douglass said that at the height of demand, as many as 107 cars a day came to the market to stock up, with more than 2,600 customers served since the drive-up model was launched.

"It has been amazing to be a part of the evolution of the market," said Morgan Metheny (Animal Science, '17), a full-time lecturer who also helps manage the market. She also manages the market's website and social media accounts, letting customers know what will be available each week. "First we added strawberries, then produce from Cal Poly's organic farm and later, fresh flowers," she said. The market also increased its stock of other student-made products, such as eggs, cheese, ice cream, jams and barbecue sauce.

As long as the physical distancing mandate remains in effect, the meat market will continue to operate on a drive-up model. "We want to maintain a presence in the community and make a contribution," Douglass said.

For more information, including hours and available products, visit calpolymeats.com or follow @calpolymeats on Facebook and Instagram.

VIRTUAL LEARNING

The culminating course in a three-part, yearlong series on winemaking teaches students to blend and bottle the wines that they have been making since fall. When the coronavirus pandemic forced spring courses to go virtual, Lecturer Jim Shumate (Wine and Viticulture, '09) was determined to find a way that students could still experience the hands-on nature of the sequence.

"These students made all the decisions about the wines to this point, using everything they had learned over the previous three years to make those decisions," said Shumate, a consulting winemaker at Pomar Junction Vineyard and Winery in Templeton, California. "I wanted to try and keep them involved as much as possible."

Shumate spent a week assembling 400 small sample bottles of the 16 wines made by students that year. He then mailed them to all 25 students taking the course. Each student received 16 different samples that they could then use to determine the blends they thought would achieve the best wine.

Students worked in small groups and set up Zoom meetings to do tasting trials together to choose the blends they thought tasted best. "My group and I would meet in three-to-four-hour chunks through Zoom, tasting through each individual sample and then later through the blends we were crafting for our class," said Marcel Velasco, a senior wine and viticulture major. "In total, we probably created 20 different blends for each of our white and red wines."

Allie Donegan (Wine and Viticulture, '20) said her final year's courses helped to prepare her to enter the wine industry. While she was disappointed to not be able to do all aspects of the final segment in person, she was grateful for Shumate's effort to allow students to do the blending from their own homes. "Before these courses, we knew how wine chemistry worked and all the microbial populations in wine and what theoretically not to do, but until you're physically



This doesn't mean that our education was lessened. In fact, some might say that we had to work even harder to produce our final product despite the cards we were dealt."

making the wine and making mistakes that teach you what the book won't, you would go into the industry with nothing but being book smart," she said.

Of the many blends made by the class, Shumate ultimately chose the four best blends to be bottled — two red wines and two white wines — which each student will receive to commemorate their hard work. Shumate spent several long, uncharacteristically quiet days in the campus pilot winery blending and later bottling the wine — a task that students would typically do themselves. In all, he bottled about 400 cases of wine by hand.



Top left: Lecturer Jim Shumate blends wines alone at the campus pilot winery, a task normally done by students.

Bottom left: Senior Marcel Velasco sits at his home desk with the wine samples sent to students by Shumate at the beginning of the course.

"It's important to me that the students get each of the wines," Shumate said. "They all worked and touched these wines at one point or another, and it is something that represents them and all of their hard work. It's something they can take back to their family and friends and say 'Hey, I made this.'"

For Velasco, the course proved to be rewarding, even in quarantine. "We unfortunately did not get the hands-on experience of maintaining the wine through the last stages of fining, filtering (if needed), labeling and bottling," Velasco said. "This doesn't mean that our education was lessened. In fact, some might say that we had to work even harder to produce our final product, despite the cards we were dealt."



JAM MAKING AT HOME

Food science seniors enrolled in spring quarter's Product Development course were given the task of reformulating Cal Poly's signature jam to have a lower sugar content. There was just one catch: They would be doing it in their own home kitchens.

Professors Amy Lammert and Samir Amin, who co-teach the course, quickly assembled packages to be mailed or picked up by students containing the ingredients that students would need for the course.

"We put together a survey to assess what they had access to and what supplies they would need," Lammert said. And then they got busy getting the supplies ready for the 21 students taking the capstone course. Citric acid, several varieties of pectin, pH strips to test acidity, jars and lids, a scale and sugar were all labeled, boxed up and shipped off. A second shipment was made several weeks later, this time containing more than 11 pounds of raspberries, shipped overnight to preserve the fruit's quality.

"It was definitely a challenge, and we had some epic fails along the way," Lammert said. "Developing a food product remotely is hard — especially making sure that measurements for such things as texture were done uniformly."

In the pilot kitchen on campus, tools such as scales, balances, texture analyzers and thermometers help to standardize the learning outcomes. "We were limited by what they had [in their home kitchens] and what we could get to them in a timely manner," Lammert said, adding that Cal Poly was the only university she was aware of that was able to pivot quickly enough to teach the course remotely.

"Product development is a true search and discover process," said Lammert. "Students embraced the class as an evolving process and understood that trials and tribulations are a part of every experience."

AYDIN NAZMI

An epidemiologist and professor in the Food Science and Nutrition Department, Aydin Nazmi was recently appointed to serve as a presidential faculty fellow to assist with Cal Poly's COVID-19 planning and response. The topic is one that Nazmi has quickly become acquainted with. In the spring, he chaired an expert panel that helped San Luis Obispo County develop a science-based framework for determining how to reopen businesses and public spaces while continuing to protect vulnerable populations.

How do you plan for the unknown?

A: There is a lot of research happening, with new research being published literally every day — some directly relevant to what we are doing on campus and some indirectly. We know a lot about the transmission of communicable diseases, about human behavior, about prevention, risk factors and the biology of viruses. In the absence of specific information regarding the COVID-19 virus, we begin there. I'm also looking closely at state and federal data and projections as they become available to pass onto those leaders on campus tasked with making decisions.

How do you protect a college-aged population that may not feel at risk?

A: The majority of college students will, to some degree, continue to do what young people do. This is where it is necessary that the campus takes a clear stance on reinforcing the behaviors that we know to be beneficial in preventing the spread of



the disease. We have to promote, reinforce and normalize behaviors such as wearing a mask and routinely washing hands. It can be pretty easy in the presence of strong advocacy and promotion to create social norms. We have to remember that the majority of students live in the community, and there are no borders to infectious diseases; therefore, our messaging on campus is crucial. We have strong contact tracing in place and a robust testing program so that we can catch cases early and isolate early. That is the best we can do in the absence of a closed campus.

How has your understanding of COVID-19 changed since mid-March?

A: Not much has changed in terms of what we knew then related to basic transmission of the disease. It is transmittable in the same way as the flu, and critically, it is airborne. In my opinion, it is more dangerous than we originally thought. In terms of new research, we have learned that there are a relatively high proportion of asymptomatic people — those who are infected but have no symptoms. We are also learning that the outcomes associated with COVID-19 infection are more systemic than we originally thought, seeming to cause an immune reaction that leads to an inflammatory cascade that can be difficult to fight. My priority remains the same: to preserve public health and prevent as many people as we can from getting sick.

DEFINITION OF SUCCESS

Two Cal Poly students won first place awards at the CSU Student Research Competition, which is held each spring to promote excellence in undergraduate and graduate scholarly research and creative activity by recognizing outstanding student accomplishments across the 23 CSU campuses.



Kelly Condrón, a graduate student studying nutrition, presented on the impact of CalFresh Outreach on food security among Cal Poly students. Condrón helped launch the CalFresh outreach effort at Cal Poly, a nutrition assistance program funded by the U.S. Department of Agriculture and administered by the state Department of Social Services. The federal program provides funding to low-income individuals or households for nutritious foods at participating stores and farmers markets. On average, Cal Poly students who qualify receive \$150 a month to spend on groceries.



Nicole Zeltser (Animal Science, '20) presented on the impacts of a high-fat and fructose diet and its associations with neuronal loss in juvenile Iberian pigs. The examination is part of a cutting-edge research project, overseen by Assistant Professor Rodrigo Manjarín, on nonalcoholic fatty liver disease using a special breed of swine from Spain called Iberian pigs.

Two students received President's Commission awards for their upcoming faculty-sponsored research projects from the CSU Program for Education and Research in Biotechnology, which seeds biotechnology innovation and educates a diverse, professional workforce for California and the global economy.



Animal science sophomore **Priscilla Hsieh**, under the supervision of Professor Ike Kang, will research the conversion of grape pomace, otherwise considered food waste, to a value-added food product such as a hamburger patty. Hsieh will work with **Anisse Pereira**, a postgraduate fellow in Cal Poly's U.S. Department of Agriculture's National Needs program. Hsieh and Pereira will collaborate with faculty in the Chemistry, Biochemistry, Food Science and Nutrition, and Wine and Viticulture departments.



Lucy Moriarty, wine and viticulture junior, under the supervision of Associate Professor Jean Dodson Peterson, is researching the response of commercial grapevine rootstock stomatal behavior to water stress and exploring the progression of vine developmental factors as a function of rootstock selection with two other students, **Samantha Stauch**, a graduate student specializing in crop science, and undergraduate researcher **Nathaniel Palmer**, wine and viticulture senior.

SWANSON CENTER OF EFFORT CONFERENCE HALL

JUSTIN AND J. LOHR CENTER FOR WINE AND VITICULTURE



Bill and Cheryl Swanson, longtime supporters of Cal Poly, donated \$1 million to the College of Agriculture, Food and Environmental Science's JUSTIN and J. LOHR Center for Wine and Viticulture.

The gift will fund the Swanson Center of Effort Conference Hall within the grange building. The 2,728-square-foot hall will be used as a central gathering place where academia and the community will come together to network, learn and celebrate. Lectures, meetings and events, all with a focus on industry and student enrichment, will be held in the conference hall.

Alumnus Bill Swanson (Industrial Engineering, '73) and his wife, Cheryl, have long been champions of Cal Poly, philanthropically supporting projects spanning the campus and its programs. The couple recently served as co-chairs for Cal Poly's The Power of Doing: The Campaign for Learn by Doing capital campaign. Bill Swanson, retired Raytheon Co. chairman and CEO, has served on the Cal Poly Foundation Board since 2006 and was elected chair in 2014.

The couple founded the Center of Effort winery in 2008 in the Edna Valley, the heart of San Luis Obispo wine



country. The name Center of Effort references a sailing term that is the point on the sail where the forces come together and act as a whole. The concept is a guiding principal of Swanson's winery and encompasses the overall purpose of Cal Poly's new conference hall.

"The dedication of Bill and Cheryl to Cal Poly and the community exemplifies their dedication to providing the support needed for future

generations of students to succeed," said Andrew Thulin, dean of the College of Agriculture, Food and Environmental Sciences. "Their donation does more than provide the funding necessary to build a long-desired conference hall on campus; they are ensuring our vision of Cal Poly serving as a central hub for the entire wine industry in San Luis Obispo County and beyond to collaborate and train the next generation of winemakers."

The Swansons' donation is the largest single donation to the project from the Edna Valley wine region, representing a strong partnership between the university and local wineries who often hire Cal Poly graduates as interns and for full-time employment after graduation.

"When we founded Center of Effort, we wanted to create an estate winery that emphasizes sustainability and make wines that reflect our special area," said Bill Swanson. "Our hope is that we can help future generations of students become outstanding winemakers through Learn by Doing."

PROJECT IS ENTIRELY DONOR FUNDED

\$9M

of the money raised to date has come from donations ranging from \$25,000 to \$1 million.

\$19.3M

has been raised from donors spanning California's wine regions.

10
DONORS

have given at the million dollar-plus level.

The \$22 million project to modernize Cal Poly's wine and viticulture program is solely donor funded. The Center for Wine and Viticulture includes a bonded 5,000-case production, teaching and research winery, as well as classroom and laboratory space providing students with a learning environment similar to what they will experience in the wine industry.

Construction of the JUSTIN and J. LOHR Center for Wine and Viticulture, which includes a 15,600-square-foot winery and a 12,000-square-foot grange hall, is nearing completion, with the winery schedule to be completed in September 2020 and the grange hall in March 2021.

For more information or to donate, contact Director of Development Allyson Dela Cruz at adelac20@calpoly.edu. You can also view a livestream of the construction at cafesbuilds.calpoly.edu.

From the Classroom to the Vineyard:

THE INTERN EXPERIENCE

Kevin Bargetto (Wine and Viticulture, '16) was promoted to associate winemaker from cellar master at Edna Valley's Center of Effort winery in May, overseeing winemaking activities, from picking the fruit to blending and bottling the wine.

He is one of six Cal Poly graduates to head key positions at the winery, including production management, hospitality and accounting. Many of the alumni first interned at the winery during their undergraduate studies. "At Center of Effort, we have a number of Cal Poly graduates," said Bill Swanson. "The intern program at Cal Poly is outstanding as it benefits both students and those in the industry. It's a win-win for both."

Bargetto, whose family has been in the wine industry since 1933, said that Cal Poly's Learn by Doing philosophy was instrumental in preparing him for success post-graduation. **"What I believe Cal Poly excels at is its internship program — driving students out of the classroom and into tasting rooms, vineyards and wineries,"** he said. "The experience you gain outside of the classroom is invaluable and makes your time back in school more relevant, as you can apply what you have learned. The blend of theoretical knowledge and real-world experience is crucial in the world of wine."

Gladis Perez (Wine and Viticulture, '20) is the production coordinator at the winery, overseeing wine data tracking and compliance, production reporting and laboratory analysis. She interned at the winery in August 2019 and learned a range of tasks from barrel work to lab analysis, where she discovered her current passion for data tracking, logistics and planning. "Whenever I have a question or want to learn something new, anyone at the winery is happy to help," she said.

At Center of Effort, interns are exposed to all facets of winemaking and have a comprehensive educational experience. "Interns are one of the most important pieces of the harvest puzzle, and simply put, we could not do it without them," Bargetto said. "We are so fortunate to have Cal Poly so close by, as every year we can assemble a cohesive, like-minded and hard-working crew of students for harvest that are eager to get their hands dirty and learn, **the true Cal Poly way.**"

BEAUTIFYING CITY STREETSCAPES

Planter boxes brimming with green foliage and blooming flowers adorn downtown Morro Bay, California, creating an elegant touch to the classic beach town in a beautification effort done through a partnership including Cal Poly's Horticulture and Crop Science Department and Morro Bay in Bloom.

Proven Winners, a leading plant wholesale company, donated the plants to Cal Poly, and a handful of students grew them in the university's Horticulture Unit and then transplanted them to 18 planter boxes that were placed strategically near businesses throughout the city.

This was a unique experience in light of COVID-19 because as horticulturalists, we work with a living product. There is no taking days off."

-Jared Smith

Jared Smith (Agricultural and Environmental Plant Sciences, '20) helped with the project, both growing them in the greenhouse and overseeing the use of biological pest control for the plants. "In doing so, I was able to gain invaluable experience that will help me with my future endeavors," he said, adding that he plans to obtain a pest control advisors license and work in nursery operations.

"This was a unique experience in light of COVID-19 because as horticulturalists, we work with a living product. There is no taking days off," said Smith. "The experience of working with and giving back to the community that I live and study in was particularly enriching; a summer well spent."

Wendy Robinson, manager of Cal Poly's greenhouses, connected with the nonprofit Morro Bay in Bloom as a way to involve students in the beautification

effort. Cal Poly lecturer Susan Snyder spearheaded the design concepts, while Robinson oversaw the plant production with student employees.

"Cal Poly's partnership with Morro Bay in Bloom provided students with a hands-on horticulture project that they were able to execute from start to finish," Robinson said. "Students grew the plants from 2-inch rooted plugs and were tasked with creating an aesthetic plan for integrating them throughout the city."

The volunteer-based Morro Bay in Bloom is dedicated to beautifying the city by landscaping public spaces and integrating floral design and urban forestry with environmental stewardship.

"The new collaboration among Cal Poly, Morro Bay in Bloom, and Proven Winners is a solid success for all three partners," said Laurel Barton, a Morro Bay in Bloom volunteer. "Cal Poly horticulture

students are exposed to a hands-on learning experience guided by customer expectations; Proven Winners gets a new location and microclimate to test its plants and gather public feedback; and Morro Bay in Bloom gets to test drive new varieties of plants grown by a new generation of dedicated students."

Walter Heath, who cofounded Morro Bay in Bloom in 2013, said the city has been recognized three times for its beautification efforts by America in Bloom, a national program that promotes beautification through education and community involvement by encouraging the use of natural enhancements. Heath said he envisions the partnership with Cal Poly will pave the way for another beautification award — earning recognition for both the city and the students who labored to make the project a reality.

To watch a video about the collaboration, visit <https://youtu.be/HyczzE6ZCWQ>.



Jared Smith arranges plants in one of several planter boxes located in downtown Morro Bay.



GROWING GROUNDS

CAL POLY PARTNERS WITH THE CALIFORNIA AVOCADO COMMISSION

Nearly 500 avocado trees were planted on three acres of terraced hillside on Radio Tower Hill on Cal Poly's campus in June, the result of a partnership with the California Avocado Commission that will provide more than a decade of research opportunities for students and faculty.

Three different varieties of experimental avocado rootstock developed by researchers at UC Riverside to be resistant to Phytophthora root rot, the most common avocado disease worldwide, will be studied over the next 10 to 20 years as part of a study that could lead to the release of the new rootstock to commercial nurseries and growers.

Professor Lauren Garner, who teaches fruit science in the Horticulture and Crop Science Department and is overseeing the project, said research begins this summer and will be focused on all aspects of the trees' growth and fruit production. The rootstock, grafted to the Hass cultivar because of its predominant marketability, will take about four years to provide the first yield. "This project is going to

benefit avocado growers across the state and beyond," she said. "The data will be useful to all growers because there is no point in having resistant rootstock if it impedes the growth of the Hass avocado."

Several donors contributed more than \$55,000 to make the site improvements needed for the new planting. In addition to the California Avocado Commission, Del Rey Avocado, C&M Nursery, and Righetti Ranch all facilitated the improvements.

"Their willingness to put money into the project reinforces that the research we are doing is important to the industry," Garner said.

Tim Spann, research program director at the California Avocado Commission, said he is looking forward to the opportunities the project will open up for future collaborations with Cal Poly.

"The California Avocado Commission is very excited to be partnering with Cal Poly on this new rootstock trial," said Spann. "The Commission is looking forward to the benefits this trial will provide to the California avocado industry, in particular our growers in the northern end of the avocado growing region."

"As a university, we are able to offer a place for a long-term trial to occur and for growers to see how well the trees are growing," Garner said. "The majority of fruit production is done on grafted trees. Sometimes rootstock seems promising, only to find that the graft union can be problematic several years into the growth of the tree. It is one thing for us to learn about it at Cal Poly but quite another for the nursery industry or growers to find out 10 years into a 20-year investment that it is not going to work."

Garner anticipates holding future field days for growers to visit the orchard and see how the trees are progressing. The trial will also enable a number of research opportunities for undergraduate and graduate students, providing them invaluable real-world experience.



Above: Professor Lauren Garner and Johnny Rosecrans, farm manager, at the site the day of planting.

Left: Joshua P. Olivarría (Agricultural Science, '19) regional farm manager at Mission Produce lends a hand planting the rootstock.



BEE SWEET AT BARTLESON RANCH

CAL POLY PARTNERSHIP INTRODUCES TECHNOLOGY TO REDUCE PESTICIDE USE

An advanced method of treating citrus before it leaves San Luis Obispo County will drastically reduce the amount of pesticide currently being used to control agricultural pests.

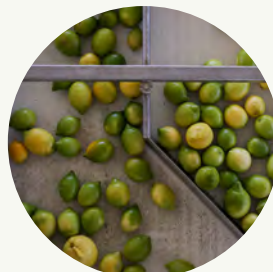
The wash line is the latest Learn by Doing enhancement made possible by the continued partnership of Cal Poly's College of Agriculture, Food and Environmental Sciences and Bee Sweet Citrus, a prominent citrus packing and shipping company based in the Central Valley.

A state-of-the-art wash line for processing citrus, and a 14,900-square-foot steel canopy to protect it, was installed by Bee Sweet Citrus at the Bartleson Ranch in Nipomo. The 450-acre avocado and lemon ranch, donated to Cal Poly in 2015 by Stu and Jan Bartleson, is used as a site of extended hands-on learning and research opportunities for students studying horticulture, fruit science, soil science and more.

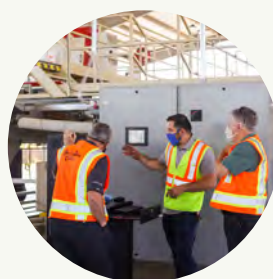
"Five years ago, Cal Poly was gifted the land to extend our hands-on curriculum, and now we have this technology on display for our students to learn from," said Andrew Thulin, dean of the College of Agriculture, Food and Environmental Sciences. "The generosity of our partners provides essential educational opportunities for our students in sustainable practices that will benefit generations to come."

State regulations require that all citrus must be washed or sprayed with pesticides to prevent the Asian citrus psyllid pest from spreading. The new wash line facility establishes a needed tool to ensure the safe transportation of citrus between regional areas. The wash line installation was managed by

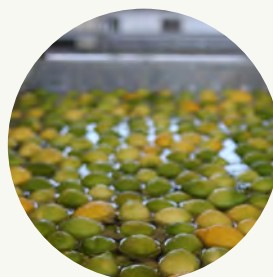
Cal Poly alumni Thomas Marderosian (Agricultural Systems Management, '13), one of three sons of Bee Sweet Citrus founder Jim Marderosian to graduate from Cal Poly, and Matt Watkins (Agricultural Systems Management, '05), who is involved in pest management. Cal Poly alumnus Francisco Zepeda (BioResource and Agricultural Engineering, '19) will oversee the program.



Citrus automatically sorts through the wash line.



Thomas Marderosian demonstrates the wash line for Cal Poly President Jeffrey Armstrong and Bill Swanson, chair of the Cal Poly Foundation.



Citrus is washed in water to remove any potential pests.



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The Cracknell family knows how to show their Cal Poly pride!
From left to right, wearing their matching grad year T-shirts, are Russ (Industrial Technology), Lisa (Industrial Technology), Gavin (Recreation, Parks and Tourism Administration), Davis (Agricultural Business) and Maren Cracknell (Recreation, Parks and Tourism Administration).