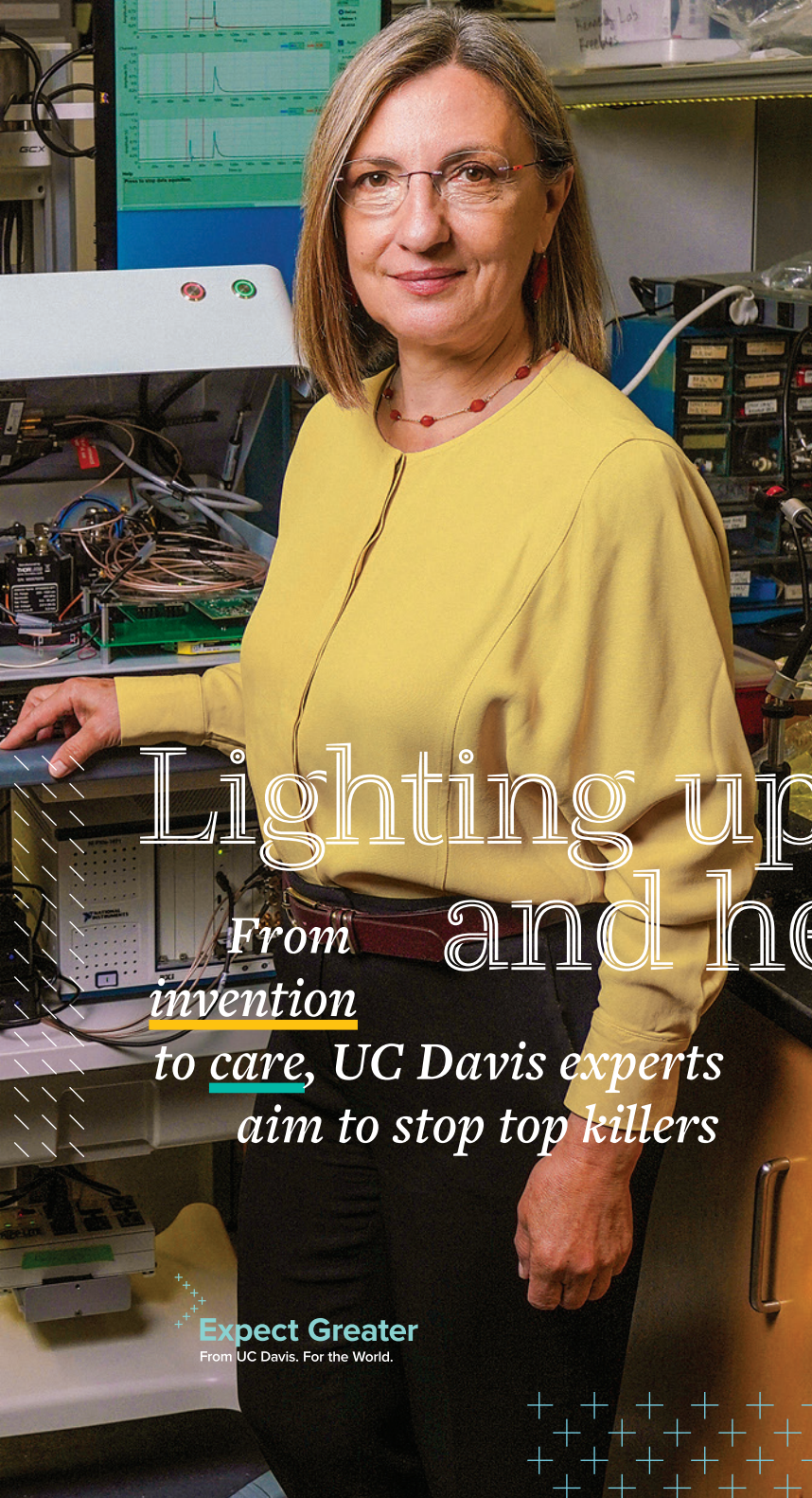


CREATED
CREATED

IN GREATER FOCUS

THE MAGAZINE OF THE EXPECT GREATER CAMPAIGN \ ISSUE 2 \ FALL 2022

UC DAVIS



Lighting up cancer and heart disease

*From invention
to care, UC Davis experts
aim to stop top killers*

ALSO INSIDE

- + First-generation student support
- + \$50 million for ag innovation
- + Future small animal clinic
- + Saving Lake Tahoe

Expect Greater
From UC Davis. For the World.

We do it all here at UC Davis. And by “we,” we mean you.

With your partnership, we turn young students’ educational dreams into reality, supporting their growth from first-year orientation until they embark upon their future paths, degrees in hand, ready to lead. We have the honor of introducing you to several of these inspiring scholars in the pages that follow.



We grow the seeds of ideas into life-saving applications. Read on to learn about a pen-size device—invented in a UC Davis biomedical engineering lab and tested in UC Davis Health surgical suites—that detects the edges of cancer tumors and diseased heart tissue with precision accuracy, enabling their complete removal.

We host the interdisciplinary research teams that are unlocking solutions for a sustainable planet, and then sharing those solutions with the world. We are excited to share plans for the new Lynda and Stewart Resnick Center for Agricultural Innovation, where UC Davis experts will work to build a sustainable food future for humanity.

In fact, we do it all so well that *Washington Monthly* has named UC Davis the #2 U.S. public university in 2022, a ranking based on “social mobility, research, and community and national service.”

The three of us are incredibly proud of this distinction, a skyrocket in recognition of the transformational work that has always happened at UC Davis. And we are deeply grateful to you, whose philanthropic support makes it possible.

Our shared vision is growing in momentum, as more and more people join in our campaign: “Expect Greater: From UC Davis. For the World.” We hope you enjoy the stories of inspiration and discovery happening all over the university, supported by donors like yourself.

Together, we are truly building a better world. Thank you for doing it all with us.

Gary S. May
Chancellor

Shaun B. Keister
Vice Chancellor for Development
and Alumni Relations
President, UC Davis Foundation

Cecelia Sullivan '83
Chair, UC Davis Foundation

above photo, l-r: Vice Chancellor for Development and Alumni Relations Shaun B. Keister, Chancellor Gary S. May and UC Davis Foundation Chair Cecelia Sullivan '83.

PHOTO BY SAM SELLERS / UC DAVIS

 **Expect Greater**
From UC Davis. For the World.



UC DAVIS

In Greater Focus is published once a year by the Office of Development and Alumni Relations at UC Davis.

EDITOR

Rebecca Furtado

MANAGING EDITOR

Betsy Towner Levine '93

ASSOCIATE EDITOR

Joe Lynch

ART DIRECTOR

Sam Sellers '06

WRITERS

Ashley Han '19, Clémentine Sicard '20,
Sierra Ronning

EDITORIAL ASSISTANT

Daniel Park '23

University of California, Davis

CHANCELLOR

Gary S. May

VICE CHANCELLOR FOR DEVELOPMENT AND ALUMNI RELATIONS

Shaun B. Keister

UC DAVIS FOUNDATION CHAIR

Cecelia Lakatos Sullivan '83

Contact

Office of Development and
Alumni Relations
530-754-4438

MAIL

In Greater Focus magazine
University of California, Davis
Development and Alumni Relations
One Shields Avenue
Davis, CA 95616

E-MAIL

development@ucdavis.edu

WEB

campaign.ucdavis.edu

on the cover: Biomedical engineering professor Laura Marcu (*left*) has invented a pen-shaped device that UC Davis Health surgeon Andrew Birkeland (*right*) and his colleagues are using to illuminate unhealthy tissue like cancer tumors for removal. *See story on page 2.*

LEFT PHOTO: KARIN HIGGINS / UC DAVIS, RIGHT PHOTO: WAYNE TILCOCK / UC DAVIS HEALTH.

© Copyright 2022 by UC Davis Development and Alumni Relations

No content in this issue of *In Greater Focus* may be reproduced in part or in whole without written permission.

IN GREATER FOCUS



Brandon Berry, dive officer at the UC Davis Tahoe Environmental Research Center, inspects algae growth in Lake Tahoe. *See story on page 18.*

JOE PROUDMAN / UC DAVIS

2

Reimagining Medicine

Lighting up cancer and heart disease

Expanding small animal care

School of Veterinary Medicine:
Bringing cures to complex cases

12

Sustaining Healthier Communities

A \$50 million agricultural innovation boom

Saving Lake Tahoe

Also inside

32 Dedicated alumni and faculty receive campus honors

34 Campus construction powered by philanthropy

20

Preparing Change Makers

Thriving with support: Donors help students learn and grow

“You put me first”—from our students

26

Sparking Innovation and Creativity

Grad students innovate for our future

Alumni support Library’s DataLab

Mondavi Center at 20

Visiting artists shine in the classroom

40 How small gifts make a big difference

36 The growing power of endowments

38 Donors share what makes their support personal



Lighting up cancer and heart disease

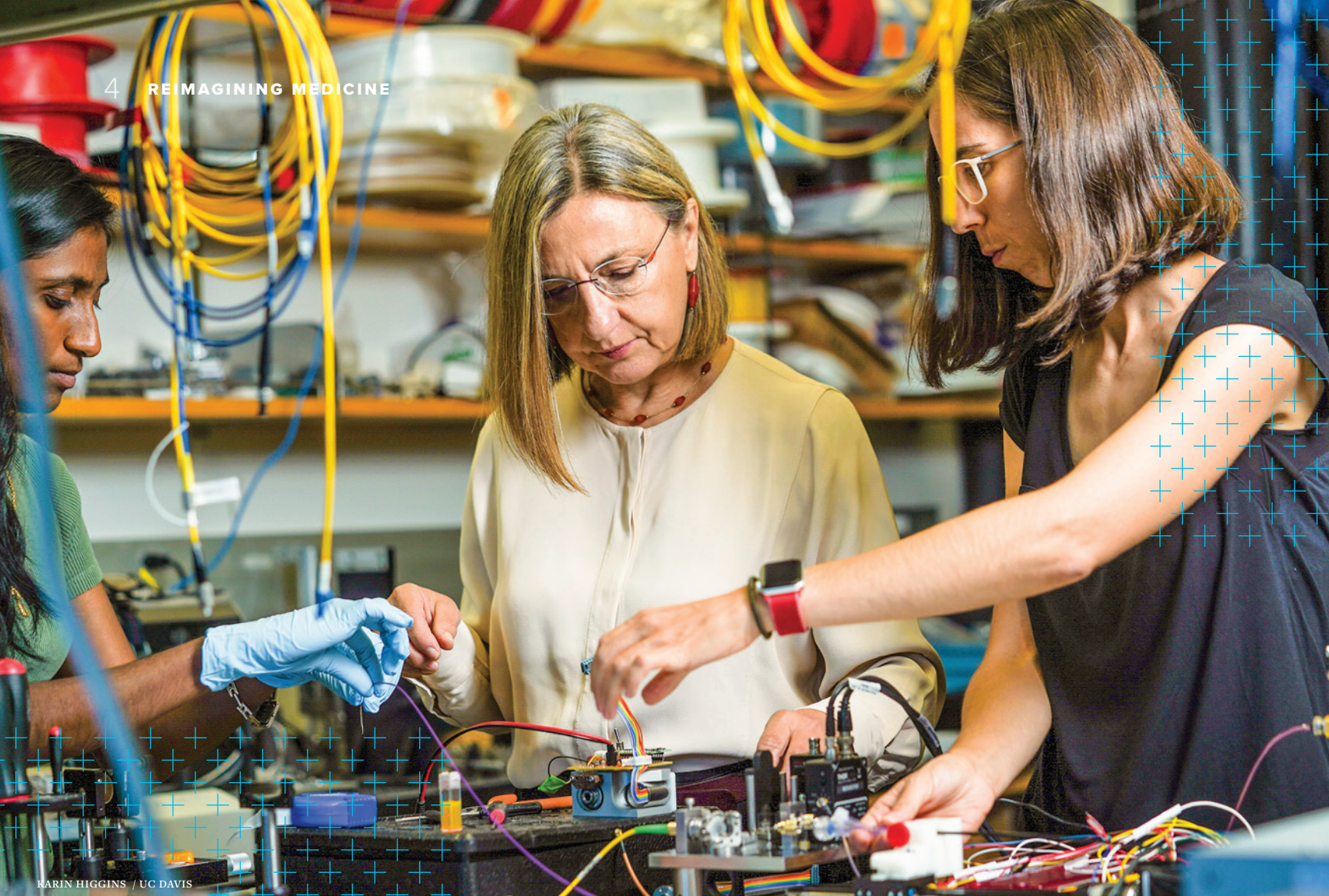
*From invention to care,
UC Davis experts aim
to stop top killers*

BY ASHLEY HAN

Much like a fresh set of eyes, a small pen-shaped device is showing surgeons a more accurate way to treat cancer and heart disease. The device uses new technology developed at UC Davis to scan and illuminate unhealthy tissue in real time so it can be removed.

For use during surgery, the technology is called Fluorescence Lifetime Imaging (FLIm). Surgeons use the device to scan tissue, which will alter the fluorescence if metabolic abnormalities or cancerous cells are present. This is because tumor cells have different optical properties than healthy cells.

Surgeons at UC Davis Health are using FLIm as a safer and more precise imaging technology to help identify cancerous cells in the brain.



MARIN HIGGINS / UC DAVIS

Laura Marcu, professor in the College of Engineering's Department of Biomedical Engineering, and colleagues in her lab have been developing optical imaging technology like FLIm for more than 20 years.

"My work is primarily to help guide and inform surgeons to more precisely and thoroughly remove tumors," said Marcu.

First developed in an engineering lab, the technology is one of the most advanced clinical fluorescence lifetime imaging systems in the world. It's currently being used on patients at UC Davis Health—with great accuracy and success—to collect data and prove its commercial value for widespread use.

The lab expects commercialization of the device may be possible in the next few years. It could offer

an affordable diagnostic tool option for most hospitals, at an estimated maximum of \$100,000 per device, while MRI, CT and PET scanners can cost millions.

Andrew Birkeland, assistant professor of otolaryngology at the UC Davis School of Medicine specializing in head and neck cancer, said he uses the FLIm device to test and investigate where cancer ends and normal tissue begins, as it has the potential to offer a clearer view before surgery.

"Working with Dr. Marcu is a testament to what translational science is," Birkeland said. "By combining her expertise and ours from the clinical side, we've created something really novel that can have tremendous potential impact for patient care. That's the goal of all translational science and we're doing that at UC Davis."

Glowing results for robotic cancer surgery

Although head and neck cancer is one of the most common cancers in the world, five-year survival rates remain around 50 percent for advanced cases. At UC Davis, FLIm technology is being used in patient trials in the hopes of improving those odds with guided surgery.

"Currently, my eyes and hands are the only things I use to get all of the cancer out; however, the FLIm device does a great job at differentiating between cancer and non-cancer cells," said Birkeland.

In 2021, Marcu received a \$3.2 million grant from the National Institutes of Health (NIH) to continue her groundbreaking

left: Silvia Noble Anbunesan (left), Marcu (middle) and Alba Alfonso-Garcia (right) work in their lab at the Genome and Biomedical Sciences Facility.

right: Birkeland (left) and two Marcu lab members, Brent Weyers (middle) and Michael Tianchen Sun (right), scan a tonsil specimen ex vivo.



“By combining our expertise, we’ve created something really novel that can have tremendous potential impact for patient care.”

- ANDREW BIRKELAND, ASSISTANT PROFESSOR OF OTOLARYNGOLOGY

WAYNE TILCOCK / UC DAVIS HEALTH

research on the application of FLIm. Working with surgeons in the UC Davis Department of Otolaryngology and in collaboration with Intuitive Surgical Inc., her team has added FLIm technology to the da Vinci robotic surgical system to better identify cancerous tissue during trans-oral-robotic-surgery.

“We often use Dr. Marcu’s tool during robotic surgery in the mouth, which has the potential to identify cancer tissue in hard-to-access areas deep in the back of the throat,” Birkeland said.

Birkeland can attest that Marcu’s technology is truly unprecedented—and with the right funding, it can be used across institutions and become a standard of cancer care.

Philanthropy that makes the difference

While much of the research underway is supported by grants, additional philanthropic support can greatly expedite research trials. Successful studies conducted by UC Davis Health enhance patient care. In fact, thanks to the excellent care they have received, more than 3,700 grateful patients have given back to UC Davis Health in the last year.

Both Marcu and Birkeland also recognize the importance of philanthropy and give as employee donors themselves. Jeff Southard '95, interventional cardiologist and clinical professor at the School of Medicine, is another employee donor who collaborates with Marcu’s lab to apply her cardiovascular research in his work.

“Donor support will not only aid the basic science research that we do, but it will result in the direct translation of that science into clinical practice,” said Southard. “We always need more support staff who will allow us to do groundbreaking research more quickly and effectively.”

Picture fewer heart attacks

When it comes to prevention and care for cardiovascular disease and stroke, FLIm can be used to identify signs of damage to blood vessels, such as plaque buildup in coronary arteries.

“We can integrate this technique into intravascular catheters to look at the composition of the blood

CONTINUED ON NEXT PAGE...



top-left: Birkeland (*far left*) observes an in vivo FLIm scan using the da Vinci system.
bottom-left: Ph.D. student Silvia Noble Anbunesan works on the clinical application of FLIm in studying brain cancer and metabolism.
bottom-right: This fiber optic probe is used to image the inside of tubular samples, such as vessels and intestines.

vessels and atherosclerotic plaques that are likely to lead to critical events like a heart attack,” Marcu said.

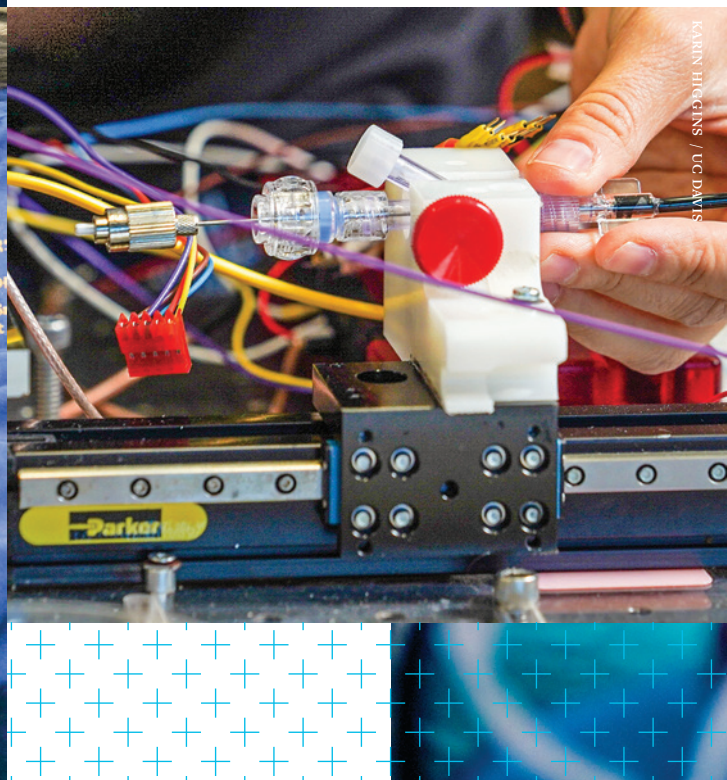
Julien Bec, engineering and operations director in the Marcu Lab, has been leading activities related to catheter development for cardiovascular use.

The researchers hope that in the near future, this translational research will be directly benefiting patients.

“We’re working on the application of fluorescence lifetime imaging combined with a technology that uses near-infrared light, to give us an image 10 times the resolution of the tissue compared to what we usually see,” Southard said.

Southard stresses that knowing the plaque makeup of coronary arteries down to the cellular level may help inform physicians how to treat patients whose arteries are prone to plaque rupture.

“So far we’ve tested imaging catheters on donated human hearts. These hearts have cholesterol or plaque buildup in the arteries and it’s been highly reliable in understanding the tissue makeup,” Southard said. His ultimate goal is to use the imaging technology in a prospective way to help people before major cardiac events occur.



Advancing brain tumor removal

Once a brain tumor is identified, surgeons rely on visual and tactile feedback, such as expensive intraoperative MRIs, to guide its removal. Traditional approaches to fluorescence-guided surgery include administration of drugs like 5-ALA to patients before surgery to illuminate the tumor.

In the Marcu Lab, researchers are using the molecules already present in tissues to highlight cancer.

“Our work is multifaceted and involves extensive engineering to design an instrument that’s compatible with surgery,” said Alba Alfonso-Garcia Ph.D. ’16, project scientist in the Marcu Lab. “We also research how optical signals from the tissues describe the cancer biology.”

Silvia Noble Anbunesan M.S. ’20, Ph.D. ’24, who works with Alfonso-Garcia, observes brain surgeries at UC Davis Health and collects FLIm data. She compares the FLIm signatures on intact brain tissue with traditional tissue staining images from brain biopsies to help create guidelines for future clinicians to navigate the brain tumor environment.

“The goal of our project is to use our FLIm system to identify the tumor boundaries, specifically in glioblastoma, which is one of the worst types of brain cancers,” Anbunesan said. “These types of brain tumors do not have a very clear boundary, making them difficult to remove fully.”

Both Alfonso-Garcia and Anbunesan collaborate with Orin Bloch, neurosurgical oncologist and professor at UC Davis Health, to apply FLIm technology on patients with brain cancer.

In their first in-patient assessment of brain tumor using FLIm in combination with 5-ALA fluorescence-guided surgery, Marcu and her team found that their device allows surgeons to identify the tumor infiltrative margins with increased sensitivity, leading to a more efficient process that is less disruptive to the surgical workflow. Their findings were published in the *Journal of Biomedical Optics* in February 2022.

“This technology could improve tumor resection outcomes that are directly related to patient survival rates,” Alfonso-Garcia said.

The outcome of collaborative care

UC Davis’ interdisciplinary approach to reimaging medicine has encouraged the translation of benchtop research into real patient care.

“I receive a lot of support from various people, entities and units in order to make this happen,” said Marcu. “Most importantly, the support and collaboration with clinicians who are open to work with us have made FLIm technologies and multimodal imaging systems a reality.”

Building on that momentum, Marcu’s novel technology was awarded a \$6.3 million grant by the NIH in July to establish the National Center for Interventional Biophotonic Technologies (NCIBT), which will advance optical imaging technologies developed at UC Davis and combine them with an artificial intelligence-deep learning platform.

The grant will also support the establishment of a physical center at UC Davis’ Aggie Square. This will include state-of-the-art laboratories, teaching spaces, learning centers and the organizational headquarters of the center’s training and education programs. +

➤ 25% of faculty in the UC Davis Department of Biomedical Engineering hold a joint appointment at the School of Medicine.

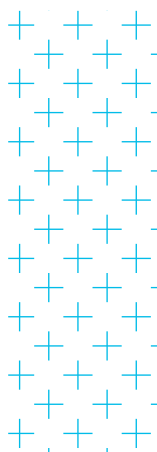
➤ UC Davis Health is a top 50 hospital in cancer, cardiology and heart surgery, ranked by *U.S. News & World Report*, 2021.

“Donor support will not only aid the basic science research that we do, but it will result in the direct translation of that science into clinical practice.”

- JEFF SOUTHARD ’95, INTERVENTIONAL CARDIOLOGIST CLINICAL PROFESSOR, UC DAVIS SCHOOL OF MEDICINE



WAYNE TILCOCK / UC DAVIS HEALTH



DON PREISLER / UC DAVIS



clockwise from top-right: Bearded dragons, potbellied piglets and kittens are among the more than 60,000 animals seen at UC Davis Veterinary Hospital each year.



DON PREISLER / UC DAVIS



COURTESY @LIVINGWITHPICKLES

Expanding small animal care

The School of Veterinary Medicine is renovating its Small Animal Clinic so more animals can have an exceptional care experience. With the support of donors, the clinic is being developed within the new Veterinary Medical Center, which is currently in early phases of construction.

“There is a rising demand for veterinary services across the country,” said Kate Hopper, director of the Small Animal Clinic. “The expansion will allow us to see and care for more patients.”

Opened in 1970 and built to serve just 3,000 patients a year, today the Veterinary Medicine Teaching Hospital sees more than 60,000 patients a year—a staggering twentyfold increase.

The new facilities, set to be completed in the next phase of construction, will allow more animals to be served and expand capacity for veterinary students and doctors as well. Hopper noted that philanthropic support will be key to the project’s success.

“A major reason why we’ve been able to be the top veterinary school in the country is because of the support of donors,” she said. “Donors help keep this hospital at the cutting edge and allow us to keep improving care for our animals. It wouldn’t be possible without them.”

Designs include new clinical, pharmacy and laboratory space and an expanded emergency room and intensive care unit on the first floor, readily accessible from a drive-up emergency entrance.

“We are at the forefront of veterinary medicine, doing cutting-edge research and finding new treatments for diseases,” said Hopper. “The new space will enhance our ability to do that and allow us to grow even more, while providing pet owners with a higher-quality experience while they’re here.” +

Bringing cures to complex cases

BY CLÉMENTINE SICARD

Kit's high-risk surgery a success at School of Vet Med

In 2019 Gayle Brock brought her dog, Kitsune (Kit), to her local veterinarian in Nevada because the seven-year-old Shiba Inu had been acting lethargic. Brock knew something was wrong when Kit, who was typically very energetic, was too tired for her favorite activity: playing at the park.

Brock was referred to a specialty clinic, where Kit was diagnosed with chylothorax, a life-threatening condition caused by a build-up of milky white fluid, called chyle, which leaks from the thoracic duct into the chest. Temporary treatments include a special diet and periodically draining the fluid, but neither would be sustainable in the long term, and Kit was suffering.

The only option for a permanent fix was surgery to close the thoracic ducts that were leaking fluid in Kit's chest cavity. However, the surgery was very invasive and would require the surgeons to open up Kit to search for the thoracic ducts—it had a success rate of only 45-60 percent.

"My husband and I were just devastated," said Brock. "It hurt just to think about it, we didn't know what to do."

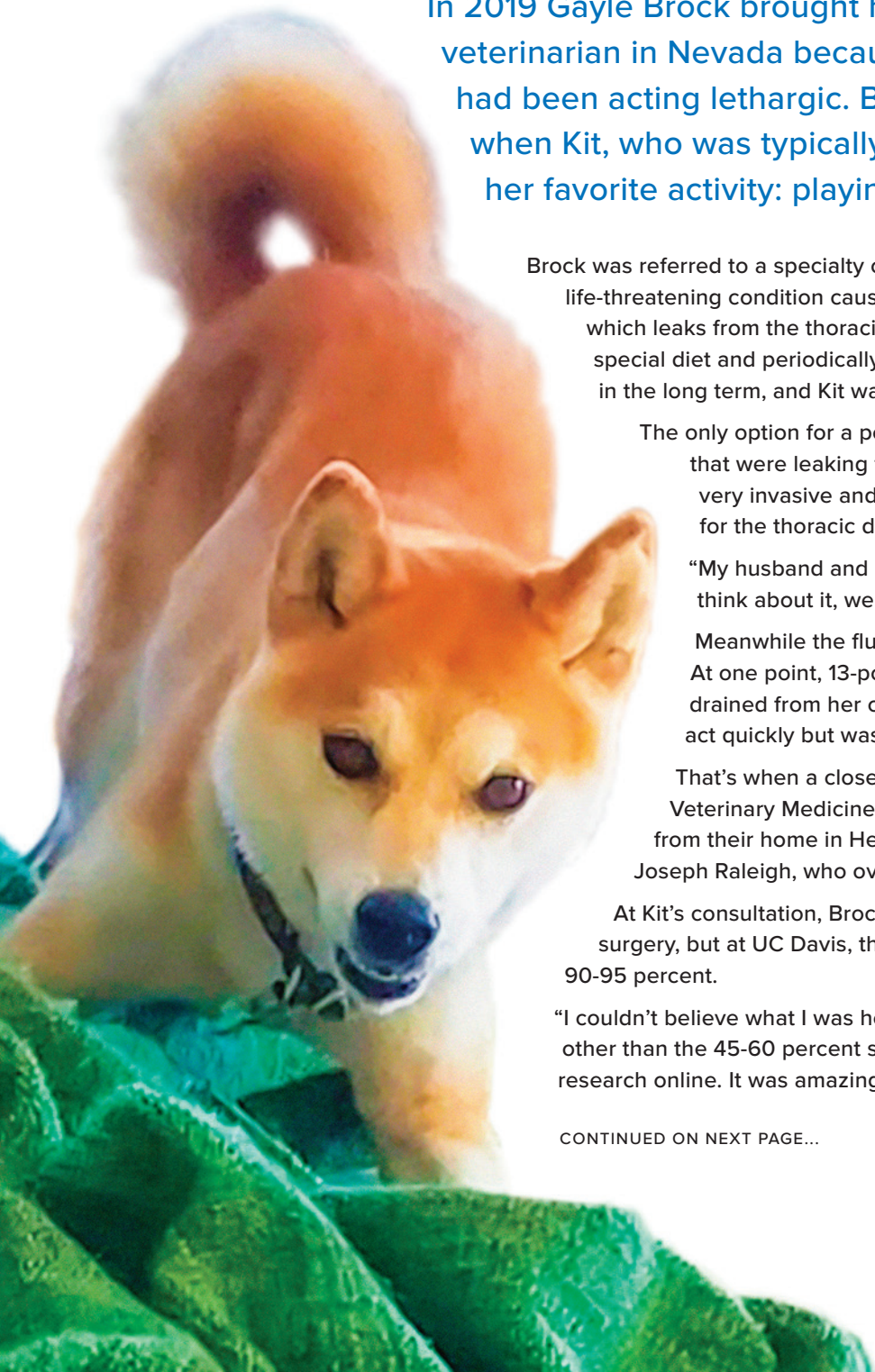
Meanwhile the fluid was pushing on Kit's organs, especially her lungs. At one point, 13-pound Kit was getting up to 700 milliliters of fluid drained from her chest every two weeks. Brock knew they needed to act quickly but was worried about the odds of the surgery.

That's when a close friend told them about the UC Davis School of Veterinary Medicine. After getting a referral, Brock and Kit made the trip from their home in Henderson, Nevada and met with veterinary resident Joseph Raleigh, who oversaw Kit's case.

At Kit's consultation, Brock was again told that the condition would require surgery, but at UC Davis, the success rate would be remarkably higher: 90-95 percent.

"I couldn't believe what I was hearing," said Brock. "We hadn't heard anything other than the 45-60 percent success rate, either from other vets or from our own research online. It was amazing."

CONTINUED ON NEXT PAGE...





Advanced techniques help make surgery a success

Kit's surgery was less risky thanks to a minimally invasive approach and advanced technologies pioneered by UC Davis veterinarians.

On the day of the surgery, Kit underwent a CT lymphangiogram, a scan that outlines a roadmap of where each of the ducts are located in the chest cavity.

This allows for a laparoscopic, or "keyhole," surgery that results in a much quicker recovery time and less discomfort for the patient.

Kit's scan surprised her care team: She had very complex thoracic duct anatomy.

However, a cutting-edge imaging technique called near infrared fluorescence would help make the surgery a success. Developed by Philipp Mayhew and Michele Steffey, professors in the Department of Surgical and Radiological Sciences at the School of Veterinary Medicine, the technique renders a dog's lymphatic vessels more visible to the human eye during surgery.

Since the ducts are tiny and buried in fat tissue, they can be hard for surgeons to see. However, in this procedure an agent is injected into the dog's lymph nodes. The ducts illuminate when infrared light is aimed at them, allowing the surgeons to identify them more easily.

"What sets our treatment apart at UC Davis is a combination of a minimally invasive approach and the use of new technologies like near infrared fluorescence," Mayhew said. "This allows us to maximize our ability to find the ducts, which has historically been a challenge."

Kit's case was so complex that she became part of a research study lead by Mayhew about chylothorax in dogs.

"When I was asked about putting Kit in the research program, I said absolutely, whatever can help the research and hopefully any dogs going through this," said Brock.

The surgery was a success—three months and several recheck examinations later, Kit was given a clean bill of health. Not only was she healthy again,

but she had redirected chyle flow into lymphatic vessels in her abdomen.

Mayhew personally gave Brock the good news and Kit was referenced in the research paper, published in abstract in the journal *Veterinary Surgery* in June 2022.

Great experience inspires giving back

Grateful for the life-saving care that Kit received, Brock has donated a \$500,000 planned gift in Kit's name for canine soft tissue research.

"Giving to UC Davis was a perfect match," said Brock. "I'd seen firsthand and benefited from the amazing work that happens there and I knew that this is where I wanted to put my focus."

Brock hopes that the gift will help UC Davis veterinarians treat more animals with complex cases.

"I wanted to support the planned Veterinary Medicine Center expansion and help UC Davis get to a point where it can have the capacity to serve as many animals in need as possible." +

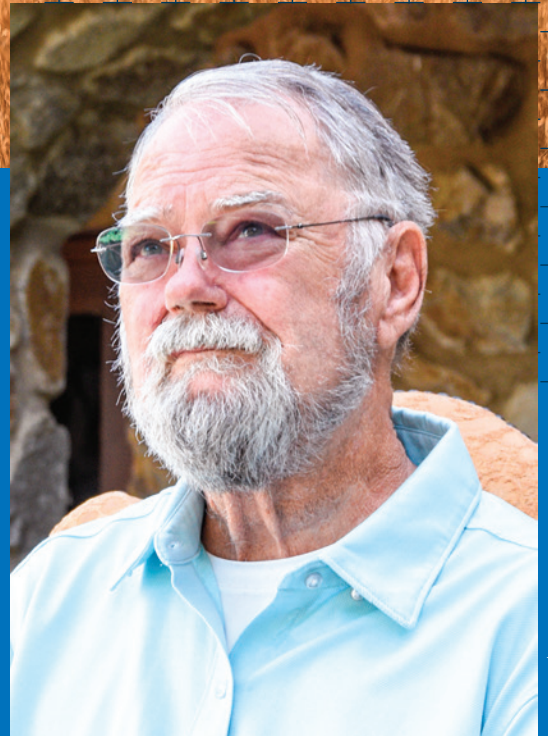


Gayle Brock
with Kit



Artist and photographer Jacquelyn “Jackie” Anderson, 1954-2021

right: Jackie’s husband, donor Jim Anderson



MEGAN TAYLOR / UC DAVIS

Sacramento businessman Jim Anderson spearheads new era for wellness with \$5 million gift

The UC Davis School of Medicine opened the Office of Wellness Education on July 1, 2022, a first-of-its-kind initiative for the well-being of patients and the community funded by a \$5 million gift from Jim Anderson.

The new office offers resources to the UC Davis Health community and the people of Sacramento to help prevent illness and help people lead longer, healthier lives. The center supports comprehensive wellness, which includes physical health as well as emotional, societal, environmental and global concerns.

“This is an unprecedented step for our health system in fulfilling its promise to our patients and community to support the full dimension of their health, before they get sick,” said Scott Fishman, professor of

anesthesiology and pain medicine and director of the Center for Advancing Pain Relief.

Anderson funded the initiative in honor of his late wife, Jacquelyn “Jackie” Anderson, who passed away from cancer in March 2021. Jackie Anderson was an artist and photographer who was passionate about health and wellness, and whose legacy continues to inspire others.

Additionally, the gift will establish the Jacquelyn S. Anderson Endowed Chair in Wellness.

“Jackie had a way of making people feel better and everyone who met her walked away touched by her kindness,” Jim Anderson said. “We’re establishing this initiative for the good of humanity. It’s needed now more than ever.”

Jim Anderson first became involved with UC Davis Health in 2003 as a liver transplant patient. “UC Davis saved my life. I’m grateful and I’ve got a special place in my heart for them,” he said.

When he decided to make a gift in his wife’s honor, he knew that UC Davis was the place to do it: “I can’t think of a better place that brings so many different strengths together.” +



A transformative gift for a sustainable future

Lynda and Stewart Resnick pledge \$50 million to UC Davis for innovation at the intersection of agriculture, sustainability and climate science

A new center for agricultural research and innovation will accelerate the global movement toward a more sustainable future, thanks to philanthropists Lynda and Stewart Resnick, co-owners of The Wonderful Company. The Resnicks' historic \$50 million pledge—the largest gift ever to the university by individual donors—will establish the Lynda and Stewart Resnick Center for Agricultural Innovation and direct \$10 million toward competitive research grants through the Resnick Agricultural Innovation Research Fund.

BY ASHLEY HAN

Design on the Resnick Center is expected to begin this year, with construction slated for completion by 2026. Once built, the new 40,000-square-foot LEED certified state-of-the-art hub will house classrooms, research and lab spaces, and student career and advising services.

The center will allow experts from across UC Davis to expand their explorations of new ways to balance global agricultural industry production with sustainable, scalable solutions.

“Lynda and I are so proud of what this new center will accomplish, as a hub for the best researchers in the world to help agriculture be part of the solution to climate change,” said Stewart Resnick, who is also a member of the UC Davis Chancellor’s Board of Advisors. “With one foot rooted in science and the other in social impact, the individuals who pass through this center have the opportunity to be the heroes of our time.”



HECTOR AMEZCUA / UC DAVIS

Improving lives is the heart of Wonderful

The Wonderful Company, co-run by Lynda and Stewart Resnick, is one of the largest privately held companies in the U.S. Their iconic brands include FIJI Water, POM Wonderful, Wonderful Pistachios, Wonderful Halos, Wonderful Seedless Lemons, Teleflora, JUSTIN, JNSQ and Landmark wines.

Every year, the Resnicks invest in education, community development, and health and wellness initiatives across the Central Valley, where much of their company’s agricultural production takes place. To date, the Resnicks have invested more than \$2.3 billion in philanthropy, with more than \$1.3 billion invested in environmental sustainability.

“The Central Valley, the people here and the fertile, generous land have been so good to us,” Stewart Resnick said. “There is no place on earth where Lynda and I are more committed to giving back.”

“The Resnicks’ vision is a testament to what philanthropic partnerships with UC Davis can achieve,” said Shaun B. Keister, vice chancellor for Development and Alumni Relations.

UC Davis is a natural partner for the longtime university donors, as it leads the way in advancing agricultural innovation, sustainable farming and food security, in California and around the world.

Growing a longtime partnership

The Wonderful Company and UC Davis have been partners for more than 40 years.

“There is no stronger partner to drive transformative innovation than UC Davis,” Resnick said. “The relationship between The Wonderful Company and this campus is strong and longstanding. We share a passion for progress at the intersection of agriculture, science and sustainability.”

To date, Wonderful has hired more than 50 UC Davis alumni to its company and have more than 60 Wonderful Scholars currently enrolled at the university. Many of these Wonderful Scholarship program recipients are first-generation college students from California’s Central Valley region.

CONTINUED ON NEXT PAGE...



KARIN HIGGINS / UC DAVIS

Lynda and Stewart Resnick, at center, celebrate their recent gift with UC Davis Wonderful Scholars.

Finding new uses for crop byproducts

The Resnick Agricultural Innovation Research Fund aims to support the transition to food production systems that repurpose and continually reuse as much byproduct, agriculture and otherwise, to reduce waste and ease the environmental impact of food production for a growing world.

Specifically, the fund will promote collaboration across an expanding network of research faculty, agricultural producers, food companies, pharmaceutical companies and commodity boards, who can together deliver scalable change that delivers a sustainable future for generations to come.

Beginning this year, research grants will be awarded annually to UC Davis faculty and Cooperative Extension specialists focused on identifying value-added properties in pistachio, almond and pomegranate byproducts. The concept has its roots in the decades-long collaboration between UC Davis and The Wonderful Company—taking ideas from cutting-edge research to practical implementation in the fields.

This includes last year’s Wonderful Innovation Challenge, which sought to fund practical solutions that could be applied across the Resnicks’ company to advance sustainability. One outcome was a new way to repurpose the more than 50,000 tons of pomegranate husks generated each year making POM Wonderful juice—byproduct otherwise destined for a landfill.

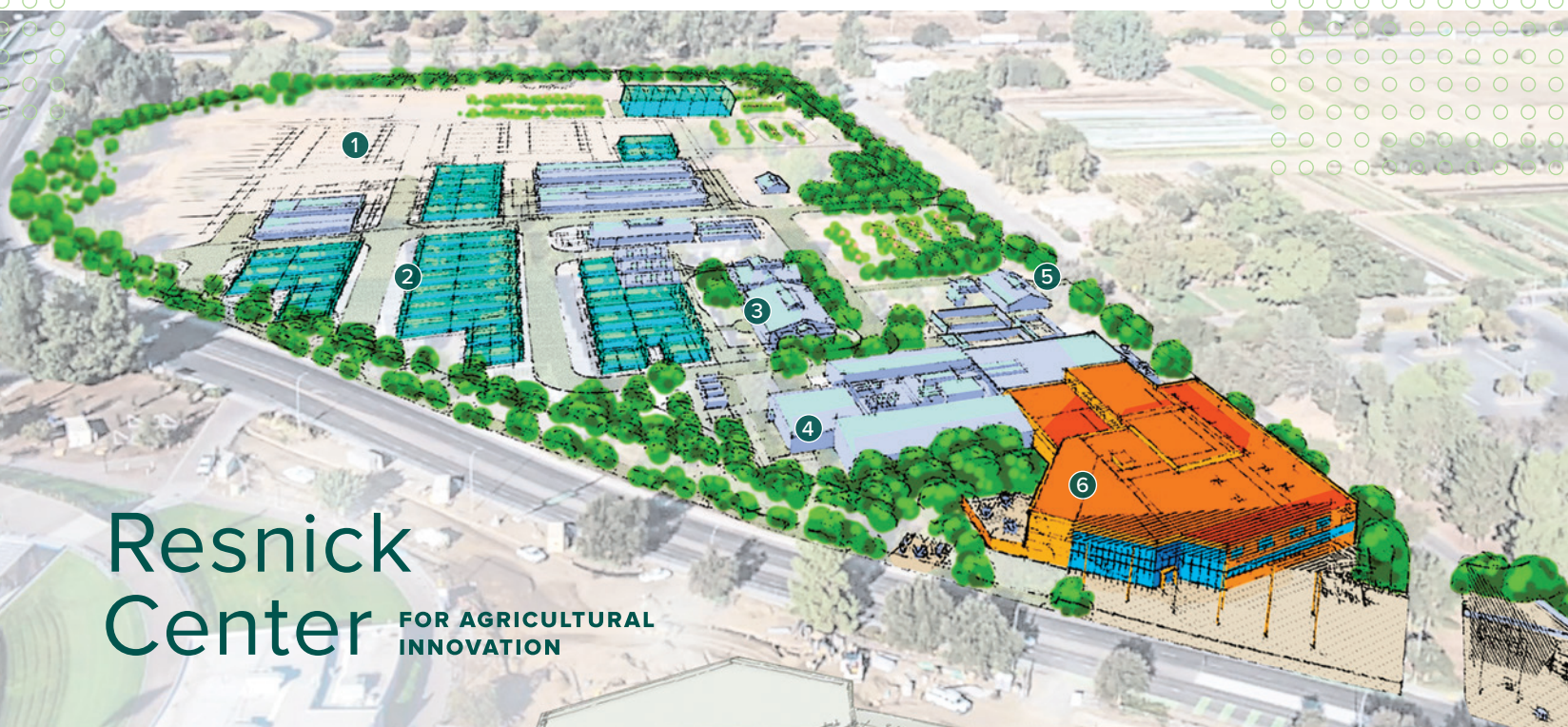
Developing sustainable, resilient crops for nutritious food

Implementing innovative solutions to address climate change is imperative, particularly with rising temperatures, as crops need to withstand diversified environments.

The university’s holistic approach to sustainable agriculture considers the impact on the planet, people and communities—with an emphasis on expanding access to nutrient-dense food in underserved communities.

“Thanks to this historic gift from Lynda and Stewart Resnick, UC Davis will further expand its global reach, helping to shape the future of sustainable food production,” said

CONTINUED ON NEXT PAGE...



Resnick Center FOR AGRICULTURAL INNOVATION

- 1 Core greenhouse expansion area
- 2 Core greenhouses
- 3 Bowley Plant Sciences Teaching Facility (*existing structure*)
- 4 Plant sciences building (*existing structure*)
- 5 Student Farm Field House (*existing structure*)
- 6 Resnick Center for Agricultural Innovation (*new structure*)



“This gift aims to help our greatest scientific minds rise to the greatest challenge of our time—the sustainability of our planet for future generations.”

- STEWART RESNICK

GREGORY URQUILA / UC DAVIS



GREGORY URQUILA / UC DAVIS



KARIN HIGGINS / UC DAVIS

Diversity fund offers scholarships to viticulture and enology students

The new Theopolis Vineyards Diversity Fund is helping students interested in the wine industry pursue their degree in the Department of Viticulture and Enology at UC Davis.

The fund will provide one scholarship of up to \$10,000 each year to undergraduate students interested in viticulture and enology and related research or managing a vineyard, with a preference for students who are underrepresented or face barriers to entering the industry.

Theopolis Vineyards founder Theodora Lee took continuing education classes offered by the viticulture and enology department and donated \$70,000 to create the fund, which awarded its first gift last school year to Iona Joseph '22 from South San Jose.

“As one of the few African American women who owns her own vineyard, I hope to inspire others to become vintners,” Lee said. “It is important that young folks know that they, too, can pursue careers in viticulture, vineyard management and even own a vineyard, and thrive in the wine industry.”

The viticulture and enology department has focused on increasing diversity and inclusion in its student body for more than a decade, establishing its Broadening Horizons program for that purpose in 2012, said David Block, professor and chair. As a result of those efforts, the percentage of underrepresented students enrolled has increased to 25 percent, up from less than 10 percent.

“Having awards like this one from Theodora Lee are really important,” Block said. “The hope is they enable people from diverse backgrounds to attend our program. We’re very appreciative of the support of our students.”



Gary S. May, UC Davis chancellor. “This gift demonstrates a continued commitment to innovative environmental stewardship and allows us to create science-based solutions that can be rapidly deployed while mitigating the impacts of climate change.”

By bringing engineering and agricultural experts together, the center will allow UC Davis to accelerate the development of new methods for food production. Faculty, industry partners and students will translate molecular science breakthroughs into cutting-edge

tools—leading to new sensing and robotic systems including smart machines and intelligent irrigation systems.

Work at the center will enable the molecular discovery of critical plant traits that deliver highly nutritious, resilient crops that can be sustainably grown with limited resources. In addition, the center will prepare students to lead California’s food science and policy, and develop industry best practices to support vibrant, healthy communities.

“Advanced technologies, coupled with facilities that enable student training and innovation, will ensure the center produces both the technologies and experts needed to meet the challenges of creating a sustainable food system,” said Christopher Simmons, professor and chair of the Department of Food Science and Technology.

About the College of Agricultural and Environmental Sciences

- › Globally referenced and cited as the gold standard for agricultural and environmental research.
- › Graduates fluent in smart farming technologies, genetics and computer mapping to advance agricultural research.
- › Areas of study covering scientific, social and dietary impacts of climate change.

Conserving critical resources

Water management is essential to keep crops resilient. As leaders in hydrology and soil science, UC Davis experts and students are developing technologies that will optimize water use.

“The new center’s capabilities will further enable advancements in agricultural sensing and robotics, novel crop varieties, artificial intelligence in agriculture, and more,” said Simmons.

With the Resnicks’ support, faculty can focus on new methods of accelerating groundwater recharge—where



JANEL MACKENDORF / UC DAVIS

“Advanced technologies and facilities to enable student training and innovation will ensure the center meets the challenges of creating a sustainable food system.”

—CHRISTOPHER SIMMONS, PROFESSOR AND CHAIR OF THE UC DAVIS DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

JOE PROUDMAN / UC DAVIS

surface water rejoins groundwater—to bank greater reserves during rainy seasons to use for future irrigation needs.

Another conservation focus will be food waste management, as discarded food in landfills represents millions of dollars of waste and creates an abundance of greenhouse gasses. The center will empower faculty to further explore innovative ways to put food waste to use, with the potential for extracting food compounds from agricultural byproducts, such as plant stalks, leaves and nut shells, for nutritional purposes.

“Many specialty crop byproducts are treasure troves of compounds that can promote health, improve soil quality, influence microbial ecology, or be converted into valuable products,” said Helene Dillard, dean of the College of Agricultural and Environmental Sciences. +

Dedicated volunteer gives \$1 million to Bohart Museum

Bill Patterson, longtime butterfly collector and UC Davis supporter, has given \$1 million to the university’s R.M. Bohart Museum of Entomology to help maintain its permanent insect collection.

“I hope my donation will help educate the community about the importance of butterflies and moths,” Patterson said, adding that with this gift, he aims to benefit researchers and the museum’s extensive collection of almost eight million insect specimens.

Lynn Kimsey ’76, Ph.D. ’79, professor of entomology and the museum director since 1989, said their vast and diverse collection requires intense, hands-on labor.

“Bill’s gift is a huge contribution and it’s really sweet of him to give during our most challenging years,” Kimsey said. “It’s going to give us working capital to support a much-needed full-time position, as well as ensure that we have essential supplies.”

Patterson has been a museum volunteer since 1993, contributing to the California Insect Survey, a storehouse of the insect biodiversity in California. He has also donated his personal foreign butterfly collection for student and research use. Patterson plans on supplying the rest of his collection, almost 40,000 butterflies and moths, to the museum in the future.

“I believe scientifically valuable collections should not stay in private hands. The museum is the perfect place for my collection to be permanently protected and studied,” said Patterson, who lives in Sacramento with Doris Brown, his wife.

ASHLEY HAN / UC DAVIS



Patterson and Kimsey



SAVING Lake Tahoe

BY CLÉMENTINE SICARD

Lake Tahoe's waters are world-famous for their clarity and beautiful Sierra setting—they also provide key environmental and economic resources to Northern California. But with climate change and other human impacts degrading both the lake and its surrounding basin, urgent action is needed to preserve this jewel of the Sierra Nevada.

"There is only one Lake Tahoe," said Geoffrey Schladow, director of the UC Davis Tahoe Environmental Research Center (TERC) and professor of civil and environmental engineering. "It's our job to keep this region as beautiful as it ever was."

Since its founding in 2004, TERC experts have worked to build a more resilient future for the Tahoe Basin, conducting key research and actively seeking solutions to improve outcomes for the lake's waters and its surroundings.

With donor support for new technology and research, TERC will have an even greater impact on Tahoe's future.

State of the lake

TERC is the largest facility for limnology—the study of lakes and other bodies of fresh water—west of the Great Lakes. Its research team includes biologists, chemists, engineers and more.

A key annual contribution from center researchers is TERC's "Tahoe: State of the Lake" report, which informs the public about important factors affecting the health of Lake Tahoe and provides the scientific underpinnings for restoration and management decisions within the Lake Tahoe Basin.

The 2022 report described the top issues facing the lake, including the collapse of the zooplankton and Mysis shrimp populations; an abrupt change in the phytoplankton community; and the extent of algal growth impacting large sections of the Tahoe shoreline.

"Any one of these changes would be a big deal in a single year," said Schladow. "All three occurring at once is particularly alarming and a huge opportunity to learn lessons that can be used to inform future management."

A blooming threat

Algal blooms along the shoreline are one of the most pressing issues facing the lake's aquatic health.

"These nearshore blooms degrade water quality, make large areas of beach unpleasant with mats of decomposing algae, and for particular types of algae, can pose toxicity issues," Schladow said. "They also occur where the greatest numbers of people, residents and visitors directly interact with the lake."

Beginning in 2017, TERC began examining the entire shoreline with an instrumented helicopter and a drone several times each year. This novel and powerful approach painted a better picture of the algal blooms that have been a growing ecological threat to Lake Tahoe's ecosystem.

TERC is now learning that the areas impacted do change radically, and may be increasing due to the combined effects of warming water temperatures and changing water levels. But public funding for this work has dried up.

Schladow said TERC needs to raise enough private funding so the program can not only be maintained but expanded to include research into the best cleanup and mitigation methods.



Protecting the land

Beyond the lake, the Tahoe Basin ecosystem includes its shore and surrounding forest—unique areas that require careful monitoring and maintenance. One of the largest threats to the region in recent years is wildfire.

“Megafires are a threat not just to the whole ecology and health of the forest, but also to the people living here,” said Schladow. TERC scientists are actively working on solutions to restore the forest and minimize the damage from wildfires.

New tools and technology

With high-tech labs, field equipment and a small fleet of vessels, TERC scientists are conducting interdisciplinary research on the terrestrial and aquatic ecosystems of Lake Tahoe. As this work evolves, it requires more advanced resources, including donor support.

One high-priority need is a new and innovative vessel for lake exploration—the current vessel, R/V John LeConte, has been serving UC Davis for nearly 50 years. TERC has formed a team to design and build the first high-speed, all-electric research vessel that will minimize impact on the environment.

“The new vessel will expand what we can do, allowing us to take students out on the lake for class experiences like no others in the world, and conduct even more research directly there,” said Schladow.

Another priority is an automated sampling station powered by wave energy, called a Wire Walker. It can record and send real-time data to labs every 20 minutes, including when crews are unable to go out to collect samples.



Educating the local community and beyond

Learners of all ages and backgrounds—from K-12 and college students, to international researchers and local tourists—can visit TERC’s interactive educational centers to explore how they can help the environment.

“Our goal is to provide science-based information about the Lake Tahoe region to foster responsible action and stewardship,” said Heather Segale, director of education and outreach at TERC.

TERC’s education and outreach efforts serve more than 15,000 people annually, with plans to expand.

“Lake Tahoe is emblematic around the world and people are looking at what we’re doing here. Our work has impact on other lakes and mountain systems across the globe,” said Schladow. +

“Covid has disrupted the research funding just when the lake is in crisis. We must act immediately to keep the research efforts going, and to remove the algae from the lakebed.”

- MIKE BRUNO, TERC ADVISORY BOARD MEMBER AND DONOR

Thriving with support

*Donors help students
learn and grow*

BY ASHLEY HAN



Nate Walker '22

Behind every student at UC Davis is an untold story of personal growth—and for many, struggle. This is where donors make the difference by funding scholarships and other student success programs offered through the Division of Student Affairs.

The Division of Student Affairs assists all students and members of the campus community in their academic, social, cultural, personal and civic development. More than 20 programs, services and facilities bolster community and belonging, health and wellness, career preparation and more.

In fiscal year 2021-22, more than 1,800 donors gave \$4.05 million to the division to help Aggies on their journeys to success—an immense impact, especially for the 67 percent who qualify for financial aid and 38 percent who are first-generation college students.

From working in the fields to growing up in foster care, three students found relief with donor support to help them realize their dreams.



I hope that people who contribute will see how far their donations go because it truly takes away a lot of the burden that students experience.”

- AMAN KAUR '22
College of Letters and Science



MEGAN TAYLOR / UC DAVIS

Fostering an environment for growth

When Aman Kaur '22 was six years old, her parents, who immigrated to the U.S. in the 1990s, were sent back to India. Fortunately, extended family was able to provide foster care for her in Delano, California.

Shortly after entering UC Davis as a first-generation college student, Kaur found out she qualified for the Guardian Scholars Program (GSP), which provides services and support for students with lived experiences in foster care.

“I knew education would be the best way to sustain myself in the future,” Kaur said about pursuing her managerial economics degree at UC Davis. “I’m grateful for the Guardian Scholars Program for providing scholarships and a sense of belonging.”

Through GSP, Kaur received support that covered the cost of her textbooks and helped her furnish her first college apartment.

“UC Davis has so many resources. Once you get connected to the right people and you have the funding, life becomes a lot easier,” Kaur said. GSP students, on average, achieve academic success with a 3.08 GPA, according to the program’s 2019-2020 impact report.

Kaur also conducted research through UC LEADS (Leadership Excellence Through Advanced Degrees), a philanthropically supported two-year program for disadvantaged undergraduates majoring in science, mathematics or engineering.

“One of my favorite research projects was analyzing the effectiveness of the Women, Infants and Children (WIC) Program on educational outcomes,” Kaur said. “The hard and soft skills I gained through my degree will guide me towards my future career.”

Kaur worked multiple on-campus jobs and was an executive leader in her sorority, Chi Omega. She gradu-

ated in June and is now a marketing intern at Oracle. She’s working on bringing her family back to the U.S. so they can all live together again.

From manual harvesting to engineering

Growing up in the Salinas Valley and working in the fields since the age of 14, Jesus Trujillo '23 knows manual field labor. At UC Davis, he is taking a new approach to it by studying mechanical engineering and precision agriculture.

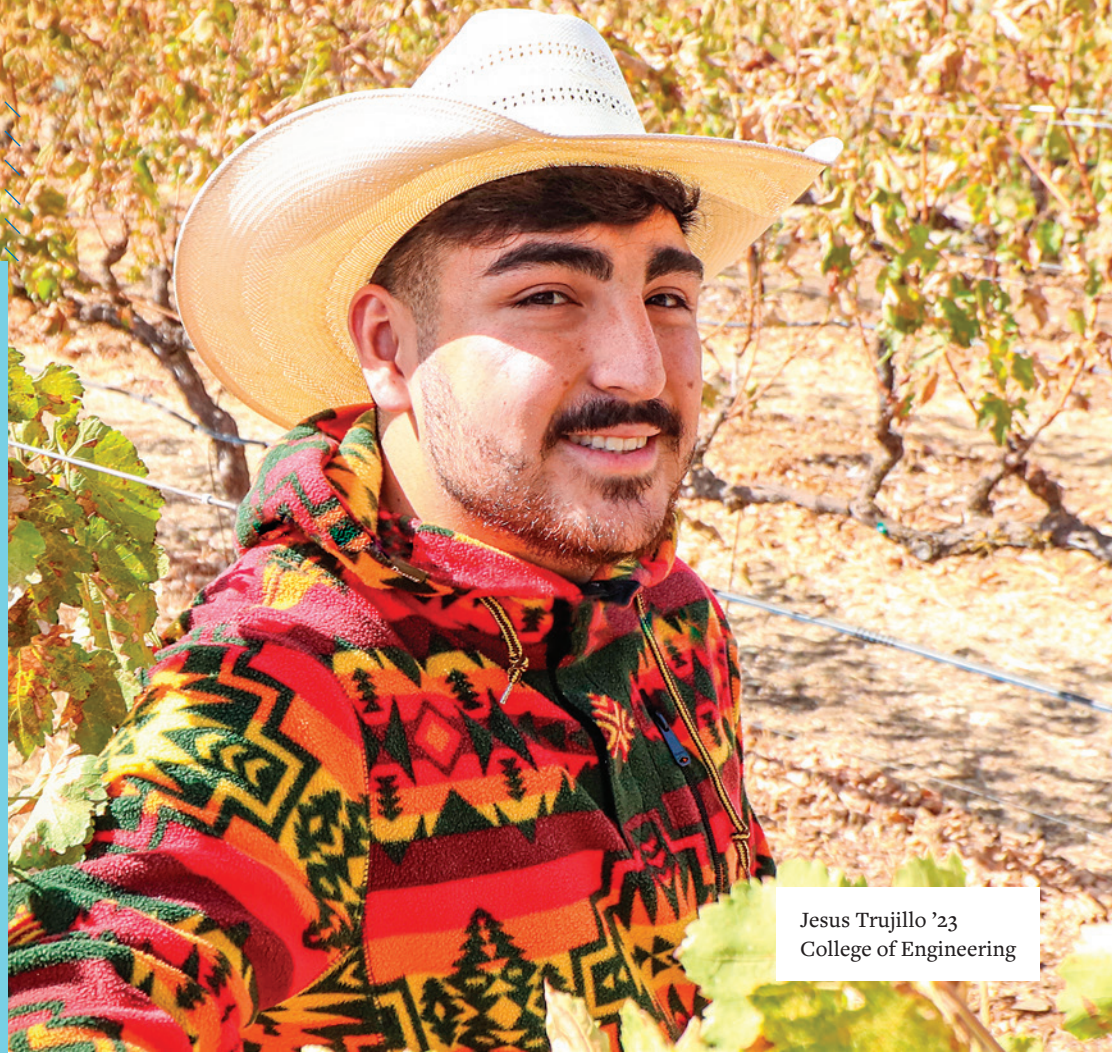
“In my experience, money makes decisions for you,” said Trujillo, who is planning a career in automated harvesting. “UC Davis was a clear choice because of the financial aid and scholarship I received, and it’s one of the best ag schools.”

As a first-generation college student, Trujillo found navigating higher education a challenge. Although he

CONTINUED ON NEXT PAGE...

Education powerhouse

- › UC Davis is the #2 public university in the country for social mobility, research, and community and national service (*Washington Monthly*, 2022) and #10 overall (*U.S. News and World Report*, 2022).
- › It ranks among the top 15 public universities for best career placement (*Princeton Review*, 2023).
- › More than half of the university's 31,657 undergraduates earn their degree from the College of Letters and Science, which offers students more than 110 majors and minors.



Jesus Trujillo '23
College of Engineering

always had his parents' support, he said he could not seek academic advice from his father, a tractor driver, or his mother, who works on a field weeding crew. Instead, he was able to rely on connections he made at UC Davis for support.

Trujillo began working as a lead student farmer in fall 2021 at the donor-supported UC Davis Student Farm. Trujillo gained leadership skills by guiding groups of students to complete tasks on the 23-acre farm.

"The farm allows students to grow and donate produce to centers on campus while learning about food security and food justice," Trujillo said. "To continue this great work, we're always in need for more support. Donors can help improve our equipment and supplies."

Trujillo said the Student Farm's welcoming environment gave him a feeling of community. He ended the academic year on a high note, making the College of Engineering's Dean's Honors List in the spring.

"Working with great people on the Student Farm gave me the confidence to continue working on my degree and career," Trujillo said. "I want to make the most of my time here and I'm looking forward to next year."

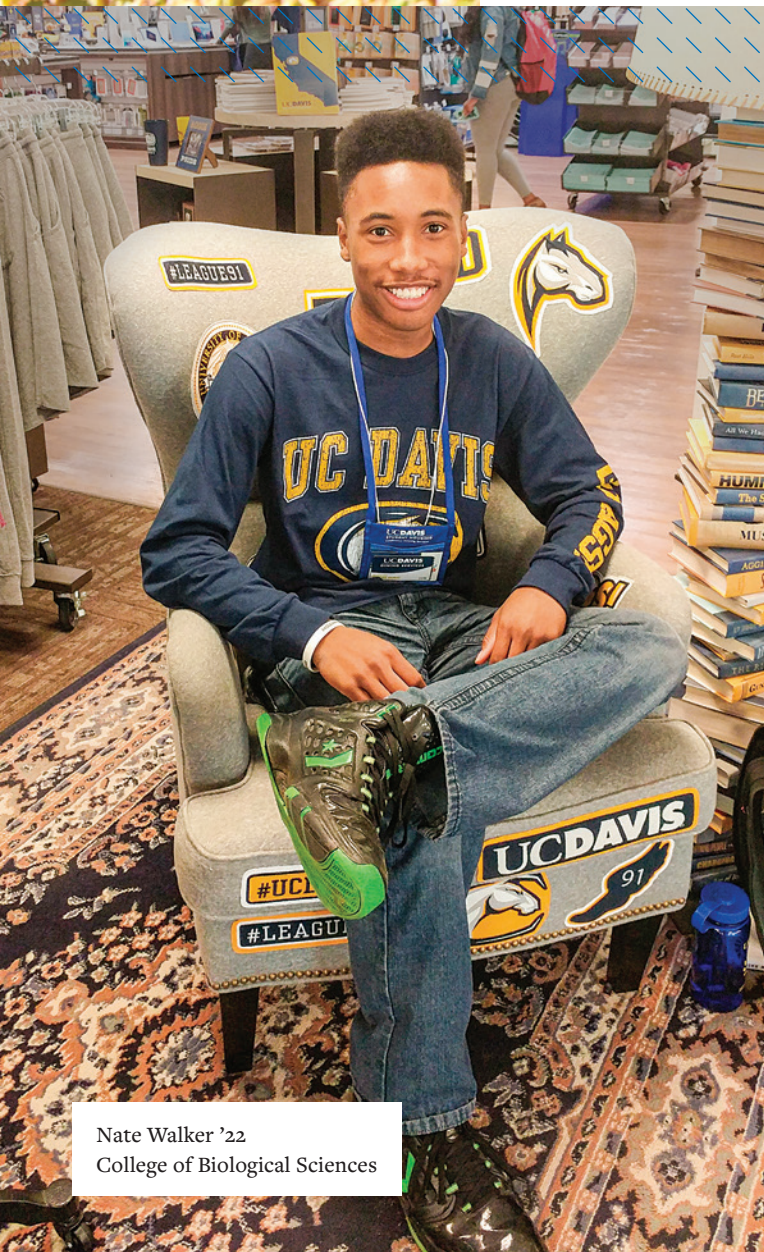
A vital foundation for long-term success

Nate Walker '22 grew up in the midst of nature and animals in his small hometown near Dallas. He aspired to study veterinary science at UC Davis and discovered a unique donor-funded program that would help him achieve his goals.

The Linda Frances Alexander Scholars Program (LFA) provides academic, social and cultural enrichment to students of the African Diaspora. A program within the Center for African Diaspora Student Success (CADSS), LFA also provides academic advising and resources for goal-setting and leadership.

"LFA was one of the best programs I experienced at UC Davis because it gave me the jumpstart I needed to have a strong support base," Walker said. "The people I've met through the program have become some of my closest friends in college."

Historically, African American graduation rates have been lower than those for all undergraduates at UC Davis, prompting the Division of Student Affairs to launch the African American Initiative and open CADSS in 2015—one of the division's 12 centers that support community development.



Nate Walker '22
College of Biological Sciences

Walker said he benefited from the LFA program so much that he became a student assistant at CADSS to help others.

“CADSS was like a second home for me,” Walker said. “If you needed to recharge, you could go there and find people in your community who encourage you to succeed.”

As a student studying biological sciences, he was able to observe and research pikas in the Sierra Nevada and intern at the Aggie Animal Clinic in Dixon.

Now a graduate, Walker is seeking field research opportunities and internships before deciding on his next steps. He said his experiences at UC Davis have prepared him for a wide breadth of career paths.

“I’m glad I ended up where I am now because I have more opportunities to dive into my interests and help animals in some way.” +

Donors give \$8 million for student life, from pantries to professions

Longtime donors Joelle '89 and Michael Hurlston M.B.A. '90, M.S. '91 gave \$8 million this year to support Aggies along every step of their college paths, from meeting basic needs to offering excellent career development, innovation opportunities and graduate school experiences.

“We want our gifts to touch as many UC Davis students on campus as possible, beyond the colleges we graduated from,” Joelle Hurlston said.



GREGORY DROJNAGA / UC DAVIS

The majority of the contribution will establish the first endowed deanship at the Graduate School of Management to provide funds at the dean’s direction, allowing Dean H. Rao Unnava to advance the mission of the school. This is only the second endowed deanship at the university—the first created in 2015 at the Betty Irene Moore School of Nursing at UC Davis.

“Dean Unnava has been a change agent for the school and has found different ways to elevate its brand,” said Michael Hurlston, who is a member of the Graduate School of Management’s Dean’s Advisory Council. He also serves on the Dean’s Executive Committee for the College of Engineering.

The remainder of the gift will benefit three undergraduate areas: the Diane Bryant Engineering Student Design Center in the College of Engineering; the Internship and Career Center for agricultural and environmental sciences students; and the Aggie Compass Basic Needs Center.

“After having had two children go through college, I’ve seen how students struggle with what they want to do when they graduate,” Joelle Hurlston said. “Michael and I are hoping that our gift will open doors for all students.”

You put me first

First-generation college students share how donor support is helping them achieve their dreams.



GREGORY URQUIAGA / UC DAVIS

Coming from nothing to academia is daunting. My motivation for mentorship comes from doing things wrong ... a lot. I strive to aid students in navigating the pitfalls I have found the hard way.

Receiving the Dean's Mentorship Award is amazing. It allows me to pursue the betterment of my own abilities and take my mentorship to another level of professionalism. And as a first-generation student at this level of higher education, the acknowledgment of my devotion and abilities is crucial."

- COLTON BAUMLER Ph.D. '26
College of Biological Sciences
Dean's Mentorship Award winner

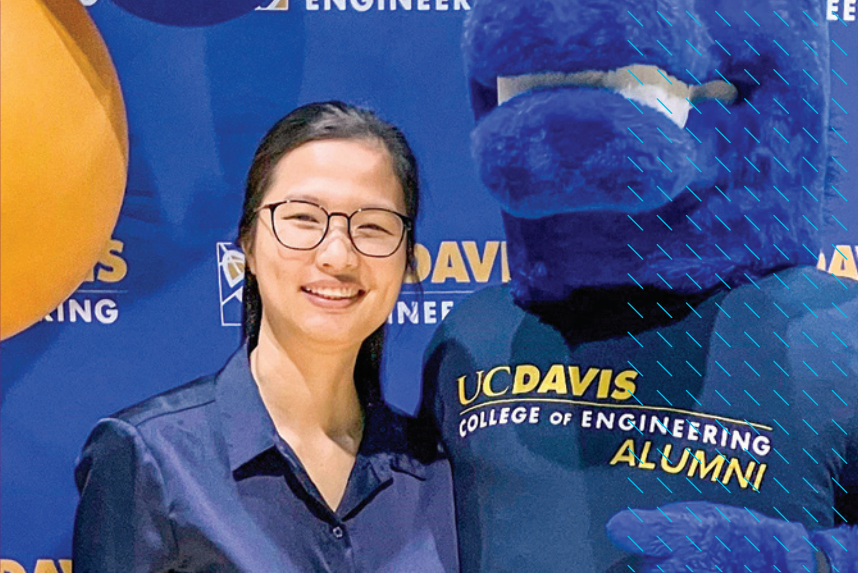
I am proud of my parents' work, but that was not the life they wanted me to follow. School was the gateway to opportunities outside of the fields. A higher education promised escape from working under the harsh sun, exposure to pesticides and increasing back problems.

My scholarship has allowed me to focus my energy on student teaching and connecting with my students instead of worrying about rent and groceries. Thanks to your support and contributions, I have been offered the opportunity to thrive versus just survive."

- FATIMA PATIÑO CRED '22, M.A. '23
School of Education
Bilingual authorization candidate



GREGORY URQUIAGA / UC DAVIS



Being a first-generation student who grew up in Vietnam, I realize the value of postsecondary education. Financial barriers have been the main issue hindering me in reaching my educational goals.

As an immigrant without English fluency, it is difficult for me to find a good job. Also, I am a single mother, so I must work not only to fund my education, but to support my son. I really appreciate my scholarship because I'm able to reduce my 30-hour work schedule and have time to participate in more programs on campus, to earn skills and experience that will prepare me for my career."

- KATHY LUONG '22

College of Engineering, *civil engineering*

Donor support has allowed me to succeed as a first-generation college student because I've been able to worry less about finances and focus on my studies stress-free. I've also been able afford things like a new backpack and the cost of summer classes.

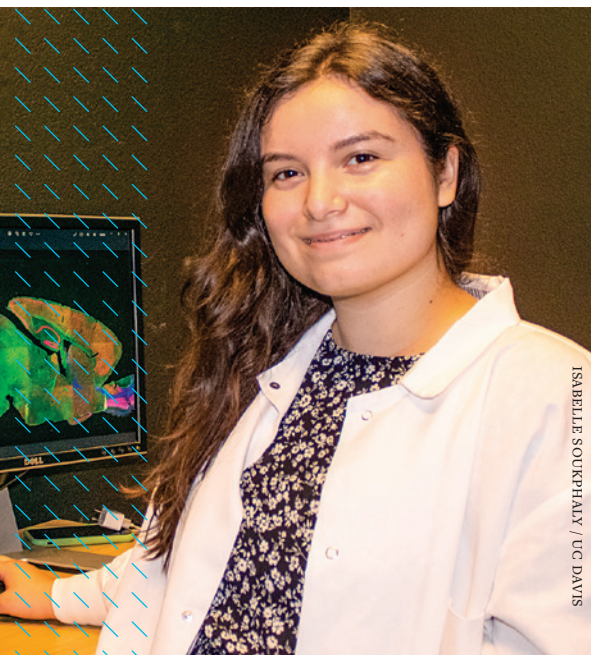
As a community college transfer student, I struggled with adapting to the quarter system but I am lucky to have my older brother for advice, as he has always been one step ahead of me in our first-gen college experiences. I'm enjoying my time at UC Davis so far and plan to give my best effort in my last year so I can finish strong and graduate."

- GURTAJ GREWAL '23

College of Agricultural and Environmental Sciences
Community and regional development



MEGAN TAYLOR / UC DAVIS



ISABELLE SOUKPHAXY / UC DAVIS

Because of my scholarship I have a roof over my head, I have a full stomach every night, and I am one step closer to pursuing my dreams of becoming a neuroscientist.

It's donors who really do transform the world by empowering students with the tools that they need to pursue their dreams and to make their communities proud. This UC Davis student is forever grateful."

- JACQUELINE VILLALOBOS '23

College of Biological Sciences, *neurobiology, physiology and behavior*

Innovating FOR OUR future

From our morning cups of coffee to our essential health care routines, the daily aspects of our lives are being studied—and improved—by UC Davis graduate students.

These scholars are committed to taking the extra step in education and discovery, all while assisting their professors and teaching undergraduates.

With a boost from the funds provided by philanthropy, graduate students have even more opportunity to answer knotty questions, explore new avenues of research and make important contributions to their fields.

BY CLÉMENTINE SICARD

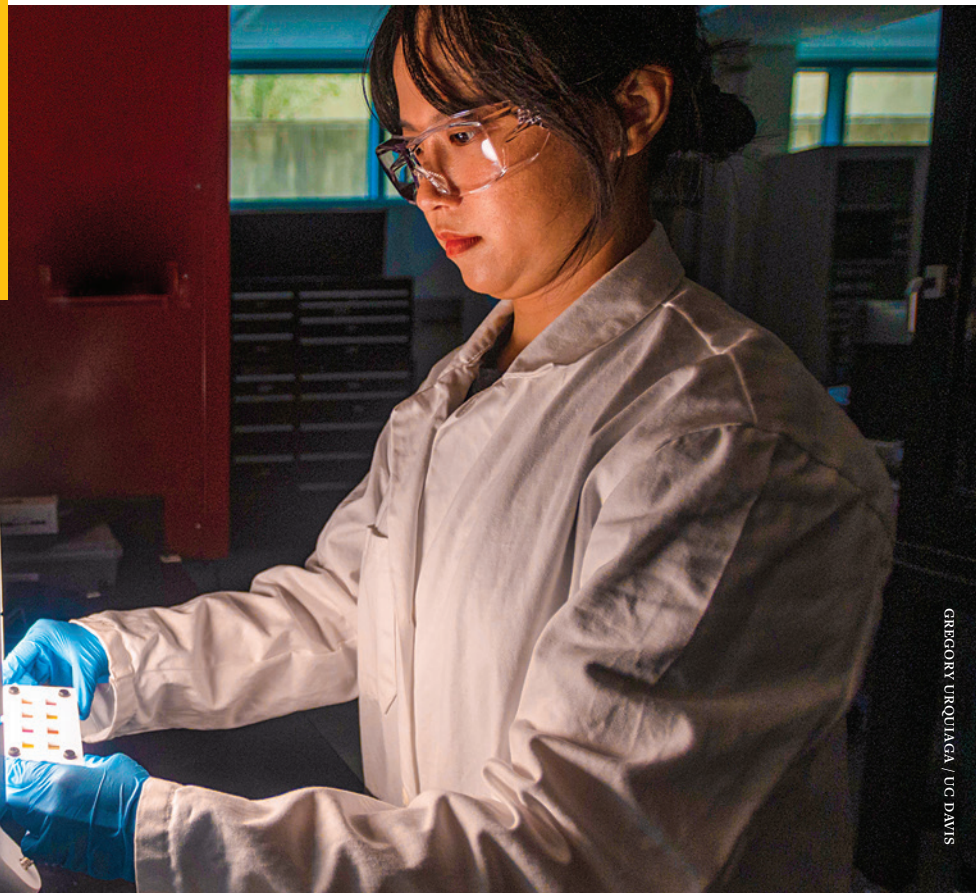
Biodegradable, color-changing display devices

Imagine a medication that changes color when it expires. Such an innovation could help save lives.

Peifen Lyu '19, Ph.D. '25 has created a magnesium-based nanoscale optical device that dissolves in water and changes colors in displays. It creates a color change across several applications, such as a coating for pills or as sensors in environmental science for testing different chemical compositions.

“What’s unique about our materials’ choice is it has a really broad range of applications, from environmental science to health care and data encryption,” said Lyu, who is a student in the lab of Chancellor’s Fellow and Associate Professor Marina Leite in the Department of Materials Science and Engineering. The Chancellor’s Fellows program has been supported by annual donors for 22 years and provides unrestricted funding to faculty working on innovative research.

Lyu places the magnesium-based reflective color filter device in a light box to take photos.





Vali (left) and Hoang with the transabdominal fetal pulse oximeter device.

Because it is made of magnesium, which can be absorbed through skin, this innovation can also be used for skin implants that change colors while measuring different health factors. Since the material is absorbed, there would be no need for a procedure to insert or remove it.

Devices created for photonics—the study and applications of light—are often made with materials like silver, gold, or copper, but these are expensive or require several processes for recycling. Magnesium, the eighth most abundant element on the Earth’s crust, is far less costly and is biodegradable through a green chemistry reaction.

“Magnesium is a fantastic material to control the electromagnetic spectrum. Plus, it is an earth-abundant and biodegradable material that can be used for many applications,” said Lyu. “We were able to shrink the dimensions of magnesium into nanometers and fabricate color pixels that can show a different range of hues than what is currently possible.”

While the work is still underway, Lyu said their model is highly scalable and will be easy to apply to future inventions.

“It’s really exciting to get to work on these kinds of projects that can have a lot of impact in my field: functional materials,” said Lyu.

CONTINUED ON NEXT PAGE...

An invention for monitoring fetal oxygen levels

The winners of the 22nd annual Big Bang! Competition, Kouros Vali Ph.D. ’24 and Regina Hoang M.B.A. ’23, helped develop a noninvasive tool that accurately determines a baby’s well-being in the womb.

Built in the lab of Soheil Ghiasi, professor of electrical and computer engineering, the invention is called a transabdominal fetal pulse oximeter (TFO) and can measure a baby’s blood oxygen saturation levels. It can also help prevent unnecessary Caesarean sections.

“This breakthrough device will make labor and delivery safer for moms and babies,” said Vali, a computer engineering student. “It will let doctors know when the fetus’ blood oxygen saturation levels are low—a red flag that indicates the baby needs to come out right away or risk losing oxygen to the brain or organs.”

The competition, organized by the donor-funded Mike and Renee Child Institute for Innovation and Entrepreneurship, has been helping entrepreneurs start or grow business ventures for more than two decades through the competition, workshops, mentoring and networking opportunities.

“I believe in developing businesses that serve a bigger purpose in society,” said Hoang. “I’m very passionate about bringing the TFO medical device into hospitals as soon as possible, so that it can help women and children have better health outcomes.”

Vali and Hoang, team members of the Davis-based Storx Technologies, won the \$20,000 first-place prize in the competition. They plan to use the prize money to conduct more market research and seek venture capital funding.

“This hands-on experience was wonderful,” said Vali. “It is an honor to work on this project that can have such an important impact for families.”

Filling an essential knowledge gap of the coffee industry

Coffee roasting is a crucial step in manufacturing and selling coffee. However, the exact chemical and kinetic changes that occur to coffee beans during the process are still relatively unclear.

That's why Laudia Anokye-Bempah M.S. '22, Ph.D. '26 in biological systems engineering is working with experts at the UC Davis Coffee Center to create the industry's first standardized coffee roasting chart.

"This work can be groundbreaking for the coffee industry," said Anokye-Bempah. "Coffee roasting has been around for centuries, but it's still not a clearly defined process. If we can provide this information to roasters it will make their work much simpler."

There is currently no fixed roasting chart that companies can use to control the roasting process. The experiment, funded by PROBAT, Inc., will

provide a standardized roasting chart that outlines the physical and chemical changes in the coffee beans throughout a roast process.

Anokye-Bempah is analyzing parameters like moisture content, color, titratable acidity and other chemical measurements to determine how coffee beans change throughout every step of roasting.

"If we understand what is happening during a roast, we will be able to control the process and outcomes," she said. "We are working on a solution so that roasters obtain the coffee they desire."

The Coffee Center at the College of Engineering is a donor-supported multidisciplinary research center to address the challenges and needs of the coffee industry and brings in scientists from around the world—including Anokye-Bempah, who came to study at UC Davis from her home country Ghana.

"It feels great to be a part of the team. We get invited to many conferences and people always recognize UC Davis and the work we do at the Coffee Center," she said. +



Anokye-Bempah uses a 5-kilo PROBAT Roaster to roast coffee beans.

Alumni couples support data science at the Library



Rich Pauloo Ph.D. '20 and Marisa Donnelly Ph.D. '20 back up scientific data related to climate change at the UC Davis DataLab.

KARIN HIGGINS / UC DAVIS

In today's fast-paced, tech-driven world, data science is foundational to nearly every field—informing decisions that impact our health, the environment, politics and society. With the generous support of alumni donors, the UC Davis DataLab is rising to the challenge of helping students and researchers build those skills.

Specializing in data science and informatics, DataLab offers hands-on learning opportunities and resources for every subject area across the university. This interdisciplinary program, housed at Shields Library, also partners with faculty on cutting-edge research.

Three alumni couples have recognized DataLab's critical role at UC Davis by establishing endowments, committing to the vision that DataLab's services should be supported in perpetuity.

Ely Estoesta '10, M.S. '14 and **Timothy Jurka '10** gave \$50,000 to create the Estoesta-Jurka Family Research Endowment, plus a \$25,000 current-use gift to support the DataLab Experiential Learning

and Research Fund in December 2021. Additionally, a portion of the gift was matched by **Microsoft**, owner of LinkedIn, where Jurka works as a senior director of engineering.

"We felt so fortunate to have mentors and advisors who encouraged interdisciplinary learning. We wanted to pay it forward so students can be funded to pursue interdisciplinary projects," Jurka said.

Also in 2021, **Barbara '70** and **Paul Schneeman M.S. '86** created the \$50,000 Schneeman Library Endowment to advance learning opportunities at the DataLab, in addition to giving \$10,000 to the same fund in May 2022. They also gave a \$1,500 current-use gift to the DataLab's general support fund in 2020.

The Schneemans are pleased their generosity will support the DataLab's mission of "using data in a way that helps solve problems and helps people understand where they are going with their research," Paul Schneeman said.

Likewise, **Diane '72** and **Rich Zimmerman '72, M.S. '78** made a \$50,000 commitment this year to the DataLab. In addition to creating the Diane and Rich Zimmerman Endowment for Experiential Learning and Research, the couple gave a \$10,000 current-use gift to the DataLab Student Experiential Learning and Research Fund.

The Zimmermans say they were inspired to give to the UC Davis Library to help today's students navigate the rapidly changing landscape of knowledge and technology.

"We give for the greater good," Diane Zimmerman said. "And that's just what the DataLab will achieve with these generous contributions." +

Mondavi Center AT 20

In 2002 donors helped UC Davis “take its place as one of the nation’s leading performing arts destinations,” a news story said that spring, by funding almost half of the \$60.9 million project cost to build a state-of-the-art performance center on campus.

Major gifts included a \$10 million naming gift from Napa winemakers Robert and Margrit Mondavi, and \$5 million from arts patron Barbara K. Jackson to name the 1,801-seat main hall. The Mondavi Center for the Performing Arts opened to great acclaim that October.

Today, patrons of the arts continue to give—more than \$13.2 million since the Expect Greater campaign began in 2016—so the center can continue to bring the finest in music, dance, speakers and theater to UC Davis.

The Mondavi Center is celebrating two decades of world-class performances with a special 20th anniversary season, bringing both new artists and longtime fan favorites to Jackson Hall in 2022-23.



GREGORY TRONQUAGA / UC DAVIS

Bringing renowned artists to UC Davis classrooms

The Department of Art and Art History has solidified its place as a premier hub for artistic innovation and studio art education through the Manetti Shrem California Studio.

The initiative is believed to be the most extensive artist residency program of its kind in the United States and is supported by a \$750,000 gift from Jan Shrem and Maria Manetti Shrem.

The Manetti Shrem California Studio has hosted a slate of internationally renowned artists in residencies since the program's launch in fall 2021. Visiting artists give a public lecture and engage with students through classes, practicums and studio visits.

Spotlight artists in residence spend up to 10 days on campus working intensively with undergraduate and graduate students in hands-on seminars. The artists featured since fall 2021 include Raúl de Nieves, Jennifer Packer, Ann Hamilton, Michael Mercil and Xu Bing. Cecilia

Alemani, curator of the High Line in New York City and 2022 Venice Biennial, will be the winter 2023 spotlight artist in residence.

Teaching artists in residence are on campus for a full 10-week quarter. They lead an undergraduate studio course and a graduate seminar and are active members of the UC Davis arts community. Artists Tamar Ettun, Beatriz Cortez and Jessica Segall have served in the role.

"Some of the most extraordinary and important living artists in the world have agreed to come and inspire students just starting their careers," said Annabeth Rosen, Robert Arneson Professor of Art and department co-chair. "UC Davis will open up ... groundbreaking conversations and extensive public programming with artists from around the world."



Xu Bing, fall 2022 spotlight artist in residence

Since 1958, the Department of Art and Art History has trained individuals that inspire communities and culture. UC Davis has been home to faculty members Wayne Thiebaud, Robert Arneson, William Wiley, Roy De Forest, Ruth Horsting and Manuel Neri, to name but a few. Today, the Master of Fine Arts program is ranked 15th among "America's Best Graduate Schools" by *U.S. News & World Report*.

"Thanks to the generosity of Jan Shrem and Maria Manetti Shrem, our Department of Art and Art History is now home to one of the largest and most dynamic artist residency programs at a Research 1 university, which will provide an unparalleled experience for our students to learn from the best artists in the country," said Estella Atekwana, dean of the College of Letters and Science.

— JEFFREY DAY



Coming soon: A new home for Native American art

Thanks to the support of donors, the C.N. Gorman Museum broke ground on new renovations in April 2021 to create an improved space for its exhibitions and collections.

Founded in 1973 by the Department of Native American Studies in honor

of artist and professor Carl Nelson Gorman, the museum is committed to the creative expressions of Native American artists and artists of diverse cultures and histories, and exhibiting works by living Indigenous artists.

Funding opportunities are still available to complete this historic project, scheduled to open in 2023.

Honoring decades of dedication

For these faculty, alumni and donors, making a difference is the work of a lifetime —and philanthropy amplifies their impact.

ALL PHOTOS: GREGORY URQUIAGA / UC DAVIS

UC DAVIS MEDAL

This year, two alumni donor couples—**Jacque and Wayne Bartholomew** and **Pam Rohrich and Karl Gerdes**—were awarded the prestigious UC Davis Medal, the university's highest honor.

Jacque Bartholomew '64, spent her career at Wells Fargo Bank, and Wayne Bartholomew '64, J.D. '71, is a retired business consultant and investor. The longtime donors and volunteers have supported more than 50 UC Davis initiatives, programs and departments.

Pam Rohrich M.A. '74, D.V.M. '83 and Karl Gerdes M.S. '73, Ph.D. '84 credit UC Davis with helping them launch their careers in veterinary medicine and engineering. In addition to supporting their respective colleges, the couple have invested in Intercollegiate Athletics, CAAA, the arts and student scholarships.



above: Jacque and Wayne Bartholomew
right: Karl Gerdes and Pam Rohrich



CHARLES J. SODERQUIST AWARD

Gerry and Carol Parker and **John and Lois Crowe Ph.D. '75** are the recipients of the 2022 Charles J. Soderquist Award, given by the UC Davis Foundation in recognition of philanthropy, volunteerism, leadership and an overall commitment to UC Davis. The award comes with a \$5,000 prize, which the recipients direct to a university program or field of their choice.

John Crowe is a professor emeritus and former chair of the Department of Zoology. Lois Crowe was a biophysicist in the Departments of Zoology and Molecular and Cellular Biology until her retirement in 2001.

Gerry Parker retired from Intel in 2001 after a distinguished 32-year career. Carol Parker has served as chair of the Manetti Shrem Museum Advisory Board, a representative on the Global Campaign Leadership Council, and a member of the Women & Philanthropy Advisory Council.



above: Lois and John Crowe
left: Carol and Gerry Parker





WOMEN & PHILANTHROPY IMPACT AWARD

Leigh Ann Simmons, professor and chair of the Department of Human Ecology, is the inaugural winner of the Women & Philanthropy Impact Award in recognition of her work in mentorship, leadership and women’s health. Simmons’ research promotes population health equity among vulnerable and medically underserved populations.

The award comes with a donor-funded \$25,000 prize that the winner allocates to a campus program of their choice. Simmons has directed her winnings to the Health Equity Fund at Student Health and Counseling Services, which helps offset medical expenses for students.

Meet our winner

Anne-Marie Messano Petrie knew exactly where she wanted to allocate \$10,000 to UC Davis as the winner of the 2021 *In Greater Focus* magazine readership survey contest.

For years Petrie had been meaning to make a gift to the UC Davis Eye Center. Winning this contest, sponsored and funded by the UC Davis Foundation, was the motivating push.

“I was super excited when I found out I won because I’ve never won anything in my life,” she said. “This survey contest was a catalyst for starting my endowment in honor of Dr. Ivan Schwab, who saved me from going blind.”

Schwab is a professor of ophthalmology at UC Davis School of Medicine and he served as the director of corneal services at the UC Davis Medical Center. Now retired, Schwab is known for the development of a bioengineered artificial corneal surface.

Petrie added \$50,000 to the UCDF’s \$10,000, establishing an endowed fund to support cornea research and advance ophthalmology initiatives at the UC Davis Eye Center. The endowment is named in honor of Schwab for his dedication and the exceptional care given to his patients.



Anne-Marie Messano Petrie (left) with Ivan Schwab, professor of ophthalmology

“I don’t know a better way to pay it forward than to give back to UC Davis and promote the future of UC Davis eye care so other people can have the benefit I had,” Petrie said. “I hope my gift is the beginning of increased availability of care for all people who live in this area.”

For your chance to win this year’s contest, fill out our brief survey at campaign.ucdavis.edu/survey and let us know where you would spend \$10,000 from the UC Davis Foundation to build a better world.



SAM SELLERS / UC DAVIS

Opening DOORS

Across UC Davis and UC Davis Health, donors are bringing to fruition capital projects that are transforming both campuses. Here's a sneak peek at this year's openings.

1 **Edwards Family Athletics Center**

Aggie athletes got a back-to-school gift like no other this fall: an innovative training center built just for them. The Edwards Family Athletics Center, built with support from Bruce and Diane Edwards and other dedicated donors, opened in September to boost the health, well-being and success of student-athletes on UC Davis' 25 inter-collegiate teams. The 45,000-square-foot facility houses sports medicine offices; training facilities and instruction spaces; a full-size, natural grass practice field for all sports; and a newly renovated Bob Foster Team Center.



WAYNE TILCOCK / UC DAVIS HEALTH

② Class of 1968 Gateway

In April, the Class of 1968 Gateway was unveiled in a pre-Picnic Day celebration. The seven-foot-high, 54-foot-long metal structure welcomes all to campus from its prominent location at the corner of Howard Way and Russell Boulevard. It was built with support from the class of 1968 and their partnership with Campus Planning and Environmental Stewardship.

③ Ernest E. Tschannen Eye Institute

The institute opens this winter as UC Davis' new hub for state-of-the-art eye care, research to cure blinding diseases, and training for ophthalmologists and vision scientists. Grateful patient Ernest E. Tschannen, who gave \$18.5 million toward the building, and other key donors celebrated its dedication this fall. The 58,000-square-foot institute will feature improved clinical care and faculty spaces, as well as the new Center for Ocular Regenerative Therapy (CORT) clinic, which is focused on research and care for patients with genetic retinal diseases.

④ Wyatt Deck at the Arboretum

This campus icon has served as a nature-based classroom and host to vibrant community events for more than 50 years; however, decades of use had caused the original redwood boards to deteriorate. Opened in August, the new and improved deck offers an ideal, accessible destination that encourages community connection and will inspire environmental education for future generations. The deck is named after Fred Wyatt, a former UC Davis volunteer, and was funded by the Unger-Yackzan family.

A gift grows on

In 1988, a 90-year-old alumna and former faculty member gave \$648,000 to UC Davis to establish an endowment that would fund plant research fellowships in perpetuity. Still driving discovery today, her gift demonstrates the power of an endowment to benefit the world for generations.

Katherine Esau Ph.D. '31 is widely known as one of the most influential plant biologists and professors in history. Esau's pioneering work on plant anatomy and structure laid the groundwork for much of today's research in the field—and her impact on campus reaches even further.

The Katherine Esau Fellowship program provides funds to postdoctoral researchers, junior faculty members and graduate students. As of 2020, the endowment's market value has increased by almost six times its original amount, standing at \$3.7 million.

Esau's legacy at UC Davis is so profound, this fall the university has rechristened the Sciences Laboratory Building with a new name: Katherine Esau Science Hall.

Meet some of the fellows and the essential work they've contributed. >>>>

BY CLÉMENTINE SICARD



Katherine Esau in 1977



AARON LEICHTY

Principal investigator at USDA Plant Gene Expression Center and adjunct professor in Department of Plant and Microbial Biology at UC Berkeley

2018 Postdoctoral Fellow

^ Crops that survive drought

Ongoing research on acacia plants, which are drought- and desert-adapted by transitioning from horizontal leaves to vertical ones, could be applied to more common crops to help them thrive amidst drought and climate change. The acacia's novel form of leaf development is thought to help with thermo-regulation by allowing the plant's leaves to avoid sunlight during the warmest period of the day.

“The Esau Fellowship program was very beneficial for me as it helped me come to UC Davis and pursue a very niche interest. The research funding was essential because there was no funding for this in labs—it allowed me to go in a novel direction that not everybody is thinking about.”

ZANE MOORE Ph.D. '24, plant biology
2020 Graduate Student Fellow

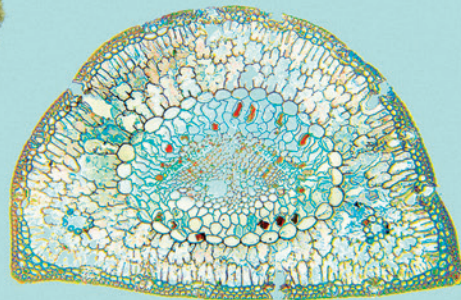
◀ Coast redwood and sequoia mega-genomes sequenced

In 2021, scientists in Professor Emeritus David Neale's lab successfully completed sequencing the coast redwood and giant sequoia genomes. The research helps to better explain the genetic basis for these species' ability to adapt to their changing environments and could help conserve and restore the majestic trees.

A new leaf for redwoods

A 2022 study revealed that redwoods have two types of leaves, one to make food and the other to absorb water. It is the first to estimate whole-crown water absorption in a large, mature tree and could help scientists monitor the ability of trees to adapt to changing climates.

"The Esau Fellowship provided financial support that enabled me to focus on my dissertation and not have to teach for one quarter. I love teaching, but the extra time really allowed me to focus on my research."



PATRICK SHIH
Former assistant professor of
plant biology
2019 Junior Faculty Fellow

^ Missing link in evolution of photo- synthesis and carbon fixation

A 2020 study found a missing link in the evolutionary history of the carbon-fixing protein RuBisCO. The previously unknown form of RuBisCO, found through genome sequencing of environmental samples and synthesized in a lab, dates back 2.4 billion years and could give new insight into plant evolution and breeding. The enzyme is found in all plants and other photosynthesizing organisms. It plays a key role in fixing carbon from the air and has helped shape life on Earth.

SIOBHAN BRADY

Professor of plant biology
2012 Junior Faculty Fellow

∨ Flood-resistant crops

A 2019 study revealed that rice—the only major food crop currently able to survive flooding—shares 68 genes involved in flooding adaptations with tomato plants. In rice, these genes respond to flooding in a way that allows the food crop to thrive. The study might help inform how to breed more flood-resilient plants.

"The first thing I said when I was selected for a faculty interview at UC Davis was, 'I can't believe I've been asked to interview at the home of Katherine Esau'. Everything she accomplished, especially as a woman in biology, is just really inspirational."



Voices for good

The “why” and “how” of giving are different for everyone. UC Davis donors share what makes their support personal.



“My parents couldn’t afford to send me to college, so financial aid was key to my attending UC Davis.

I’m committed to funding scholarships and work opportunities, particularly for first-gen students from underserved communities who face far more difficult obstacles to attend and graduate from university. It’s a way to give back recognizing all that I have learned and benefited from my UCD experience.”

CAROLINE CABIAS '72

UC Davis Foundation trustee
Chicanx Latinx Alumni Association co-chair



“I donate to the School of Education because I believe in

our commitment to ‘eliminating inequities in schooling and creating learning opportunities for diverse learners.’ I give to support our undergraduate and graduate level programs and I also donate to the school’s centers, such as the Transformative Justice in Education Center.”

DARNEL DEGAND

Assistant professor, School of Education



“Mary and I firmly believe that in order to gain a broad perspective in life, it is necessary to experience other parts of the world. The Eivind Lange and Mary Puma Fellowship supports graduate students conducting research in Chile in partnership with UC Davis Chile Life Sciences Innovation Center. We support the university’s vision of ‘global education for all,’ to provide all

UC Davis students with global learning opportunities that change their lives and our world.”

EIVIND LANGE '77, UC Davis Foundation trustee; Global Affairs Advisory Council member



“There is so much to admire about our exceptional School of Veterinary Medicine.

At its core is a deep appreciation for the well-being of all animals. I’m also excited about the One Health approach, which means that the veterinary school makes connections between animal health, human health and the environment. This is incredibly important work with a global impact.”

SUE MAYER '80

UC Davis Foundation chair
Global Campaign Leadership Council chair



“I have been very fortunate to be the recipient of several undergraduate scholarships while pursuing degrees in biochemistry and molec-

ular biology. This has helped me develop a passion for giving back, which is why I joined Aggies Helping Aggies, the student-run philanthropy group on campus. I am excited to assist students like me with their pursuit of education at UC Davis!”

BARRY NGUYEN '23

Aggies Helping Aggies president



“I am a proud Aggie and believe the connection to Davis extends beyond one’s years on campus.

This inspires me to support the alumni association and stay connected. As a Punjabi woman with strong ties to northern California agriculture, I also hope to support causes that benefit both groups.”

ANU JOHL SINGH '04

Vice President/President Elect,
Cal Aggie Alumni Association



“My husband and I fund scholarships for medical students enrolled in the accelerated three-

year program that began in 2014. This program prepares students for residency training in primary care internal medicine or family medicine. Many of the students come from underserved communities and are the first in their family to attend college—and plan to return to practice in their areas after graduation.”

GLENYS KAYE

UC Davis Foundation trustee and
Stewardship Committee chair



Building bigger, together

At UC Davis, grassroots projects engage donors in the story of how smaller gifts can collectively make a huge difference.

BY SIERRA RONNING

Crowdfund UC Davis

“Ewe” can really make a difference by supporting crowdfunding projects like UC Davis Sheepmowers, one of last year’s successful Crowdfund UC Davis campaigns. “I joke that I’ve never had such a positive response to any of my other research projects,” said program director Haven Kiers, an assistant professor of landscape architecture. “Apparently, I just needed the right accessory to promote my work—sheep!”

This and 47 other Crowdfund campaigns in October 2021 and February 2022 saw great success in their fundraising efforts, bringing in \$198,252 in gifts for many campus projects.

Give Day

Give Day is UC Davis’ biggest fundraising event of the year, supporting students, research, programs and services across UC Davis and UC Davis Health. Through 29 hours of primarily online giving on April 22-23, alumni, friends, faculty and staff, students, business and community partners—from 44 states and 14 countries—joined the effort, together raising a record \$4,163,621.

“We are amazed and deeply gratified by the rousing support for UC Davis across the Davis and Sacramento campuses and beyond,” said Shaun B. Keister, vice chancellor for Development and Alumni Relations.

Aggies Helping Aggies

Students find inspiring ways to support each other through the UC Davis Student Foundation, also known as Aggies Helping Aggies.

As one example, the group operates the Student Emergency Relief Aid (SERA) program, which offers quick cash awards for unexpected expenses not covered by other forms of financial assistance. In the 2021-22 academic year, SERA awarded a total \$91,751 to 74 students in need.

“Circumstances caused me to take custody of my younger sister,” SERA recipient Therek Romo Quevedo ’21 shared. “To support both of us, I was going to have to take on a full-time job and drop out of school. Because of SERA, I was able to afford to continue my education and finish my senior year, while providing for my family.”

Employee Giving Month

UC Davis employees continue to make a difference on campus with their gifts. “I give to UC Davis, and to the law students at King Hall specifically, because I appreciate how hard it is for students to finance their education and because our world needs kind, ethical problem-solvers in the legal profession,” said Emily Scivoletto, senior assistant dean for Student Affairs at the School of Law.

Scivoletto and nearly 2,000 employees participated in Employee Giving Month in April by giving \$240,859 to UC Davis, with an average gift of \$122.



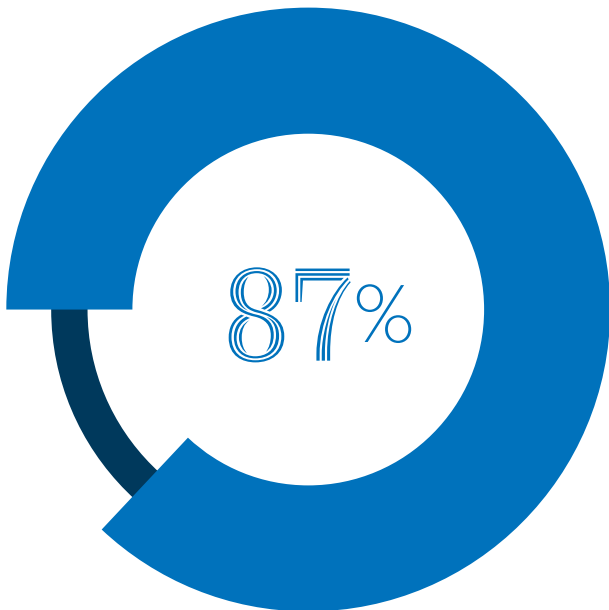
Expect Greater Campaign Progress

AS OF OCTOBER 1, 2022

TOTAL DOLLARS RAISED:

\$1,744,107,155

PROGRESS TO \$2 BILLION GOAL:



TOTAL DONORS:

115,677

NUMBER OF DONORS WHOSE FIRST GIFT TO UC DAVIS WAS MADE DURING THE EXPECT GREATER CAMPAIGN:

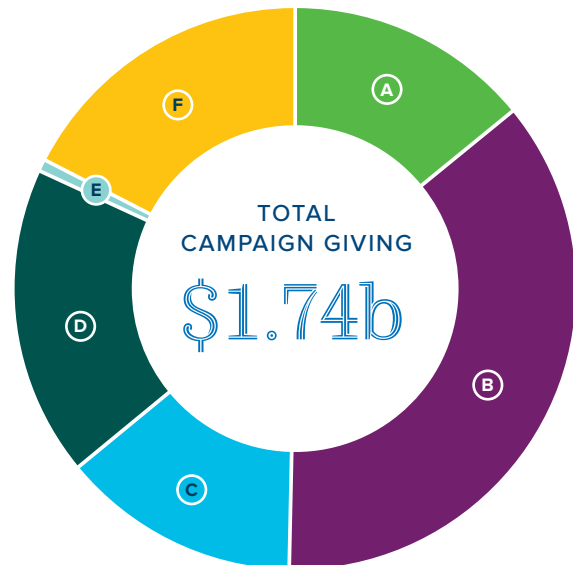
65,402

TOTAL NUMBER OF GIFTS:

349,307

AREAS SUPPORTED BY CAMPAIGN GIFTS:

- A Student support** _____ \$246m
 - B Research** _____ \$632m
 - C Capital projects** _____ \$239m
 - D Department and faculty support** _____ \$311m
 - E Where the need is greatest** _____ \$12m
 - F Other purposes** _____ \$304m
- The university environment, to benefit students, faculty, staff and community



UC DAVIS

Office of Development and
Alumni Relations

One Shields Avenue
Davis, California 95616-5270

Non-Profit Org
US Postage
PAID
Davis, CA
Permit No. 3



Aman Kaur '22, College of Letters and Science, is a first-generation graduate who succeeded with support from the donor-funded Guardian Scholars Program. For more on her journey and other student stories, see page 20.

Expect Greater
From UC Davis. For the World.

Greater future

Partner with us to help advance UC Davis' excellence in teaching, research and public service. Every gift, no matter the size, can make a world of difference.

campaign.ucdavis.edu

MEGAN TAYLOR / UC DAVIS

SPEND OUR \$10K

You read that right. UC Davis Foundation is designating \$10,000 to benefit the university, but hasn't decided where.

That's where you come in.

Scan this QR code and answer a few questions about our magazine for the chance to make a big difference. Where would you give \$10,000 at UC Davis to build a better world?

Read about last year's winner on page 33.



Visit campaign.ucdavis.edu/survey for official contest rules and to complete the *In Greater Focus* magazine online survey.