

UCDAVIS

2018

ANNUAL

REPORT

IMPACT

THROUGH

INTERSECTIONS



UCDAVIS

# INTERSECTIONS



From  
the  
Chancellor

**UC Davis is moving forward** with confidence and commitment to excellence like never before.

We're leveraging our research strengths to advance health worldwide, feed a growing population and weather a changing climate.

We're empowering our students to address the needs and challenges of a diverse and changing world.

We're accelerating our diversity as a university community. We do this not only for the sake of social equity, but also because it is integral to our success. The greater our mix of socioeconomic and ethnic perspectives, the more likely we will make discoveries and solve problems.

We're advancing as an engine of upward mobility. A remarkable 52 percent of our newest transfer students and 41 percent of the freshmen who responded to a survey of their family's educational background said they would be the first generation to earn a four-year degree.

We're building an entrepreneurial culture that extends more of the benefits of our innovations to the Sacramento region.

We're partnering more than ever with public and private companies to make breakthroughs in critical issues faced by the world. UC Davis set a record in 2018 with \$846.7 million in research funding, a \$64 million increase from the previous year.

Donors are also stepping up in great numbers to support scholarships, new facilities and much more through philanthropy. In the 2017–18 fiscal year, UC Davis raised more than \$230 million from 36,645 donors, which marked an 8.37 percent increase in the number of total gifts over the previous fiscal year.

UC Davis is on course to become one of the handful of institutions on the tip of the tongue when you talk about the nation's great public research universities.

In this report, you will see that we are not far from that now.

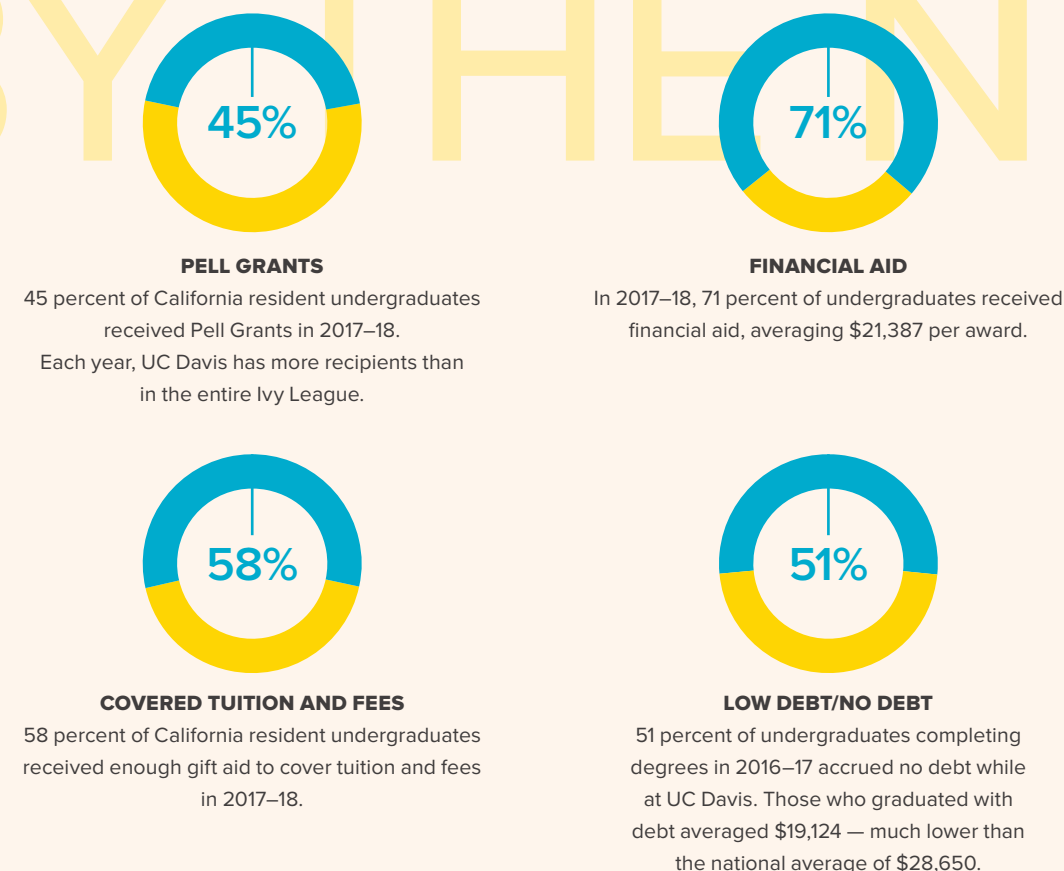
A handwritten signature in blue ink that reads "Gary S. May".

Gary S. May  
Chancellor

# Rankings



## Financial Aid



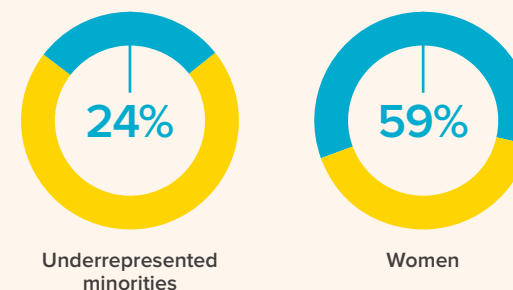
## Campus Populations

### Students (FALL 2018)

**GRADE POINT AVERAGE**  
**4.03** (Enrolled freshmen)

**HEAD COUNT**  
 30,718 Undergraduate  
 4,687 Graduate  
 1,582 Professional  
 1,180 Health science  
 985 Medical interns and residents  
**39,152** Total student population

### DEMOGRAPHICS



### Staff (FALL 2017)

**FULL-TIME STAFF**  
 8,312 Staff  
 7,468 Clinical staff  
**STUDENT EMPLOYEES**  
 9,963  
**25,743** Total staff

### Faculty

**4,297** Faculty and other academic positions

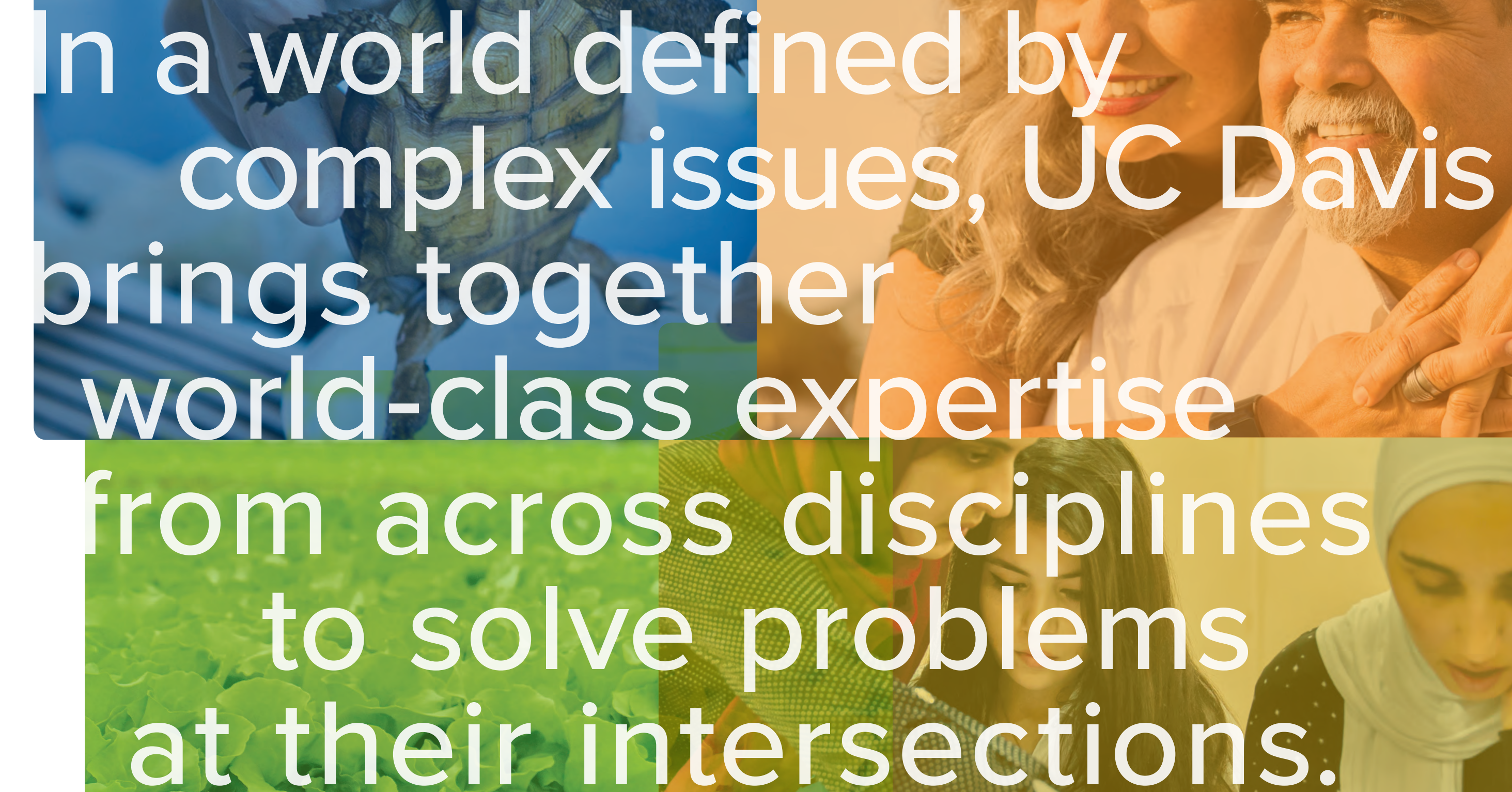
### Alumni (FALL 2017)

**260,000+** Living alumni with degrees

### Degrees (Awarded 2017–18)

8,802 Bachelor's  
 2,168 Graduate and professional  
**10,970** Total degrees awarded





In a world defined by  
complex issues, UC Davis  
brings together  
world-class expertise  
from across disciplines  
to solve problems  
at their intersections.



Professor Brian Todd, in the Department of Wildlife, Fish and Conservation Biology, weighs a baby desert tortoise at the Mojave National Preserve.

# SCIENCE AND CLIMATE

## WILDLIFE AND SOLAR

Endangered species like the desert tortoise could be affected when large-scale solar installations are introduced into pristine desert habitats. UC Davis scientists are closely monitoring the health and populations of the desert tortoise and numerous other desert fauna to ensure that they can coexist with these clean-energy-producing facilities.



Since January 2018, researchers at the Air Quality Research Center and Environmental Health Sciences Center have been testing Sonoma County ash and air for new pollutants and surveying residents on the health effects of last year's fires.



As the ocean warms, fish migrate to cooler water. But in Antarctica, there is nowhere colder to go. UC Davis animal scientists have found that polar species can acclimate to warm water or to higher levels of carbon dioxide, but not to both.



Scientists at the Department of Land, Air and Water Resources found that more than a quarter of the Earth's nitrogen comes from bedrock rather than only from the atmosphere—which could improve climate change projections.



Work by animal scientist Ermias Kebreab and colleagues suggests seaweed might be the food we need to reduce the amount of methane that dairy cows produce and thereby cut greenhouse gas emissions.



Researchers in the Department of Wildlife, Fish and Conservation Biology found that restoration of Putah Creek Riparian Reserve more than doubled the bird population.



Aquaculture specialist Jackson Gross is photographed in the 24,000-square-foot greenhouse at Tsar Nicoulai Caviar farm. Gross advises the farm on issues ranging from fish reproduction to wastewater management.

# FEEDING A GROWING POPULATION

## FISH FARM FIRST

UC Davis aquaculture experts worked with Graduate School of Management alumnus Ali Bolourchi and colleagues on the world's first caviar farm that uses fish waste to grow vegetables in an aquaponics system. The closed-loop system allows nutrient-rich water to be taken up by vegetables floating on rafts, recycling 80 percent of water used.



UC Davis researchers have identified a gene that enables resistance to a new devastating strain of stem rust, a fungal disease that hampers wheat production throughout Africa and Asia and threatens food security worldwide.



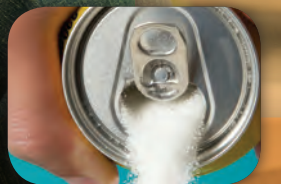
Crop fertilizer production incurs up to 2 percent of global energy use. Corn discovered in Mexico has a unique aerial root system (image) allowing it to fix nitrogen from the air. If researchers can breed this trait into commercial corn, fertilizer use for this widespread crop could be reduced.



The World Food Center, relaunched within the College of Agricultural and Environmental Sciences, will promote innovative and equitable food systems.



Biochemist Walter Leal and a team of Brazilian and U.S. researchers discovered a pheromone that could trap the insect that carries citrus greening disease, one of the most devastating plant diseases in the world.



Nutrition researchers found that not all calories are equal in causing weight gain and disease. Sugared beverages, for example, increase cardiometabolic risk compared with equal amounts of starch.



# ADVANCING HEALTH WORLDWIDE

UC Davis Health research includes clinical, translational and basic science studies, with an emphasis on collaboration and improving health for individuals, communities and populations.

## A HISTORIC COGNITION STUDY

Latinx/Chicanx are the fastest growing minorities in the country's aging population. The UC Davis Alzheimer's Disease Center is leading the largest-ever study of Latinx/Chicanx with cognitive impairment who live in the United States — a significant public health concern. Funded by the National Institutes of Health, the study includes a team of researchers across 10 universities.



Three UC Davis researchers joined the Black Child Legacy Campaign, which aims to reduce Sacramento's African American child mortality through a system of support, advocacy and policy reforms.



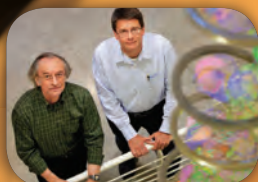
A UC Davis Center for Mind and Brain study showed that the cognitive benefits of intensive meditation training can last for up to seven years.



UC Davis biomedical engineers developed a new technique using light to measure blood flow in the brain. The approach — based on conventional digital camera technology — could be a game changer in patients with stroke or traumatic brain injury.



The Family Caregiving Institute at the Betty Irene Moore School of Nursing brought together more than 50 experts worldwide to map out multicultural research priorities aimed at supporting the more than 50 million people who care for others.



Researchers in the College of Biological Sciences are working to change the future of cancer therapies, with customized treatments based on the patients' genetic profiles.



Jamie Peyton, chief of the Integrative Medicine Service at the UC Davis Veterinary Medical Teaching Hospital, fits a biologic bandage made of tilapia skin over the burned pads of a mountain lion cub.



A recent census of habituated mountain gorillas in east-central Africa shows that Gorilla Doctors — a program led by the Karen C. Drayer Wildlife Health Center in the One Health Institute — is working; veterinary care is playing a major role in recovery of the mountain gorilla population.



The One Health Institute and international partners initiated the Global Virome Project to characterize almost all of the world's unknown viruses and halt the spread of pandemics. In August, researchers announced the identification of a new ebola virus in free-tailed bats in Sierra Leone — strong evidence that they host these viruses. (Photo: @ Jakob Fahr)



Researchers from the California National Primate Research Center on campus found that the hormone vasopressin is a possible biomarker for social deficits in autism. They found low levels of vasopressin in both children and monkeys with “low social” behavior and are continuing to expand the study.



Ben Waldau, a vascular neurosurgeon at UC Davis Medical Center, created the first stem cell-derived mini-brains with blood vessels. The team's goal is to repair a patient's damaged brain with the patient's own cells.



Biochemist Gino Cortopassi showed that antimicrobial agents in common household products can inhibit mitochondrial energy production, opening the door to increased risk for Parkinson's disease.

## FISH SKIN BANDAGE

Veterinarian and Integrative Medicine Service chief Jamie Peyton is driven to help animals even when it seems impossible. While treating animals injured in the Thomas Fire, she crafted fish skins as bandages, successfully providing pain relief and encouraging healing. It was the first time the technique had been applied to non-human patients. Peyton later traveled to England to help heal a pony's acid burns with the same treatment.

# ADVANCING HEALTH WORLDWIDE

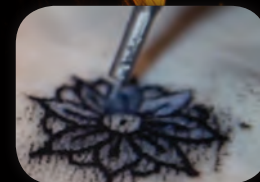


Left to right:  
Badriyeh Mohamad  
Diab helps Aicha  
Mohammad Harrosh  
and Aya Samir  
Mouhammad  
register for the  
Article 26 Backpack  
in Tripoli, Lebanon.

# DRIVEN BY INNOVATION

## AN INFORMATION LIFELINE FOR UNCERTAIN TIMES

Refugees and other vulnerable young people face huge barriers to education and employment. UC Davis partnered with the American Association of Collegiate Registrars and Admissions Officers and American University in Beirut to develop Article 26 Backpack, a universal human rights tool used to store and share critical documentation. Led by Professor of Human Rights Studies Keith David Watenpaugh in collaboration with Global Affairs, the initiative launched in Lebanon and will expand throughout the Middle East and Western Hemisphere.



Assistant design professor Katia Vega led a biotechnology project that won the Interactive Innovation Award at the South by Southwest Conference in Austin, Texas. Innovative tattoo inks have bio-sensors that can help monitor illness or flag health problems.



Music, art and religious studies faculty members Mika Pelo, Annabeth Rosen and Archana Venkatesan received Guggenheim Fellowships honoring their creative innovation.



Anthropology professor Jelmer Eerkens learned of the discovery of a little girl's remains in a forgotten casket and eagerly helped unravel the mystery. Working with more than 30 specialists, Eerkens identified the child — and unlocked a family's history.



Historian Gregory Downs received the 2018 UC Davis Academic Senate's Distinguished Scholarly Public Service Award after four years of work to establish the nation's first monument to Reconstruction.



Psychology professor Charan Ranganath published landmark findings that the brain prioritizes rewarding memories over others, and the memories the brain ultimately selects are the ones most useful for future decision-making.



# Highlights of the year





Chancellor Gary S. May  
at an Aggie Square  
press conference on  
April 12, 2018. Leaders  
also have announced  
plans for a new rehabili-  
tation hospital.

# INNOVATION FOR THE COMMUNITY GOOD

As part of the university’s new strategic plan, Chancellor Gary S. May worked with regional leaders to launch Aggie Square — an innovation hub on the Sacramento campus that harnesses the power of the entire university and its partners to create jobs and businesses in Sacramento and beyond. The entrepreneurial partnerships we forge will advance human health, enrich lifelong learning, enhance emerging technologies and inspire future collaborations.



AGGIESQUARE

# A BOLD DIRECTION FOR UC DAVIS



In line with his student engagement mission, Chancellor May launched the UC Davis Leadership Job Shadow Program, partnering students with senior campus leaders for a full workday.



Chancellor May’s Colloquium series hosts speakers who challenge the way we see the world. Actor Alan Alda showed how scientists can better engage the public. Rapper GZA spoke about using hip-hop in science education. Author Matthew Desmond enlightened audiences on the role eviction plays in perpetuating racial and economic inequality.



A new Leading and Breaking Barriers speaker series featured diverse speakers and stories of STEM innovation, aiming to inspire students to rethink stereotypes about who should participate in research and academia. Chancellor May and his wife, LeShelle, gave the inaugural presentation.



UC Davis took its Big Ideas fundraising initiative on the road, showcasing game-changing programs that will build on the university’s interdisciplinary strengths to make the world a better place. They include ideas in sustainability, food, water, global education, animal and human health and more.





# DIVERSITY AND INCLUSION

## MANDELA CELEBRATION

UC Davis welcomed 25 fellows from 17 countries for a Public Management Institute as a part of the Mandela Washington Fellowship, the flagship program of the national Young African Leaders Initiative. Global Affairs teamed with the city of Davis in July to host a community celebration with the fellows on what would have been former South African President Nelson Mandela's 100th birthday.

Sandy Holman (in purple), founder of The Culture C.O.-O.P. and member of the UC Davis Center for Regional Change's Regional advisory committee, leads a ceremony during the Mandela Day Celebration with Tometi Gbedema (seated), project policy analyst in human and community development, and some of the UC Davis Mandela Washington Fellows.



UC Davis qualified to become one of only 15 major universities in the nation with Hispanic Serving Institution status. This federal government designation opens the door to significant funds to support students' academic success.



School of Law experts weighed in on the immigration debate with media. Dean Kevin Johnson wrote about deficiencies and inequities in President Trump's immigration plan, and associate vice chancellor for Academic Diversity Raquel Aldana (image) explored so-called chain migration myths.



More than 100 students from diverse disciplines and backgrounds participated in the Arboretum and Public Garden's Learning by Leading program, educating visitors and youth on sustaining the biodiversity of campus landscapes.



The First-Generation Faculty Initiative fosters mentorship and resource sharing between 400 faculty members who were the first in their families to earn a four-year degree and 40 percent of our undergraduates who will be the first in theirs.



# THE STUDENT EXPERIENCE

## TOP GRADUATE: ALL HEART

Emily Eijansantos received the University Medal, UC Davis' top award for graduating seniors. The award honors excellence in undergraduate studies, outstanding community service and the promise of future scholarship and contributions to society. Eijansantos, a University Honors Program graduate, majored in neurobiology, physiology and behavior and researched the effects of ibuprofen on heart cells. She was also a devoted volunteer at UC Davis Hospice and the Connected Clinic for women with postpartum depression.

University Medalist Emily Eijansantos of Livermore, California practices wushu martial arts. The 2018 neurobiology, physiology and behavior graduate conducted, presented and co-authored research and is pursuing a medical career.



In new Course-Based Undergraduate Research Experience seminars, offered by the First-Year Seminars program, first-year undergraduates dive into research with faculty mentors in small classes. They have investigated schizophrenia-linked genes, science education, the nectar microbiome and more.



A dozen English majors tested an augmented reality video game's ability to improve elementary school students' learning. The "Play the Knave" game was developed by English professor Gina Bloom and others in the UC Davis ModLab.



Chancellor May appointed task forces in early 2018 to address three basic student needs: affordable housing, food security and mental health care. The university has already responded to many of their recommendations — from initiating several housing projects to ensuring that food security programs have stable annual funding — and has set a timeline for addressing the others.



A new Study Abroad seminar program in Global Affairs virtually connected students and faculty from UC Davis and Nepalese universities for a quarter before the Davis cohort journeyed to Nepal over winter break. There, they implemented community, technology and sustainability projects with Nepalese university and community partners.



Bioengineers Simon Cherry (near right) and Ramsey Badawi peer into the world's first full-body PET scanner. The revolutionary device was built by a multi-disciplinary team that they led.

# RESEARCH AND INNOVATION

## WORLD'S FIRST TOTAL-BODY SCANS

EXPLORER, the world's first positron emission tomography (PET) scanner that can capture a 3D picture of the entire human body at once, produced its first scans in November 2018.

The brainchild of UC Davis scientists Simon Cherry and Ramsey Badawi, EXPLORER can produce an image in as little as one second and could have countless applications like improving diagnostics, tracking disease progression and researching new drug therapies.



A \$2.2 million investment from State Assembly Bill 2664 is propelling innovation and entrepreneurship across the university — advancing more than 50 technologies, assisting 66 startups and training more than 950 entrepreneurs.



Professor Sarah Stewart proposed a new theory on the formation of the moon. It emerged from a synestia, a giant, spinning donut of vaporized rock produced when a planet-sized object collided with the Earth.



Distinguished professor Harris Lewin is chairing the Earth BioGenome Project, an initiative that could transform scientific understanding of life on Earth by sequencing the DNA of all known species with cells that contain a nucleus.



Two undergraduates won first prize in the 18th annual UC Davis Big Bang! Business Competition. Their venture, Japa Inc., saves time and hassle with an app that provides real-time parking availability.



Recent startup innovations include developing solutions to restore a newborn baby's gut microbiome (Evolve BioSystems, Inc.) and creating video games that act as "digital medicine" to treat cognitive impairments (Cognivive, Inc., avatar from game is pictured).



# PHILANTHROPY

## DONORS INSPIRED TO MAKE A DIFFERENCE

Thanks to our generous supporters, UC Davis raised more than \$230 million from 36,645 donors and saw an 8.37 percent increase in the number of total gifts given over the previous fiscal year. Many colleges, schools and units saw record-breaking years, including the College of Biological Sciences, School of Law, School of Education, Library, Athletics, UC Davis Health, and Annual and Special Gifts. UC Davis also enjoyed many benefits of philanthropy this year, such as the opening of Betty Irene Moore Hall and a renovation of LaRue Field for the Aggie softball team.

The UC Davis Foundation's "by philanthropy" initiative used blue bows to showcase how donations have touched thousands of aspects of everyday life at UC Davis, such as inspiring new thinking through transformational art experiences at the Manetti Shrem Museum of Art.



The Azrieli Foundation presented a \$2.3 million gift to the UC Davis MIND Institute, making up the single largest gift in the institute's 20-year history and helping to further innovation around fragile X disorders.



In a plan called "Leading the Way," UC Davis announced its intention to raise \$115 million in philanthropic support for the first of three phases to transform the UC Davis Veterinary Center. Phase I focuses on the Livestock and Field Service Center, the Equine Performance Center and the All-Species Imaging Center.



The Winiarski Family Foundation presented the UC Davis Library with a gift of \$3.3 million to help build the world's most comprehensive collection on wine writers.



UC Davis' second annual Give Day raised \$1.8 million from 4,866 gifts. To encourage participation in the event, UC Davis Give Day featured 110 donor challenges across the university.



UC Davis celebrates a 23-16 victory in the program's first FCS playoff game, which took place at Aggie Stadium on Dec. 1, 2018.

## BANNER FOOTBALL YEAR

A 10-3 record, Big Sky Conference title, the program's first berth in the NCAA Football Championship Subdivision playoffs and national coach of the year honors for Dan Hawkins highlighted the 100th season of UC Davis football. Additionally, receiver Keelan Doss earned All-America honors for the second straight year, quarterback Jake Maier garnered Big Sky Offensive Player of the Year honors, while two Aggies — defensive backs Ryan Parenteau and Tiger Garcia — were selected to the 2018 Google Cloud Academic All-America team.

# ATHLETICS



UC Davis became the first school since 2008 to capture the Big West Conference regular-season championship in both men's and women's basketball. With 50 victories — 28 by the women and 22 by the men — Aggie basketball claimed the most wins by a Big West institution since 1991.



The NCAA recognized Aggie field hockey, softball, men's and women's golf, men's and women's tennis and women's basketball for scoring in the top 10 percent in their multiyear Academic Progress Rates.



UC Davis now sponsors 16 women's athletics teams, after the addition of beach volleyball and equestrian announced in 2018. Go Ags!



Erinn Beattie capped her 2018 track and field season with a second-place tie in the women's high jump — UC Davis' best ever Division I finish — and was the first Aggie to pass the 6-foot threshold in the event.



Our top 10 men's water polo team clutched a win over 12th-ranked UC San Diego to secure back-to-back Western Water Polo Association championships, plus an automatic berth in the NCAA Championship.



UC Davis admitted about 41,950 freshman and transfer applicants for fall 2018, with gains among California residents, underrepresented minorities and first-generation students.

# COMMUNITY

## INTERCULTURAL CONVERSATION

The PAL program links students from different countries and cultural backgrounds to engage in dialogue and intercultural exchange. At the recommendation of student leadership, the program was expanded this year to include more social events, study halls and intercultural skills development.



As part of the Long Range Development Plan, the university launched its most aggressive student-housing program yet: to house an additional 12,000 students on campus. Plans include a new dining hall and 2 million square feet of academic and administrative space.



Collaborators across campus launched a digital pre-orientation program to deliver essential information to students before they arrive, freeing up time at orientation for academic advising, course selection and relationship building.



The new Aggie Compass Basic Needs Center eases student access to resources for food, housing and other basic needs. The center also has a full-time CalFresh representative on site to help students with enrollment.



UC Davis implemented Aggies Act, a medical amnesty protocol that removes barriers to seeking help in potentially life-threatening situations involving alcohol and other substances — and encourages shared responsibility among students.



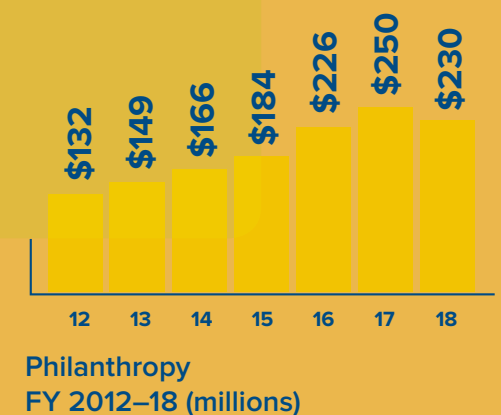
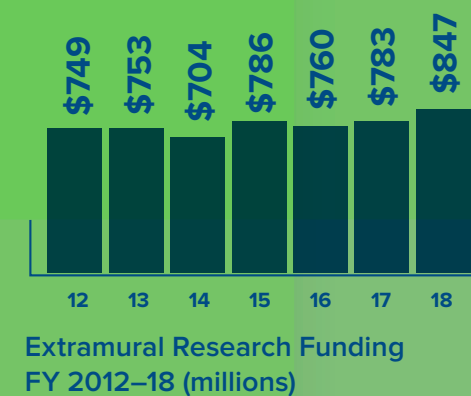
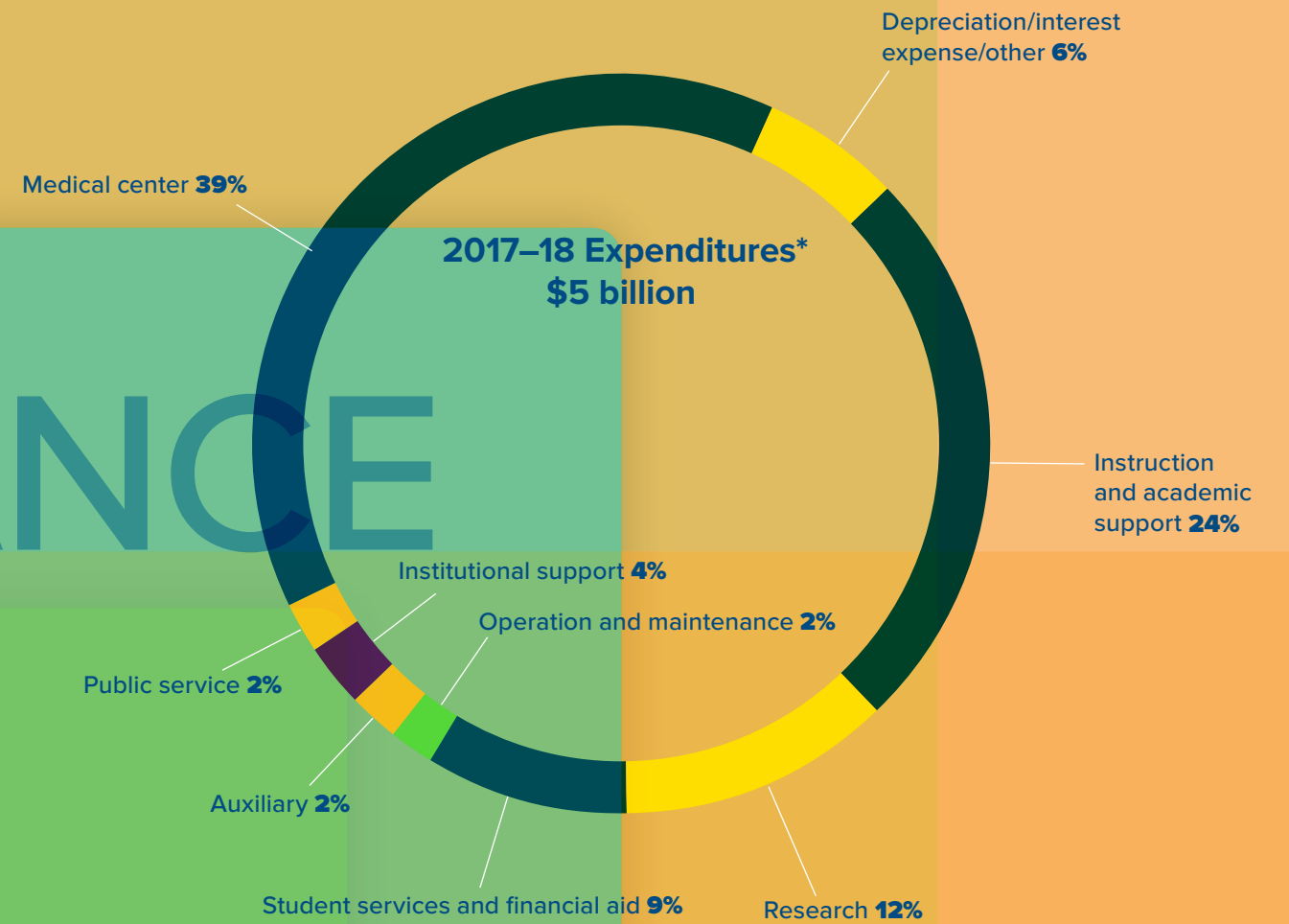
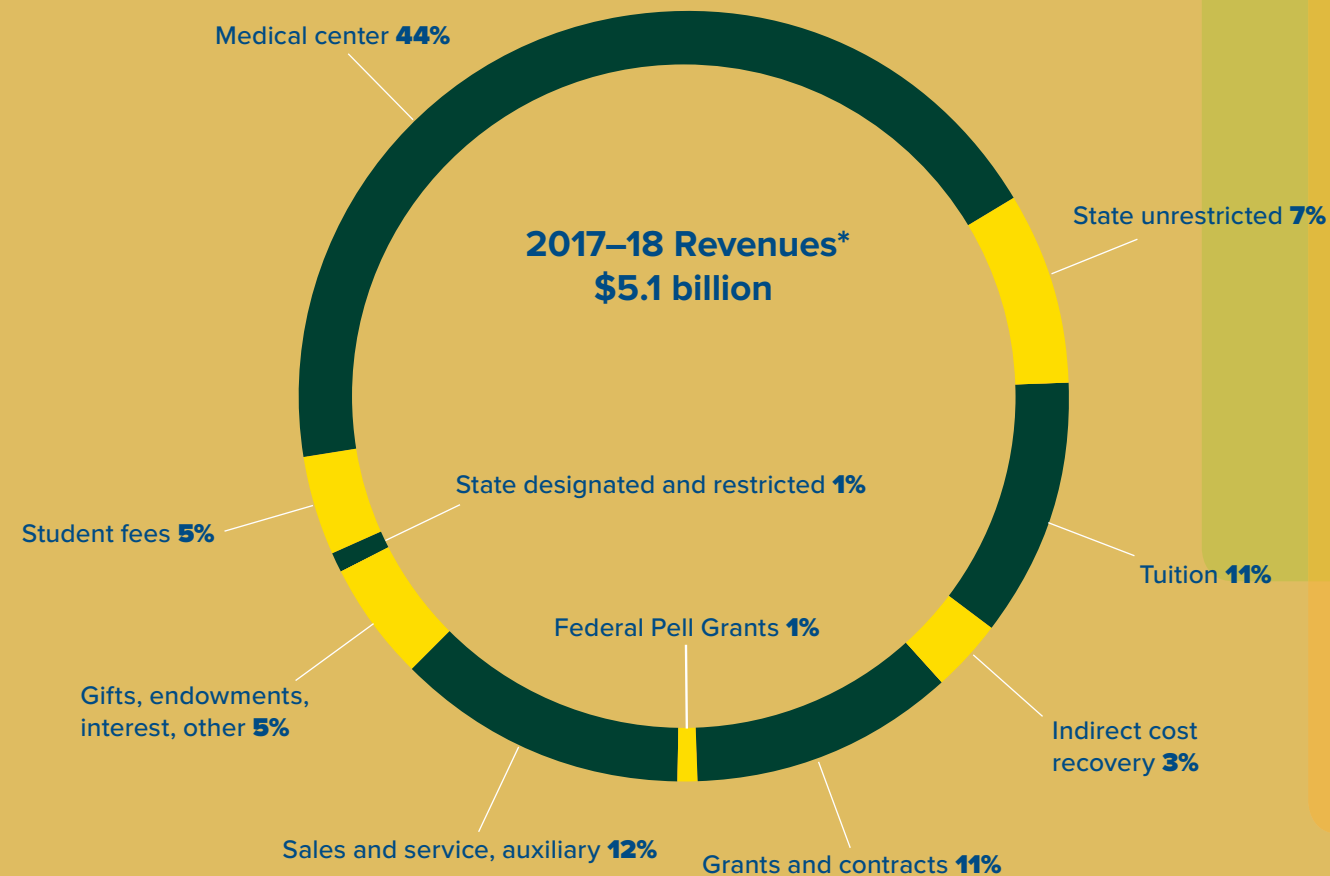
The Office of Student Support and Judicial Affairs is dedicated to student wellbeing. For example, assistant director Jennifer Chow provided much-needed family services and support in cases involving deaths of international students.



# FINANCIALS AT A GLANCE

## 2017–18 REVENUES AND EXPENDITURES

UC Davis revenues come from many sources. About 82 percent are earmarked for specific purposes, such as research support, housing and UC Davis Medical Center. Most funding for teaching comes from unrestricted state funds and student tuition.



\* Scholarship allowance is reported as an expenditure in student services and financial aid.



# 2018 ANNUAL REPORT



## UC DAVIS

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