

University of California Accountability Framework

As a public entity, the University is accountable to the people of California and it must and it shall remain accountable to them for its actions, past and present, and for its future development. Accountability will be demonstrated:

- By the transparency of the decision-making processes that govern the University and its campuses, medical centers, and laboratories
- By the manner in which key performance indicators are disclosed to and discussed with the broader public



The Annual Accountability Report is produced by the Institutional Research and Academic Planning Unit at the University of California Office of the President. We gratefully acknowledge the assistance provided by numerous departments and individuals both at the Office of the President and at UC campuses.

www.universityofcalifornia.edu/accountability

Contact: accountability@ucop.edu

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EXECUTIVE SUMMARY

UC Accountability Report

Celebrating 150 years of being boldly Californian.



UC ACCOUNTABILITY REPORT 2018 EXECUTIVE SUMMARY

The University of California celebrates its 150th anniversary this year. This milestone is an opportunity to reflect on UC's rise from a small institution serving just 40 students in 1868 to its status today as one of the world's great public research universities.

For this sesquicentennial edition of the Accountability Report, the original seal of the University, designed in 1884, and UC's motto, can be seen not just as an inspiration for the mission of the University, but also as a metaphor for accountability: Let there be light.



The 2018 Accountability Report provides a unique lens for tracking that story through data. It shows where UC has been —and more importantly — the opportunities and challenges that lie ahead. As such, this year's report highlights select points in UC's history and the key indicators and trends that illuminate the status of UC operations for future reference.

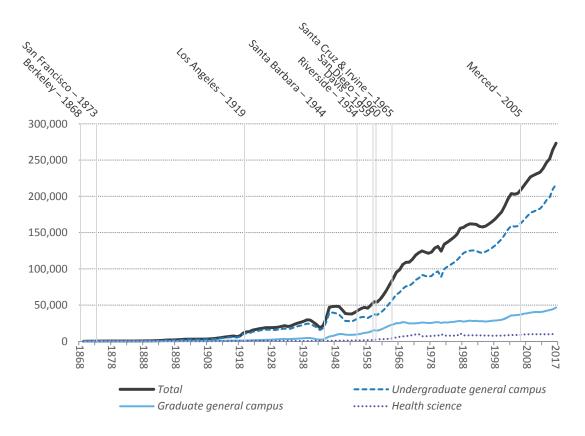
A partnership to create the University of California

The story of UC is of a productive partnership between California and the University, one that illustrates how investments made by the state and its citizens produce outsized returns. It begins with Henry Durant who founded the College of California in Oakland. Durant donated land and the state provided funding to create UC, which moved to Berkeley in 1868. Lawmakers believed that their young state needed an educated populace to thrive, and so UC opened its doors to all, without regard to student income or background. That egalitarian spirit continues to this day.

Other UC campuses soon followed Berkeley. Hugh Toland established the Toland Medical School which in 1873 affiliated with the University of California and formed what later became UC San Francisco. UCLA and UC Santa Barbara began as teaching colleges that later converted to UC campuses.

In 1949 Governor Earl Warren signed legislation to authorize both UC Riverside, which started in 1907 as the UC Citrus Experiment Station, and UC Davis, which opened its doors in 1905 as the University Farm. Under Governor Pat Brown's leadership in the 1960's, UC Santa Cruz, UC San Diego (which included the Scripps Institution) and UC Irvine opened to help California accommodate a huge surge in college-bound baby boomers. UC Merced opened in 2005, becoming the first 21st century American academic research university.





California's investment in UC allowed the University to advance the state and its economy by:

- Attracting dollars and talent into the state
- Providing research to support existing industries and launch new ones
- Developing expertise and solutions for major public challenges
- Supplying most of the state's advanced degrees including for key workforce areas
- Creating economic mobility for very large numbers of low-income students
- Serving public interest needs in education, health care, the environment and other major service areas

Today, the University has over two million living alumni, operates California's fourth largest health care delivery system and serves as the third largest employer in the state.

A partnership to hire leading faculty to advance research

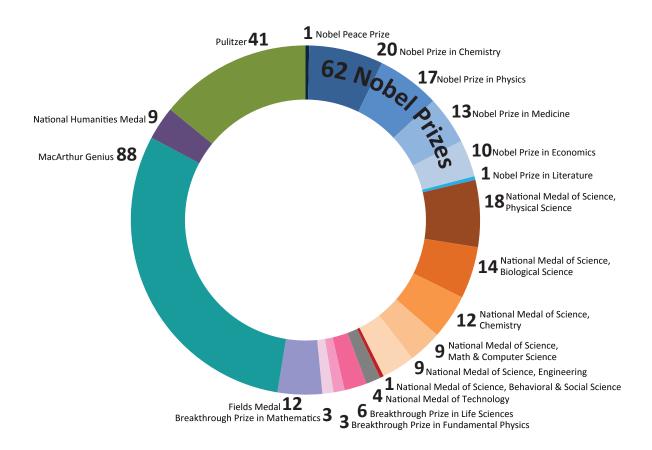
Under the California Master Plan for Higher Education, adopted in 1960, the state designated UC as the research arm of the state. The University's already strong research enterprise was further accelerated by state investments in faculty hiring, allowing the University to attract top-tier researchers. Today UC's research prowess is reflected in the numerous honors and awards earned by faculty, along with its ability to attract an outsized share of research funding. UC is the nation's pre-eminent academic research system, performing nearly one-tenth of the nation's academic research (9.2.2).

UC research is not limited to its ten campuses but spans the state including two National Energy Laboratories (one located outside California), five UC academic medical centers, and 39 natural reserves.

This investment has paid off: starting in the late 1800s, UC soil scientist Eugene Hilgard showed farmers how to remove salts from the alkali soils of the Central Valley, turning what was once barren land into one of the world's most productive farming regions. He also helped California establish its wine industry. Today, UC's Agriculture and Natural Resources Division brings the power of UC research and education to agricultural communities across California (10.1.1).

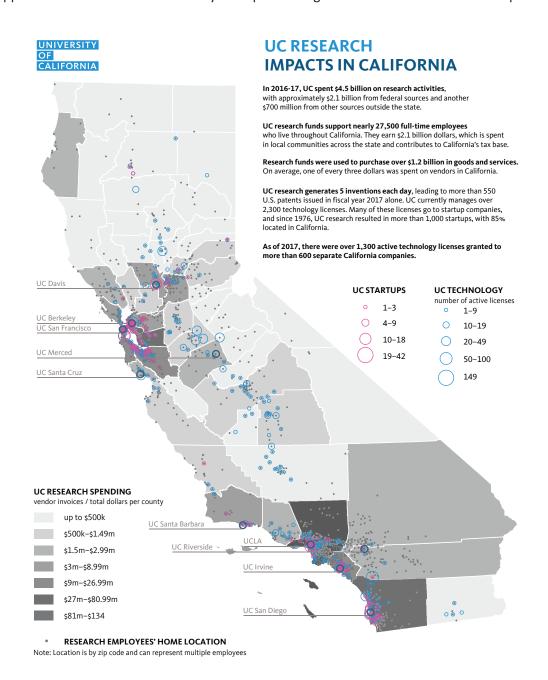
UC faculty receive many prestigious awards as leaders in their fields.

Faculty Honors and Awards (13.1.2)



UC discoveries advance industries including health care biotechnology, information technology and clean energy. UC research yielded discoveries of vitamins E and K; vaccines for flu, hepatitis B and polio prevention; and new treatments for cancer, AIDS, Alzheimer's and autism. UC surgeons performed California's first heart transplant. UC medical centers currently conduct half of all organ transplants in California and treat one-quarter of extensive burn care cases in the state. Clinics run by UC Health have more than 750,000 outpatient visits a year. Nearly 60 percent of UC Health patients have Medicare or Medi-Cal, or have no insurance at all. (Chapter 11).

The University of California spends \$4.5 billion on research, and the majority of these funds come from outside California (9.1.1). These funds create jobs and are spent on goods and services across the state that support research. UC research activity also spurs strong economic hubs around UC campuses.

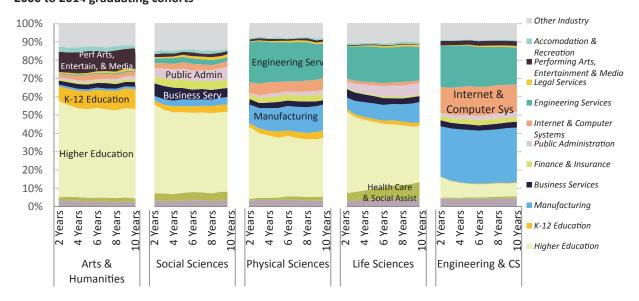


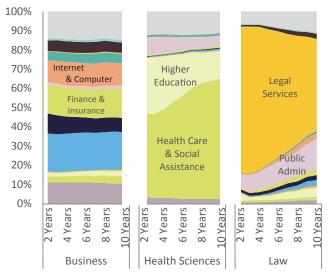
A partnership to advance graduate education to produce future researchers and promote industry needs

Under the California Master Plan for Higher Education, UC has exclusive authority within California's public higher education partners to grant doctoral degrees (with a few exceptions) and to offer instruction in law, medicine, dentistry and veterinary medicine. Half of UC's Ph.D. and academic master's degree graduates are ultimately employed in higher education – 25 percent of UC tenure and tenure-track faculty, and 21 percent of current California State University tenure and tenure-track faculty earned their doctorate from UC. Under UC faculty supervision, graduate students in academic programs create an average of almost 600 new inventions a year. Every two weeks, a startup is formed based on an invention created by a UC graduate student.

Half of UC Ph.D. & master's graduates who stay in California work in higher education.

Industry of employment of UC graduate academic (top graph) and graduate professional (bottom graph) students in CA, by year after graduation (4.3.6 and 4.4.2) 2000 to 2014 graduating cohorts





UC professional degree students go on to become business leaders, lawyers, and health care professionals. Nearly 15,000 students are enrolled in UC's health science and residency programs, producing the next generation of caregivers for a state that will increasingly need greater numbers of health care professionals. Looking ahead at the state's workforce needs, UC graduate students will play a key role in creating jobs and supporting industries that keep California strong.

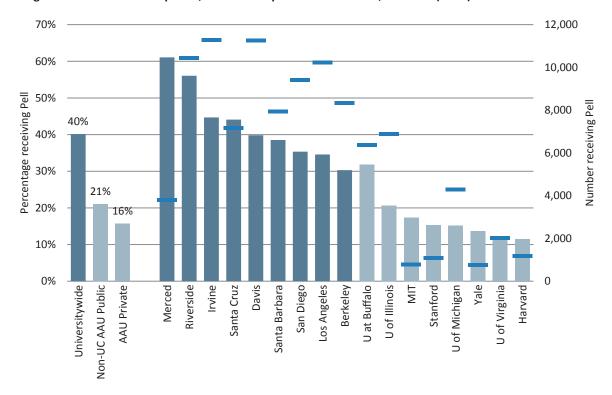
Source: California Employment Development Department and UC Corporate Student System

A partnership to advance undergraduate opportunities, particularly the economic mobility of low-income students

In partnership with the state, UC has been particularly active in making undergraduate degrees affordable for low-income students. Between the Cal Grant program (state funded financial aid) and UC's Blue and Gold financial aid program, 56 percent of UC undergraduates pay no tuition. Many also get help for non-tuition costs, i.e., housing, books, transportation and other costs. The University of California provides unprecedented access to Pell Grant recipients, particularly when compared to other Association of American University (AAU) public and private peer institutions.

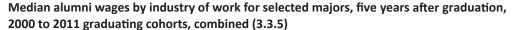
UC enrolls a higher percentage of Pell Grant recipients than any other top research university in the country.

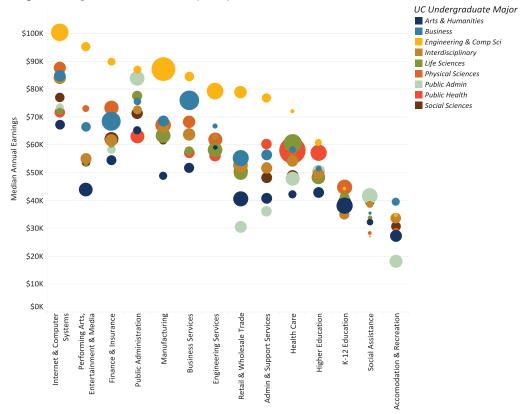




While there is a graduation rate gap at year four between UC's Pell Grant and non-Pell recipients, the two groups have comparable graduation rates at year six. Within five years of graduation 77 percent of low-income students earn more than their parents, reinforcing the New York Times' characterization of UC as "California's upward mobility machine."

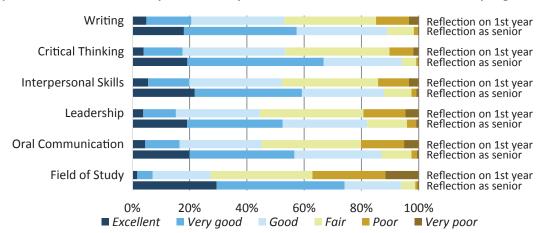
Engineering and computer science majors tend to earn more than other UC undergraduate alumni, but how much UC alumni make also depends on the industry of employment.





UC undergraduate degree recipients report significant growth in the skills that employers seek, demonstrating UC's skill at preparing students for future careers. The National Association of Colleges and Employers cite the key attributes that employers seek: leadership, ability to work in a team, written communication skills, problem-solving skills, and verbal communication skills. Respondents to the UC Undergraduate Experience Survey (UCUES) cite significant positive gains in these areas, along with growth in their field of study.

Self-reported skill levels from first year to senior year for seniors who entered as freshmen, Spring 2016 (8.1.1)



As UC expands access to undergraduate education for low-income students, the University must also expand access to graduate education for these students. Almost 40 percent of UC undergraduates go on to graduate school, with African-American students doing so at an even higher rate. This trend is strong in key disciplines. Many go on to earn professional graduate degrees - business majors earn MBAs, Arts & Humanities and Social Science graduates earn law degrees. Many low-income students also go on to earn academic graduate degrees. UC is proud to note that its more diverse campuses – Merced, Riverside, and San Diego – are feeder schools to UC academic doctoral programs. Around 70 percent of UC Merced students who go on to get a Ph.D. do so at a UC campus.

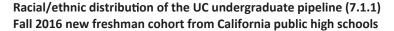
A future partnership to help UC meet California's needs

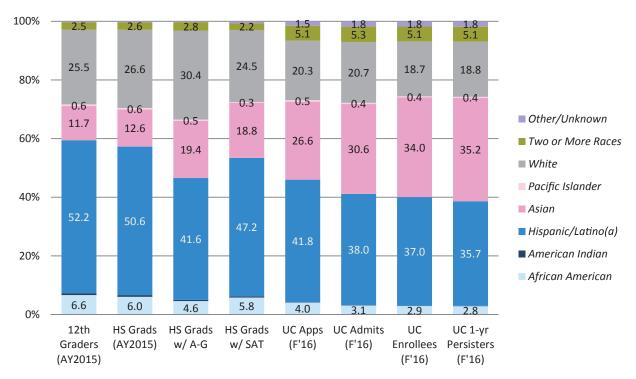
As California grapples with present and future challenges, the University of California continues to be a major partner in the state's successes and strengths. UC's faculty, research enterprise and graduate students provide hope for future economic development and meaningful discoveries. For example, this year's UC Grad Slam winner, Joseph Charbonnet of UC Berkeley, shown here, is studying a novel way to collect and clean stormwater to help the state address drought.



Over the next twenty years, the number of California baby boomers who are retiring will grow significantly, reducing the number of college educated workers in the state. UC's internal projections are that the number of high school graduates will continue to grow, in part due to increasing high school graduation rates for Hispanic/Latino(a) students. UC has identified areas for improvement across the undergraduate degree pipeline, particularly improving the number of California high school students who complete their A-G coursework, which could boost college-going rates.

UC is not keeping pace with the ethnic diversity of California high school graduates, primarily due to differences in A-G course completion.





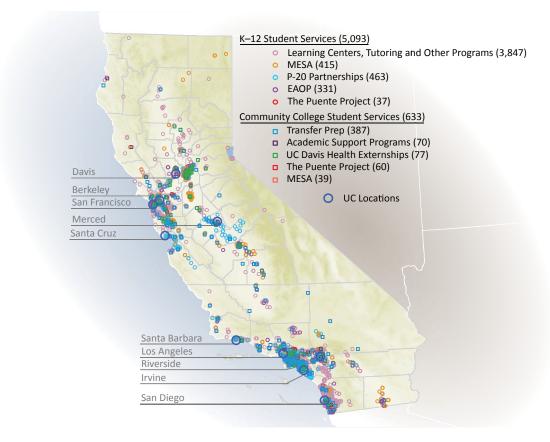
Sources: California Department of Education; College Board; UC Information Center Data Warehouse

UC is continuing its efforts to improve the transfer process, including the Academic Senate Transfer Pathways Project that led to a common set of lower-division course requirements for each of UC's top 21 most popular majors among transfer applicants. UC is getting close to achieving its systemwide (excluding Merced) target of a 2:1 ratio for undergraduate enrollment: two new freshmen for every one transfer student (1.1.3). Five UC campuses have met this goal and the remaining three, excluding Merced, have plans to do so.

UC President Janet Napolitano and Chancellor Eloy Ortiz Oakley of the California Community College (CCC) system have signed an agreement to increase the number of academically prepared community college students who transfer to UC and earn a bachelor's degree. Under the agreement, community college students who complete a transfer pathway and have the requisite GPA are guaranteed a place at UC, beginning in fall 2019. In addition to the UC-CCC agreement, UC has ramped up its outreach programs to high school and community college students to make sure they are prepared for UC and made aware of financial aid programs to attend.

UC programs improve academic skills of K–12 and community college students across California.

UC K-12 and community college student services programs, Spring 2017 (10.3.1)



Source: UC campuses

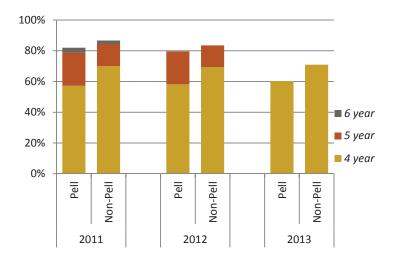
SAPEP (Student Academic Preparation and Educational Partnerships) outreach programs such as the Early Academic Outreach Program (EAOP), Mathematics, Engineering, Science Achievement (MESA) and The Puente Project are designed to increase completion of college preparatory ("a-g") courses, support enrollment directly from high school into four-year institutions, and support preparedness to transfer from community colleges to four-year institutions.

In 2015–16, SAPEP programs served nearly 160,000 K–12 students at more than 1,100 public schools, and over 25,000 community college students at all 113 community colleges. In addition, over 52,000 parents/guardians of K–12 students and over 13,000 teachers, counselors and school administrators also participated in SAPEP programs.

Providing access to UC is important, but it is equally important that students graduate and that they do so in a timely manner. The University of California is working to increase degree completion rates — President Napolitano recently stated the goal to increase four-year graduation rates to 70 percent. Achieving this goal will require a concerted effort to improve timely graduation of low-income and first generation students. As seen in the next chart, the most recent four-year graduation rate for Pell recipients is around 60 percent. Students often take four years and an additional term to graduate, which is why the 5 and 6 year rates are also shown.

Over 80 percent of Pell students graduate within six years.

Freshman graduation rates by Pell Grant recipient status, Cohorts entering fall 2011, 2012 and 2013 (3.1.6)

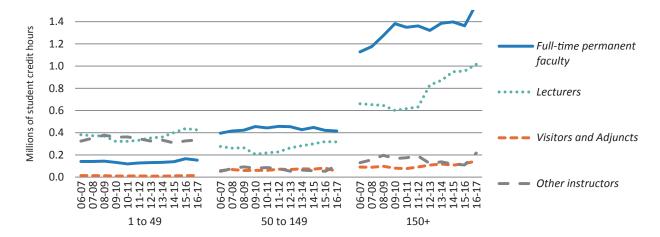


Source: UC Data Warehouse. Pell Grant recipients are those who received a Pell Grant at any time during their time at UC.

Strategies to improve graduation rates for Pell recipients will likely require additional investment, including expanded financial support for summer enrollment, enrollment in smaller courses, greater advising support, and other programs that improve outcomes, such as those that foster a sense of belonging to the institution for first-generation and underrepresented students. The student-faculty ratio continues to increase, however, and there is an uptick in very large lower-division courses. These realities make improving time-to-degree more challenging.

The number of credit hours in courses with over 150 students continues to rise.

Student credit hours, by instructional staff and class type and class size, lower division classes (8.4.4)

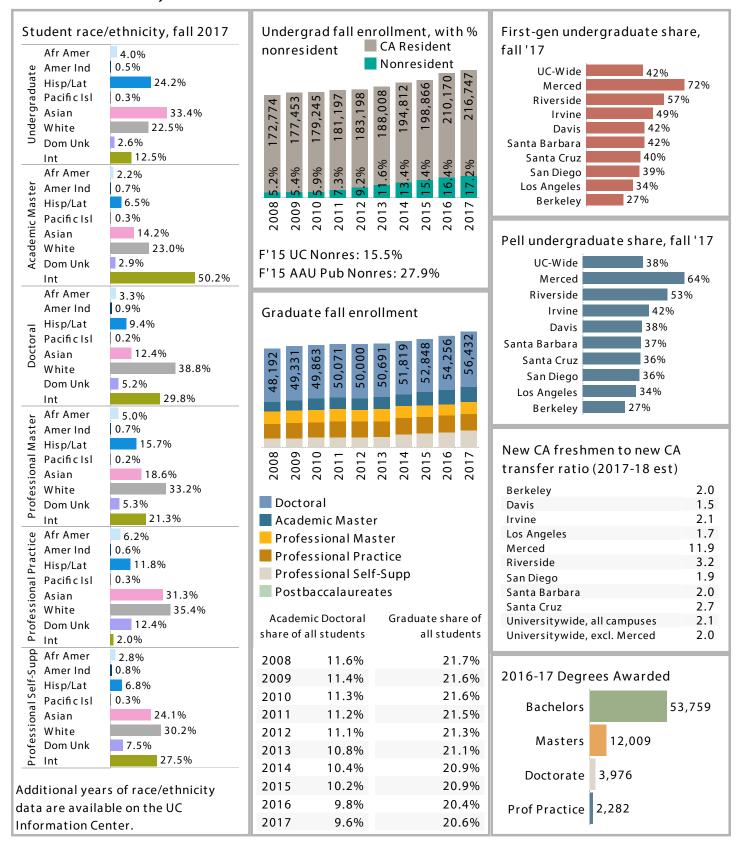


Since it was established, the trusted partnership between the State of California and UC has served generations of Californians: providing a better future, powering the economy, and lifting up all California residents. This partnership needs to be renewed and strengthened.

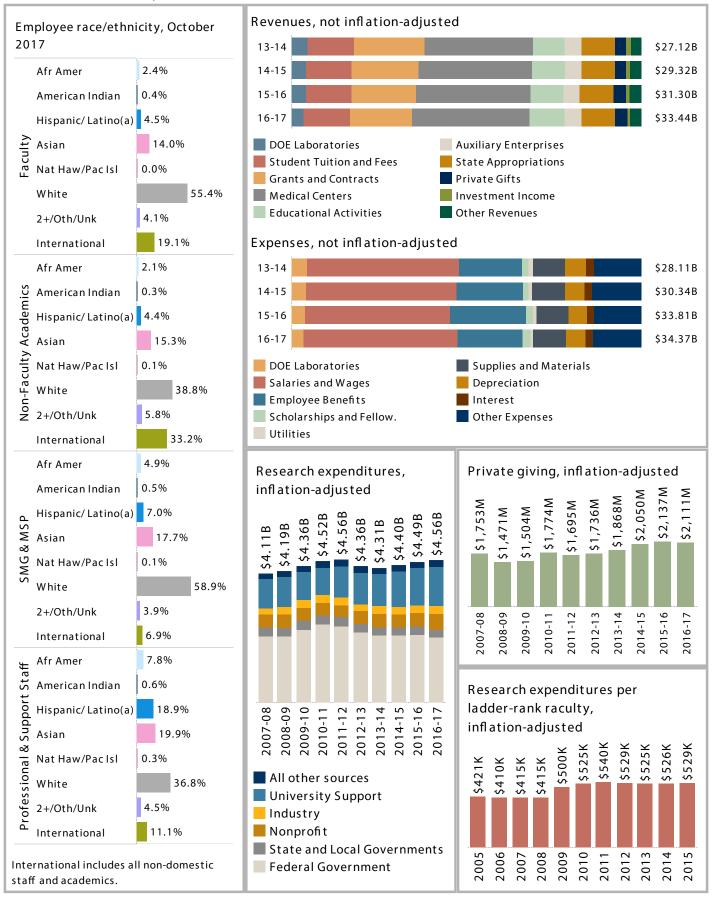
As in the past, investment by the State in the University of California leads to a strong return on investment and opens doors for California's future generations. Ensuring a well-funded research enterprise establishes a strong foundation for California's economy, from meeting social challenges to launching future industries. An investment in research is also an investment in UC's graduate students who are the State's future researchers, educators and job creators. Adequate support for the growth in undergraduate enrollment advances economic mobility for the entire State.

A hallmark of UC's partnership with the state is the University's commitment to improving its operations and to making the most of its resources. The Accountability Report is an essential tool for both of those goals. UC uses the data in the Accountability Report and in the UC Information Center to track performance across the system and address areas that need improvement. As one example, the attached Executive Summary Accountability Report dashboard mirrors similar campus dashboards used in annual budget meetings between the President and Chancellors to discuss progress, challenges, and improvement goals.

2018 Accountability Dashboard



2018 Accountability Dashboard



2018 Accountability Report Dashboard Data Definitions and Sources

PAGE 1

Undergraduate fall enrollment and **race/ethnicity** exclude postbaccalaureate teaching credential students. Enrollments are as of the third week.

universityofcalifornia.edu/infocenter/fall-enrollment-headcounts

Percent UG nonresident is based on those paying nonresident supplemental tuition for UC, and based on the Common Data Set for the AAU Public average, which excludes UC. universityofcalifornia.edu/infocenter/fall-enrollment-headcounts

Academic Doctoral share of all students and **Graduate share of all students** is based on fall headcounts. universityofcalifornia.edu/infocenter/fall-enrollment-headcounts

First-generation students are those who do not have a parent who graduated with a 4-year college degree. university of california. edu/infocenter/fall-enrollment-headcounts

Pell grants are federal awards for low-income undergraduates, generally awarded to those with incomes below 40,000.

universityofcalifornia.edu/infocenter/fall-enrollment-headcounts

New CA Resident Freshman to Transfer Ratio is based on estimates for the 2017-18 academic year.

Degrees awarded include both the full academic year and the trailing summer, but may omit some retroactive degrees.

universityofcalifornia.edu/infocenter/degrees-awarded-data

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SMG are the Senior Management Group. **MSP** are Managers and Senior Professionals. Student employees are excluded from all groups. Diversity figures are based on headcounts. universityofcalifornia.edu/infocenter/uc-workforce-diversity

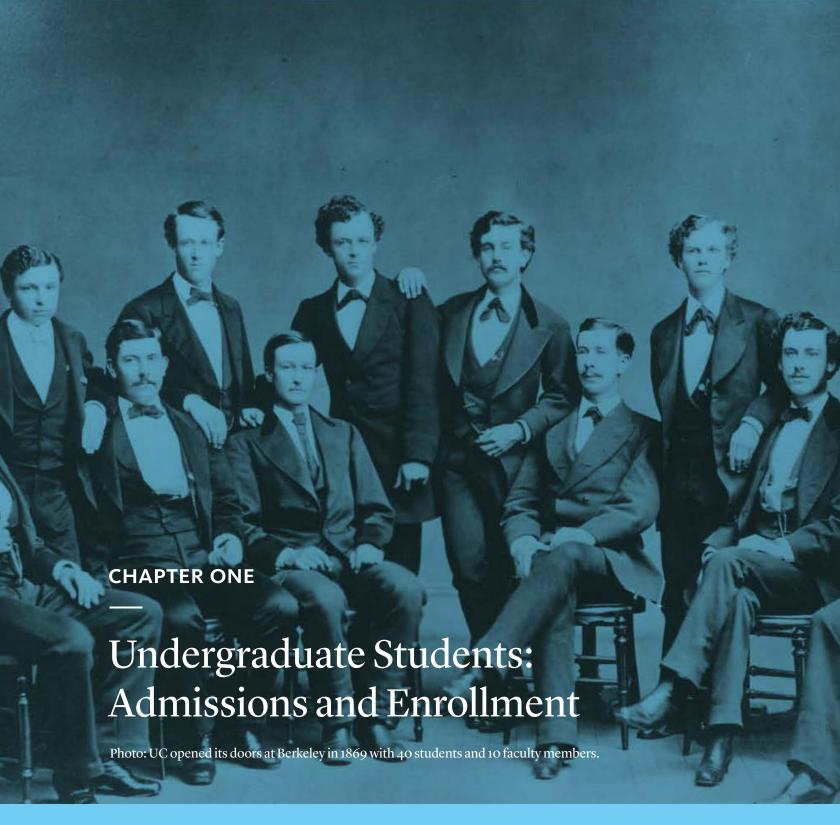
Revenues and expenses and the **operating results** are from the UC Revenue and Expense Trend Report. reporting transparency.university of california.edu/

The **inflation adjustment** used is the "CA CPI-W", calendar year, which can be found on this page: dof.ca.gov/Forecasting/Economics/Eco_Forecasts_Us_Ca/index.html

The **research expenditure per ladder-rank faculty** come from data as reported to IPEDS, and divide the total research expenditures (which, for IPEDS, include operation and maintenance of plant, depreciation, and interest expenses) by the number of ladder-rank faculty as reported to IPEDS.

The UC Accountability Report website: accountability.universityofcalifornia.edu

The UC Information Center: universityofcalifornia.edu/infocenter





1868

On March 23, 1868, California Governor Henry Haight signed the charter that creates the Univeristy of California, setting in motion the bold idea that college should be available to everyone.



1870

The University started admitting women equally with men and eight women registered in fall 1870.

UNDERGRADUATE STUDENTS — ADMISSIONS AND ENROLLMENT

History

On March 23, 1868, California Governor Henry Haight signed the charter that created the University of California, setting in motion the bold idea that college should be available to everyone. In 1869, UC opened its doors in Berkeley with 40 students and 10 faculty members. The University started admitting women equally with men the following year, and eight women registered in fall 1870, more than 20 years before Stanford did the same.

The University has grown both by opening its own new campuses and by merging with existing institutions. Since the first campus opened 150 years ago, UC has established nine campuses across California to fulfill the mission of educating California's undergraduate students. In 1905, the University Farm Bill called for the establishment of a farm school for the University of California, which would become UC Davis; in 1919 the Los Angeles State Normal School became the Southern Branch of the University of California, now known as UCLA; UC Riverside merged with the Citrus Experiment Station and began teaching classes in 1954; UC San Diego grew out of the Scripps Institution of Oceanography and came into its current incarnation in 1960; UC Santa Barbara also began as a State Normal School and became a UC general campus in 1959; UC Santa Cruz and UC Irvine were designed as UC general campuses and both opened in 1965; UC Merced, located to serve the growing Central Valley, opened in 2005.

Goals

One of the University of California's highest priorities is to ensure that a UC education remains accessible to all Californians who meet its admissions standards. This goal is articulated in California's Master Plan for Higher Education, which calls for UC to admit all eligible freshmen and transfers with freshman eligibility, with the intention of capturing the top 12.5 percent of California public high school graduates. It also calls for UC to admit all qualified transfer students from California Community Colleges (CCCs).

Nearly 172,000 students applied as freshmen and over 38,000 as transfers for fall 2017. Campus admission decisions are based on a comprehensive review of qualifications, and campuses establish the incoming California resident class size based on state funding. Increased state support allowed the University to increase enrollment of California residents by nearly 4,000 in fall 2017 compared to fall 2016, following an increase of over 7,000 in fall 2016.

For 2017–18, UC also is estimated to have achieved its goal of enrolling a 2:1 ratio of freshmen to transfer California resident undergraduates, excluding Merced. The UC Transfer Pathways initiative supports this goal by helping community college students prepare for transfer admission to the most popular majors at UC campuses.



1905

The University Farm Bill called for the establishment of a farm school for the University of California, which would become UC Davis.



1907

The Riverside Citrus
Experiment Station
opens to conduct statefunded research on blight,
soils and irrigation. The
station would later play a
role in establishing a UC
campus at Riverside.

Admissions — freshmen

UC relies on a comprehensive review process to make admission decisions, considering not only completion of rigorous college preparatory courses, high school GPA and standardized test scores, but also talents, special projects, accomplishments in light of life experiences and circumstances, extracurricular activities and community service.

UC continues to reach its Master Plan goals by guaranteeing admission to California resident applicants who are either in the top nine percent of high school graduates statewide or the top nine percent of graduates from their own high school. Qualified freshman applicants are offered an opportunity to be admitted to another UC campus if they do not receive an offer of admission from the UC campuses to which they applied.

Admissions — transfers

A key recommendation stemming from the 2013 President's Transfer Action Team was to streamline the transfer process for prospective UC students. To that end, the UC Transfer Pathways initiative set out to identify a common set of lower-division courses for each of UC's 21 most popular majors among transfer applicants. These new Transfer Pathways would present a clear roadmap for prospective transfers to prepare for their major and be well positioned to graduate in a timely fashion from any UC campus. In April 2017, UC signed an agreement with the California Community Colleges (CCCs) to guarantee a place within the UC system to students who complete one of the transfer pathways and achieve the requisite grade point average (GPA). Almost all transfer students enter UC as upper-division juniors. Campus enrollment targets are based on state funding as well as capacity in major programs at the upper-division level.

Enrollments

The University enrolled 217,000 undergraduates in fall 2017. The University enrolls freshman and transfer students from every county of California, but students tend to enroll in campuses closer to their residence. UC's Eligibility in the Local Context (ELC) program is designed to increase the overall geographic diversity of entrants and this goal is also addressed as a recommendation in the Transfer Action Team report.

Undergraduate Enrollment, Fall 2017	
New Freshmen	46,014
New Transfers	20,151
Continuing Students	150,582
TOTAL	216.747

Source: UC Data Warehouse



1919

The Los Angeles State
Normal School became
the Southern Branch
of the University of
California (now known as
UCLA) marking UC's
transformation into a
multicampus institution.



1959

UC Riverside and UC
Davis are made general
campuses of the University, and development of a
site at La Jolla is approved
to be a campus, which
would become UC San
Diego in 1960.

As academic qualifications have improved over the last decade, UC has maintained access for populations that are historically underserved by higher education. In fall 2017, 38 percent of new undergraduates received Pell Grants—a marker for low-income status—and 42 percent did not have parent(s) who completed a four-year college degree.

The share of all undergraduates who are nonresident domestic and international students has increased in recent years, though their proportion is still much lower than at comparable public research universities. In 2016–17, the share of new undergraduates paying nonresident tuition went down after increasing in recent years. In May 2017, UC adopted a policy affirming that nonresident undergraduates "will continue to be enrolled in addition to, rather than in place of, funded California undergraduates at each campus." The policy also caps nonresident enrollment at 18 percent for five UC campuses (Davis, Merced, Riverside, Santa Barbara and Santa Cruz) and capped nonresident enrollment for the remaining four campuses (Berkeley, Irvine, Los Angeles and San Diego) at the proportion each campus enrolls in 2017–18.

Having California students learn and live alongside students from backgrounds and cultures different from their own is part of a world-class educational experience. California students also benefit from the extra tuition paid by nonresident undergraduates, which is about \$28,000 more than the amount paid by residents. That tuition helps to fund faculty hires, instructional technology, student advising and other services that directly benefit California students.

Admissions and enrollment trends

Freshman applicants have more than tripled over the past two decades, averaging six percent growth per year. In fall 2017, the number of applicants increased three percent compared to the previous year while the number of students admitted went down slightly (less than one percent) (1.1.1).

Fall transfer applicants nearly doubled over the last 20 years, with average annual growth of three percent. In fall 2017, transfer applicants went down four percent compared to the previous year, while admits and enrollees both went up three percent (1.1.2).

The Master Plan specifies that the University maintain a 60:40 ratio of upper-division to lower-division students, which corresponds to a 2:1 ratio of new California resident freshmen to new California resident transfers. UC has moved closer to that ratio, from 2.3:1 in recent years to an estimated 2.1:1 in 2017–18 (universitywide). The universitywide ratio (excluding Merced) is estimated to be 2.0:1 for 2017-18, achieving the systemwide goal for this metric (1.1.3).

Overall undergraduate enrollment (new and continuing students) continued to grow in fall 2017. Total enrollment was nearly 217,000 in fall 2017, up three percent from the year before. This includes an increase in California residents of nearly 4,000, following an increase of over 7,000 in fall 2016 (1.1.4).



1959

UC Santa Barbara gains designation as a general campus five years after moving to the site of a former Marine Air Base that the federal government sold to UC for \$1.00.



1965

UC Santa Cruz opens on the site of Cowell Ranch, overlooking Monterey Bay, with an inaguaral class of 652 liberal arts students. About 42 percent of UC's entering students are first-generation, meaning neither parent graduated from a four-year college. These students are more likely to be from an underrepresented group, to have a first language other than English, to enter as a transfer student, to be female and/or to have a lower income than students with at least one parent who graduated from a four-year college (1.2.1).

Academic preparation

Freshmen entering UC are increasingly well prepared, as shown by changes in the number of college preparatory courses, high school GPA and test scores over time (1.3.1). Transfer students are also increasingly well prepared, as measured by college GPA (1.3.2).

Geographic origins and nonresidents

UC has a lower proportion of out-of-state undergraduates than other public Association of American University (AAU) comparators. In fall 2016, only 16.5 percent of UC's enrollees were out-of-state or international, compared with 28.7 percent for other AAU publics (1.4.1). About 34 percent of freshmen and 46 percent of transfer students entering UC campuses come from within 50 miles of campus. These numbers are quite stable and have actually risen slightly over the past few years (1.4.2, 1.4.3). Although the share of all undergraduates paying nonresident tuition has gone up in recent years, the proportion of new undergraduate students paying nonresident tuition went down in 2016–17 (1.4.4).

Looking ahead

The University is committed to sustaining access and educating as many California residents as it can. UC, in the last two years, has already achieved its three-year plan to increase California undergraduate resident full-time equivalent (FTE) enrollment by 10,000. Next year, it is planning to increase California resident FTE enrollment by at least another 2,000.

For more information

Information on admissions: admission.universityofcalifornia.edu

Transfer Pathways (for transfer applicants): admission.universityofcalifornia.edu/transfer/preparation-paths/ Transfer Action Team 2014 report: ucop.edu/transfer-action-team/transfer-action-team-report-2014.pdf

UC admissions data:

universityofcalifornia.edu/infocenter/admissions-residency-and-ethnicity universityofcalifornia.edu/infocenter/admissions-source-school universityofcalifornia.edu/infocenter/transfers-major

UC fall enrollment data:

universityofcalifornia.edu/infocenter/fall-enrollment-headcounts



1965

UC Irvine campus opens with 1,589 students enrolled. The 1,000 acre site was donated by the Irvine Company and becomes the centerpiece of the new city of Irvine.

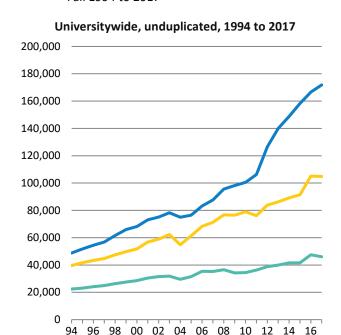


2005

Forty years after the last new UC campus opened, UC Merced celebrates its grand opening. UC Merced becomes the youngest research institution to earn R2 classification.

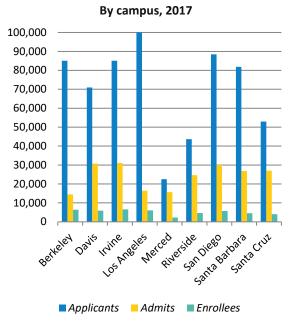
Demand for UC continues to grow.

1.1.1 Freshman applicants, admits and enrollees Universitywide and UC campuses Fall 1994 to 2017



The rapid growth in freshman applicants to UC over the past two decades demonstrates the increased demand for college education, the growth of California's population and UC's continued popularity. UC maintains its obligations under the Master Plan by guaranteeing admission to all qualified students.

From 2011 to 2017, unduplicated freshman applicants grew 62 percent (or about eight percent per year) from about 106,000 to about 172,000, compared to a 42 percent increase in the seven-year period between 2004 and 2011 (or about five percent per year) from about 75,000 to 106,000. The 62 percent growth represents about 66,000 applicants, including about 27,000 California residents.



Source: UC Data Warehouse¹

Qualified applicants who are not offered admission at the campus(es) to which they applied to are offered admission to another campus by a referral process. A change in accounting for referral students is responsible for the apparent drop in 2011 admits. Beginning that year, UC Merced admitted only students who indicated interest in a referral offer, rather than every student who qualified for an offer.

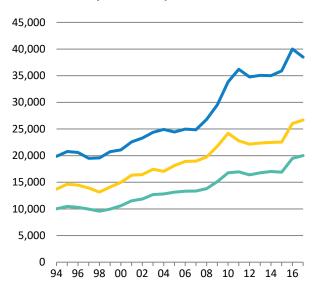
Most campuses admit less than half of applicants. Many applicants apply to more than one UC campus. In fall 2017, each UC applicant applied to an average of 3.7 campuses. Freshman applicants increased on all campuses in fall 2017. For data tables on UC freshman applicants, admits and enrollees by campus over time see: universityofcalifornia.edu/infocenter/admissions-residency-and-ethnicity.

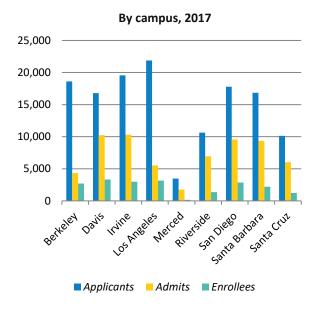
¹ Admits and enrollees here include applicants guaranteed admission who are not offered admission at a campus to which they applied but who are referred to and admitted by another campus. Some campuses admit fall applicants for a subsequent term (winter or spring). These "rollover" admits and enrollees are excluded in the graphs. Students who apply to multiple UC campuses are counted only once in the universitywide indicator.

Transfer admits and enrollees continued to increase in 2017.

1.1.2 Transfer applicants, admits and enrollees Universitywide and UC campuses Fall 1994 to 2017

Universitywide, unduplicated, 1994 to 2017





Source: UC Data Warehouse¹

Applications went down, but admits and enrollees increased in 2017 as the University continued to increase California resident enrollment. Over 38,000 transfer students applied, nearly 27,000 were admitted and over 20,000 enrolled in fall 2017. Consistent with UC's commitment to transfer students from California Community Colleges (CCCs), the fall enrollment of new CCC California resident transfers has nearly doubled since 1994 (from 8,400 to 16,300).

A key recommendation in the 2014 Transfer Action Team Report was to streamline the transfer process for prospective UC students. This led to the creation of the UC Transfer Pathways, which identify a common set of lower-division courses for each of UC's 21 most popular majors among transfer applicants. These new Transfer Pathways present a clear roadmap for prospective transfers to prepare for their major:

TRANSFER PATHWAYS MAJORS

Anthropology	Economics	Philosophy
Biochemistry	Electrical engineering	Physics
Biology	English	Political science
Business administration	Film and media studies	Psychology
Cell biology	History	Sociology
Chemistry	Mathematics	
Communication	munication Mechanical engineering	
Computer science	Molecular biology	

For fall 2017, the initial year of the Transfer Pathways, almost 80 percent of those indicating Pathway-based preparation were admitted and enrolled. They represented 46 percent of all CCC admits and 47 percent of all CCC enrollees. Many of these students also participated in other preparatory programs such as Transfer Admissions Guarantee (TAG) and Intersegmental General Education Transfer Curriculum (IGETC).

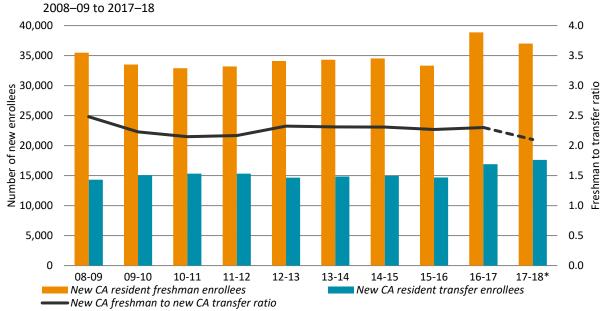
For data tables on UC transfer applicants, admits and enrollees by campus see:

www.universityofcalifornia.edu/infocenter/admissions-residency-and-ethnicity.

¹ Admits and enrollees here include the referral pool. Some campuses admit fall applicants for a subsequent term (winter or spring). These "rollover" admits and enrollees are excluded from the graphs here, which only show fall data.

UC continues to work toward achieving its goal of a 2:1 ratio of California resident freshmen to transfer students.

1.1.3 New freshmen and transfer students Universitywide



Source: UC Data Warehouse and UC campuses1

The Master Plan calls for UC to accommodate all qualified resident California Community College (CCC) transfer students. It specifies that the University maintain at least a 60:40 ratio of upperdivision (junior- and senior-level) to lower-division (freshman- and sophomore-level) students to ensure adequate upper-division spaces for CCC transfers. To do so, UC aims to enroll one new California resident transfer student for every two new California resident freshmen, or 67 percent new resident freshmen to 33 percent new resident transfer students. UC has moved closer to that ratio, from 2.3:1 in recent years to 2.1:1 in 2017-18 (universitywide). Excluding Merced, the ratio in 2017-18 is estimated to be 2.0:1, meeting the systemwide goal.² Nearly all (95 percent) of California resident transfer students in fall 2016 came from CCCs.

2017-18*	% New CA resident freshmen	% New CA resident transfers	Ratio of new CA freshmen to new CA
Berkeley	66%	34%	transfers 2.0
Davis	59%	41%	1.5
			_
Irvine	67%	33%	2.1
Los Angeles	63%	37%	1.7
Merced	92%	8%	11.9
Riverside	76%	24%	3.2
San Diego	65%	35%	1.9
Santa Barbara	67%	33%	2.0
Santa Cruz	73%	27%	2.7
Universitywide,			
all campuses	68%	32%	2.1
Universitywide,			
excl. Merced ²	67%	33%	2.0

¹Full year headcount enrollment. * The actual figures for 2017-18 are not yet available and may differ from the estimated figures shown here.

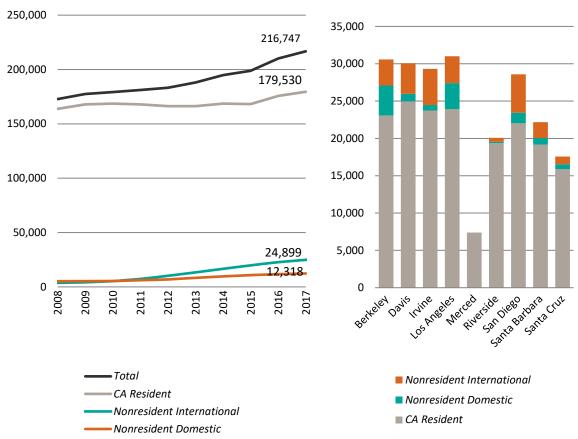
² Merced is excluded from the 2:1 ratio goal that is part of the Budget Framework agreement with the governor.

UC's fall undergraduate headcount grew by three percent between fall 2016 and fall 2017, mostly due to increased California resident enrollment.

1.1.4 Undergraduate headcount enrollment Universitywide and UC Campuses Fall 2008 to 2017

Universitywide, 2008 to 2017

By campus, 2017



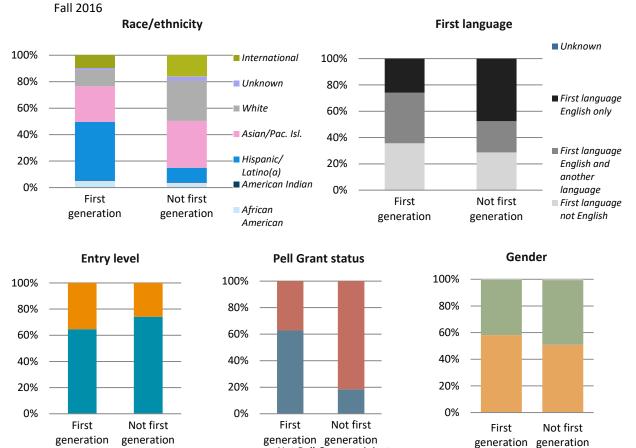
Source: UC Data Warehouse

The University and the state share the goal of expanding access to a UC education. Increased state support allowed the University to enroll 3,900 additional California residents in fall 2017 compared to fall 2016, following an increase of over 7,000 California residents the previous year. The 3,900 additional California residents represent almost 60 percent of the overall increase of 6,600 for fall 2017.

This continued growth following years of constrained resources has caused several challenges, including limited resources for instruction, increased demand for advising and other student services, and housing shortages. UC is responding with investments in student facilities and services (see indicator 12.2.3).

UC's entering first-generation students are more likely to be from an underrepresented group (URG), to have a first language other than English, to enter as a transfer student and/or to have a lower income than students with at least one parent who graduated from college.

1.2.1 Entering students by first-generation status, race/ethnicity, first language spoken at home, Pell Grant receipt and entering level Universitywide



Not Pell Grant recipients

■ Pell Grant recipients

Source: UC Data Warehouse¹

■ Female ■ Male ■ Unknown

Half (50 percent) of entering first-generation students in fall 2017 are URGs, compared to 15 percent of non-first-generation students. Over one-third (36 percent) of first-generation students' first language was not English, versus 29 percent for others. Over one-third (35 percent) of first-generation students entered as transfers, versus 26

percent for others. Nearly two-thirds (63 percent) of first-generation students are lower-income Pell Grant recipients, versus 18 percent for others. And nearly three-fifths (58 percent) of first-generation students are female, compared to just over half (51 percent) of others.

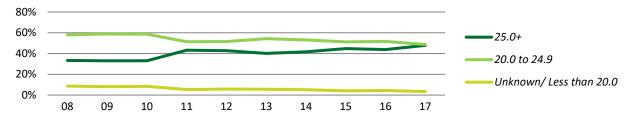
¹First-generation students are those whose parent(s) did not complete a four-year college degree. Total of first-generation students is 27,830 (42.1%); non-first-generation students total 36,472 (55.1%); and missing/unknown are 1,863 (2.8%). Those with unknown first-generation status are excluded from charts. Pell Grant receipt is used as a proxy for low-income status. Less than .02% of entering students have an unknown first language.

■ Freshmen ■ Transfer students

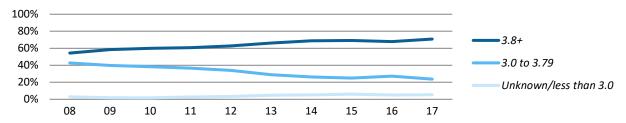
Freshmen entering UC are increasingly well prepared.

1.3.1 A–G (college preparatory)¹ courses; weighted, capped high school grade point average (GPA)²; and standardized test scores³ of entering freshmen, as share of class
Universitywide
Fall 2000 to fall 2017

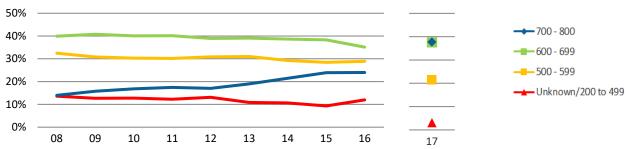
Yearlong "A-G" courses



High school weighted, capped GPA



Test score



Source: UC Application Processing data (A-G courses and test score) and UC Data Warehouse (GPA)

The academic qualifications of UC entering freshmen have improved over time, as reflected by an increase in the share of students completing 25 or more college-preparatory courses, having a 3.8 or higher high school GPA and scoring 700 or higher on standardized entrance exams (SAT/ACT). From 2008

to 2017, the first indicator went up from 33 percent to 48 percent, while the second went up from 54 percent to 71 percent. Test scores for 2017 are not directly comparable to prior years, but the share scoring 700 or higher went up from 14 percent in 2008 to 24 percent in 2016.

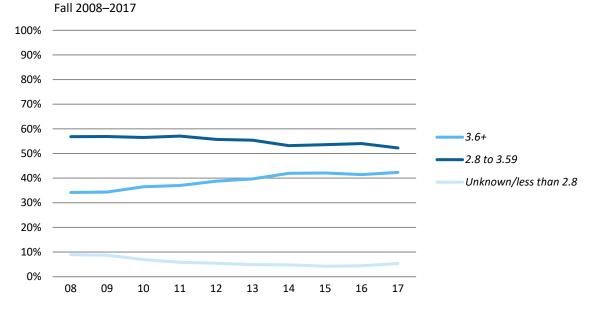
¹ A–G courses refer to those high school courses that UC has reviewed and approved as college preparatory. The minimum number of required A-G courses is 15.

² Weighted, capped GPA means that students may receive a maximum of eight semesters of honors credit. More information is available at admission.universityofcalifornia.edu/freshman/california-residents/admissions-index/index.html.

³ Test scores are the highest of either SAT or ACT scores. ACT scores are converted to the 800 SAT scale. From 2008 to 2016, SAT scores are the average of SAT math and critical reading scores. The SAT was redesigned for 2017 and scores reflect the average of the math scores and the evidence-based reading and writing score; these scores are not directly comparable to prior years.

Like freshmen, UC transfer students in fall 2017 were better prepared academically than their counterparts a decade ago, as measured by their grades.

1.3.2 College grade point average (GPA)¹ of entering transfer students, as share of class Universitywide



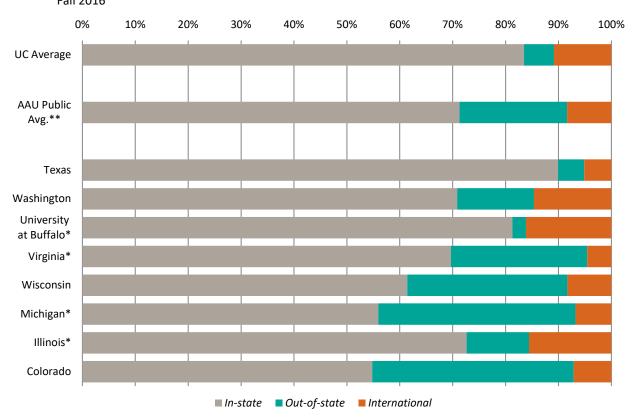
Source: UC Data Warehouse and UC Corporate Student System

The academic qualifications of transfer students entering UC have improved over time, as reflected by an increase in the share of students having a 3.6 or higher college GPA from 34 percent in fall 2008 to 42 percent in fall 2017.

¹ The transfer GPA is based on grades for college-level academic courses from the college(s) where students were previously enrolled. *Merced opened in 2005.

UC has a substantially lower proportion of out-of-state undergraduates than other AAU universities. In fall 2016, only 16.5 percent of UC's enrollees were out-of-state or international, compared with 28.7 percent for other AAU publics.

1.4.1 Residency of undergraduate students Universitywide and comparison institutions Fall 2016



Source: UC Data Warehouse (UC numbers) and Common Data Set (comparator numbers)

* UC's public four comparison institutions. **AAU public average excludes UC.

UC's priority is to enroll California residents.

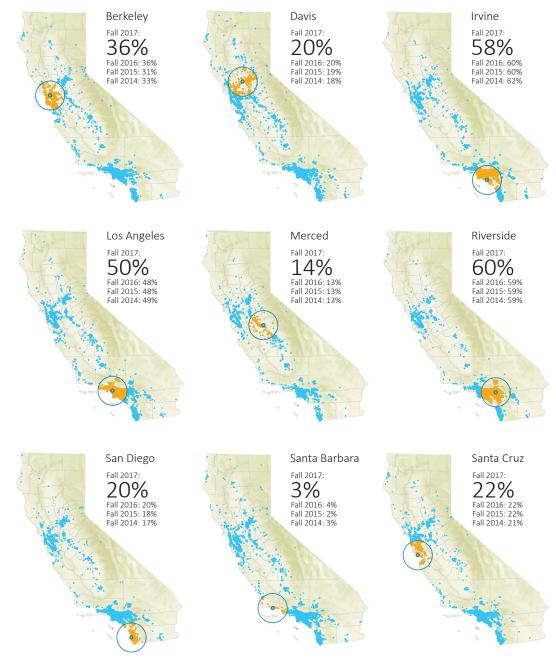
Campuses enroll nonresident students based on available physical and instructional capacity and the campus's ability to attract qualified nonresident students.

Nonresidents provide geographic and cultural diversity to the student body. They also pay the full cost of their education. In 2016–17, tuition and fees at UC campuses for a nonresident undergraduate, including health insurance, ranged from \$41,700 to \$43,900, compared to \$15,000 to \$17,200 for California resident students.

Nonresident applicants must meet higher criteria to be considered for admission. The minimum high school GPA for nonresident freshmen is 3.4, compared to 3.0 for California freshmen. The minimum college GPA for nonresident transfer students is 2.8, compared to 2.4 for California residents.

UC campuses attract freshmen from their local regions and the major urban areas of California, with a systemwide local attendance rate of 34 percent.

1.4.2 Percentage of new California resident freshman enrollees living within a 50-mile radius of their campus UC campuses¹
Fall 2017

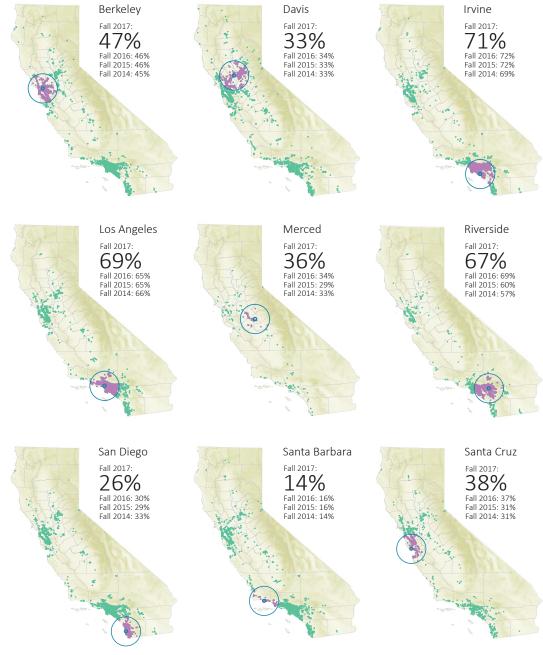


Source: UC Corporate Student System

¹ California residents are defined here as those with permanent addresses in California.

Local enrollment rates for transfers are even higher than for freshmen, with 46 percent enrolling at a UC campus within 50 miles of their home.

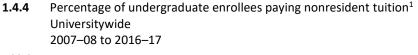
1.4.3 Percentage of new California resident transfer enrollees whose home is within a 50-mile radius of their campus, UC campuses¹
Fall 2017

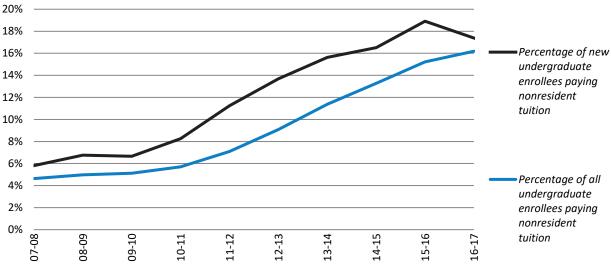


Source: UC Corporate Student System

¹ California residents are defined here as those with permanent addresses in California.

The proportion of new undergraduate students paying nonresident tuition went down in 2016-17.



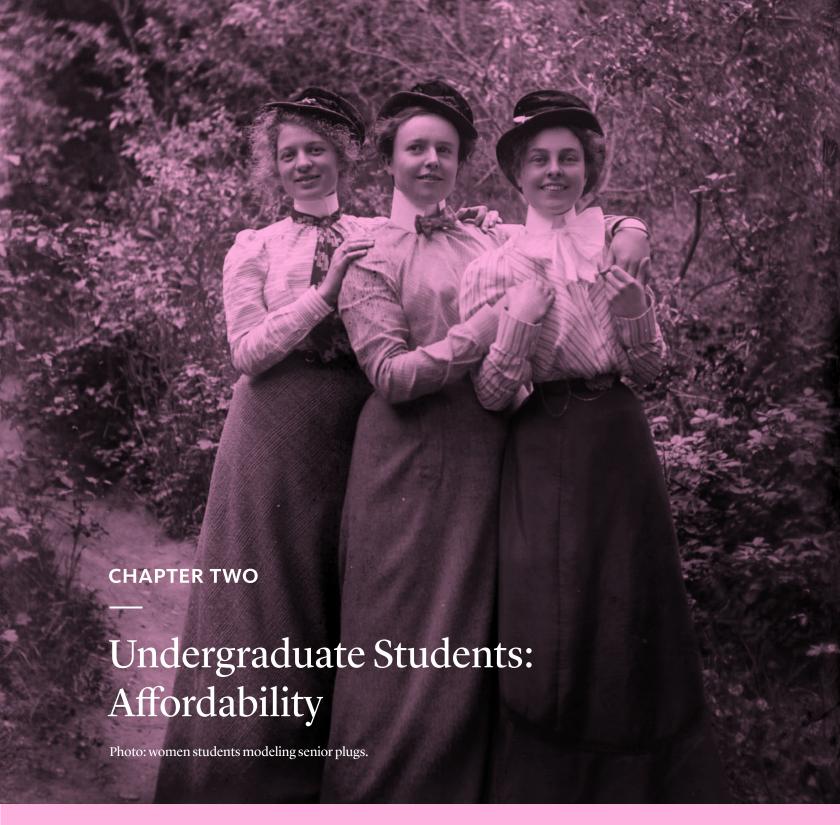


Source: UC Data Warehouse

Systemwide, the share of all undergraduates paying nonresident tuition rose from 5 percent to 16 percent from 2009–10 to 2016–17. From 2009–10 to 2015-16, the share of new undergraduates paying nonresident tuition went up from 7 percent to 19 percent before dropping to 17 percent in 2016-17 as enrollment of new California residents increased. The proportion of nonresident students at individual campuses varies depending on a campus' capacity as well as its ability to attract nonresident students.

Systemwide tuition and fees for nonresident undergraduates is \$40,644 in 2017-18 compared to \$12,630 for California residents. UC campuses used to be able to provide need-based grants as a potential source to support low-income nonresident undergraduate students, but the 2015 Budget Act required these funds be used to support the enrollment of California resident undergraduates. Beginning in 2016-17, the University began to phase out funding for need-based grants for nonresident students. Nonresident tuition will increase by 3.5 percent in 2018-19 but in taking that action, the Regents included a provision that the University will advocate to the state that it once again be allowed to offer financial aid to needy nonresident students.

¹ This chart uses year average headcount enrollment, the average headcount across all terms in the academic year (three quarters or two semesters). Not all nonresident students pay nonresident tuition. Some have statutory exemptions, such as AB540 students, children of UC employees and others designated by the state. AB540 students are considered California residents for tuition purposes as established by Assembly Bill 540, passed in 2001.



1886

The California Legislature votes to provide the University with state funding based on one penny per \$100 of taxable property (the so-called "roll tax"). UC administrators soon realize this funding is not nearly enough as enrollment soars and the student body grows from 477 to 2,066 between 1888-1898.



1891

William Randolph Hearst writes a letter offering academic scholarships for women. His mother, Phoebe A. Hearst was the first woman regent of the University.

UNDERGRADUATE STUDENTS — AFFORDABILITY

History

As a public institution of higher education, the University of California is committed to making a college education affordable for all Californians. As a partner in this effort, the California Legislature began providing the University with state funding in 1886 amid booming enrollment. In 1899, the San Francisco Examiner lauded the University for its efforts, saying, "It is one of the glories of the University of California that, for the most part, its students are poor. It is carrying out the purpose of its foundation to put children of citizens of small means on the same footing in opportunities for education as the children of the rich." In 2017, the New York Times' College Access Index ranked six UC campuses in the top ten colleges in the nation for their access for low-income students and high rates of graduating them.

It takes a village (and a University) to educate the populace—from William Randolph Hearst offering academic scholarships to women in 1891 to the Evelyn and Walter Haas, Jr. Fund providing \$1 million for scholarships to undocumented students in 2012. Since 1972, federal grants from the Pell Grant program, named for U.S. Senator Claiborne Pell, have assisted low-income students in attending UC. Since 1977, California's generous Cal Grant program has enabled California resident students who meet a minimum GPA from low- and middle-income families to achieve their dream of attending UC. Throughout its history, the University has augmented the federal grants and state-funded Cal Grants with institutional grants and other sources of student financial aid to make and keep a UC education affordable. UC provides significant support to students by redirecting one-third of tuition to the University Student Aid Program, making it possible for 56% of UC undergraduates to pay no tuition.

Goals

The goal of the University's undergraduate financial aid program is to ensure that the University remains accessible to all academically eligible students, regardless of their financial resources.

Affordability is among UC's highest priorities. The University has maintained a strong record of enabling families from all income levels to finance a high-quality education, and it closely monitors the impact of its pricing decisions and financial aid programs.

Maintaining access

The total cost of attendance and the composition of undergraduates in terms of financial resources set the framework for what is required to provide adequate financial support.

For in-state students who live on campus, the total annual cost of attendance, which comprises tuition and fees and other expenses (e.g., living and personal expenses, books and supplies, transportation and health care), has remained relatively flat over the last several years at about \$34,500. This figure compares to about \$27,000 on



1897

The California Legislature authorizes another 1 cent levy on taxable property to support UC amid overcrowding on campus. Now, a total of 2 cents per \$100 of taxable property goes to UC.



1899

"It is carrying out the purpose of its foundation to put children of citizens of small means on the same footing in opportunities for education as the children of the rich." — San Francisco Examiner

average at other Association of American Universities (AAU) public institutions and around \$67,500 for AAU private institutions.

The income profile indicators in this chapter demonstrate that the University remains accessible to low-income students. Between 2008–09 and 2016–17, the proportion of UC in-state undergraduates in the lowest income category increased from 13 percent to 20 percent, with offsetting declines among upper- and upper-middle-income families. These trends reflect both the manageability of UC's net cost for low- and middle-income families, and the decline in the incomes of UC families since the 2009 economic recession.

In fall 2017, 38 percent of all UC undergraduates received Pell Grants, which are federal grants for low-income students with family incomes typically under \$50,000.

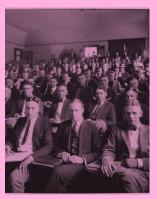
Financing a UC education

UC is able to provide access to students across the economic spectrum thanks to a progressive financial aid program that considers how much parents can afford; federal, state and University gift aid or grants; and a manageable student "self-help" contribution from work and/or borrowing.

Gift aid dramatically reduces the net cost of attendance for students and enables those from low- and middle-income backgrounds to enroll in sizable numbers and proportions. The resulting inflation-adjusted net cost of attendance for in-state students from families in the lowest income bracket (less than \$56,000) has declined or remained stable since 2004–05.

Federal and state governments provide critical support through the Pell Grant and Cal Grant programs. In addition, UC's commitment to affordability is evident in the University's strong systemwide financial aid program. This program helps cover tuition and fee costs as well as non-fee costs such as room, board and book expenses. As a result of this robust institutional financial aid program which combines support from different sources, 56 percent of California resident undergraduates paid no tuition in 2016–17.

Both UC and California have made it a priority to provide financial support to undocumented students. Approximately 4,100 undocumented students received Cal Grants or need-based UC grants in 2016–17, totaling \$86.2 million. This past year saw the expansion of the California DREAM Loan program, which provides student loans to undocumented Assembly Bill (AB) 540-students at CSU and UC. The state Legislature provided \$2.5M in UC's 2017–18 budget for the program, which has been matched by UC's own funding of another \$2.5M. Nearly 3,000 students now have access to student loans for the first time as a tool to finance their education. Undocumented students who qualify for a waiver of nonresident supplemental tuition under AB 540 were already eligible for Cal Grants and UC grants since 2013 under the California Dream Act.



1920

California Proposition 12, which would have provided a property tax increase to support UC and other state universities (circumventing the Legislature), is rejected by voters.



1929

Bowles Hall at Berkeley, the University's first residence hall, opens and houses 102 students. Sixty years later, in 1989, the eight story, Gothic-style structure becomes a historical landmark. An undergraduate's self-help requirement can be met through a combination of work and loans. UC relies on student surveys — including the University of California Undergraduate Experience Survey (UCUES) and Cost of Attendance Survey (COAS) — to measure how much students work. UCUES data show that over 50 percent of undergraduates do not work. Studies indicate that 20 hours of work per week is the threshold at which undergraduate academic performance may be adversely affected, and UC's financial aid programs are structured to expect no more than 20 hours. Nevertheless, in the most recent UCUES survey, 10 percent of students reported working more than 20 hours per week, the same share as two years earlier.

For the academic year 2016–17, about 37 percent of undergraduates relied on federal student loans to help finance their education, with loan amounts averaging \$5,769. Parental borrowing under the federal PLUS program remained at about 6 percent, with the average PLUS loan amount at about \$16,000 per year.

Since 2014–15, California's Middle Class Scholarship program has provided a new source of gift assistance for students at UC and the California State University with household incomes of up to \$164,000 who receive limited or no need-based financial aid. In 2016–17, UC students received \$17.7 million in Middle Class Scholarship awards.

Limiting cumulative debt

The proportion of undergraduates graduating with debt is lower than a decade ago. About 50 percent of the class of 2016–17 graduated with debt, with an average amount of \$20,600. This translates into a monthly repayment amount of about \$220 for 10 years at a 5 percent annual interest rate. This level of debt is manageable considering that a typical graduate who takes out loans earns about \$3,300 a month within two years of graduation.

Comparison data show the 2014–15 cumulative debt for UC undergraduates was \$21,000, compared to \$27,500 for public 4-year institutions and \$34,900 for private, nonprofit 4-year institutions.

Looking forward

In early 2017, the Regents and the UC President called for a review of the University's current Education Financing Model (EFM) to assess its effectiveness in assuring the affordability of a UC undergraduate education to all qualified students regardless of family resources. The working group conducting the review recognized that UC both enrolls a greater proportion of low-income students than any other top research university, and is successful in graduating them. The working group also made several recommendations for improving the EFM, including advocating for additional Cal Grant eligibility for summer terms, improving the measurement of total cost of attendance, investigating strategies to limit housing and health care cost increases, and expanding financial literacy training for students.



1959

The Regents are ready to expand: UC Riverside and UC Davis are made general campuses, and the Board approves the development of a site at La Jolla as a campus, that will become UC San Diego.



1959

Santa Barbara is designated a general campus and renamed University of California, Santa Barbara.

For more information

UC costs and financial aid, including financial aid estimators: http://admission.universityofcalifornia.edu/paying-for-uc/

Trends in UC financial aid: ucop.edu/student-affairs/data-and-reporting

UC's affordability for undergraduates data: universityofcalifornia.edu/infocenter/uc-remains-affordable-undergraduates

Pell Grant status by campus, residency and demographics data: universityofcalifornia.edu/infocenter/fall-enrollment-headcounts

Typical student debt, earnings, percentages of graduates with debt and debt payoff calculators: universityofcalifornia.edu/infocenter/uc-alumni-work



1976

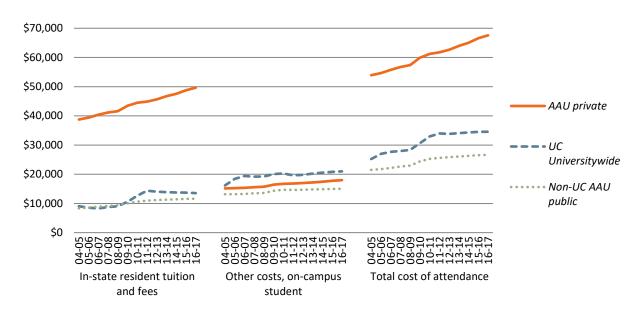
Cal Grants were created as a competitive merit-based program. In 2000 the Cal Grant was refocused and became an entitlement program.



2012

UC Berkeley announces a \$1 million scholarship for undocumented students, funded by the Evelyn and Walter Haas Jr. Fund. The program is the first of its kind in the nation. UC resident tuition and fees and total costs have remained relatively flat over the last several years, and while they still exceed the national average for other AAU public institutions, they remain below the average for AAU private institutions.

2.1.1 Total cost of attendance for undergraduate, in-state residents
Universitywide and comparison institutions, 2016 inflation-adjusted dollars
2004–05 to 2016–17



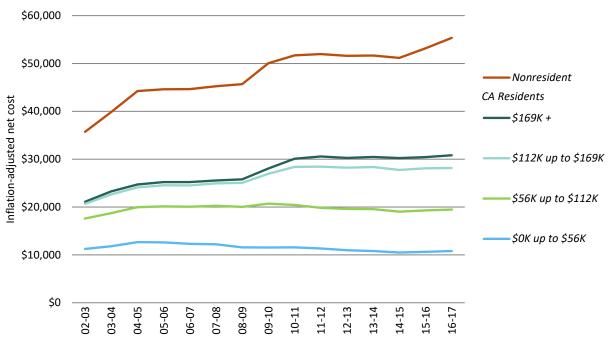
Source: IPEDS1

The total cost of attending college includes tuition and fees as well as living expenses, books and supplies, transportation, health insurance and personal expenses. The total cost of attendance is higher at UC than at AAU (Association of American Universities) public comparison institutions partly because of the relatively high cost of living in California.

After increases during the great recession, UC tuition and fees and the total cost of attendance have remained relatively flat in the past several years.

Regardless of income, the net cost of attendance after financial aid for California resident students has remained stable or declined since 2011–12. The net cost of attendance for nonresident students is substantially higher and continues to grow.

2.1.2 Net cost of attendance by family income and California residency Universitywide, 2016 inflation-adjusted dollars 2002–03 to 2016–17



Source: UC Corporate Student System²

A measure of the University's affordability is its average net cost of attendance. This represents the actual cost of attending the University for undergraduates after taking into account scholarships and grants. Scholarships and grants reduce the net cost of attending UC for students at all income levels but have the greatest impact on students from low- and middle-income families.

The availability of scholarships and grants has mitigated the impact of cost increases on students from families earning less than \$100,000.

Between 2002–03 and 2016–17, the net cost declined by about \$700 in inflation-adjusted dollars for in-state students in the lowest income category due to this scholarship and grant support.

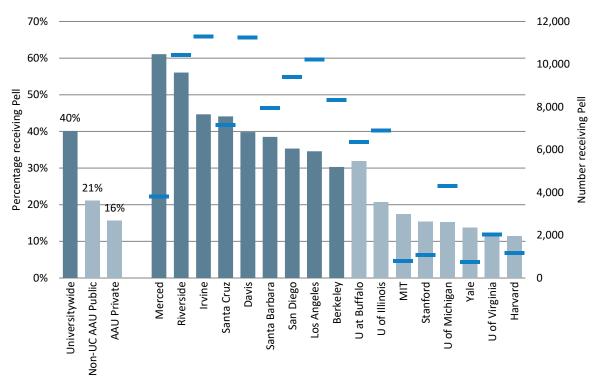
Nonresident students face a much higher net cost of attendance since they face annual supplemental tuition charges of approximately \$28,000, and since 2016–17 have not been eligible to receive institutional need-based grant aid.

¹ Charges are for in-state students living on campus. Averages are simple averages. Weighted averages for UC can be found at http://ucop.edu/student-affairs/data-and-reporting/student-budget-tables/index.html. A list of the 28 non-UC AAU public and 26 AAU private institutions in the comparison groups can be found in the data glossary.

² Income ranges are approximate. Independent students are excluded. Net cost is the full cost of attendance less any grants, scholarships and fee exemptions. Income is based on amounts reported in either the Free Application for Federal Student Aid (FAFSA) or the UC Application for Undergraduate Admission or, if missing, is imputed based on demographic profiles.

UC enrolls a higher percentage of Pell Grant recipients than any other top research university in the country.

2.2.1 Undergraduate Pell Grant recipients UC and comparison institutions 2015–16



Source: IPEDS¹

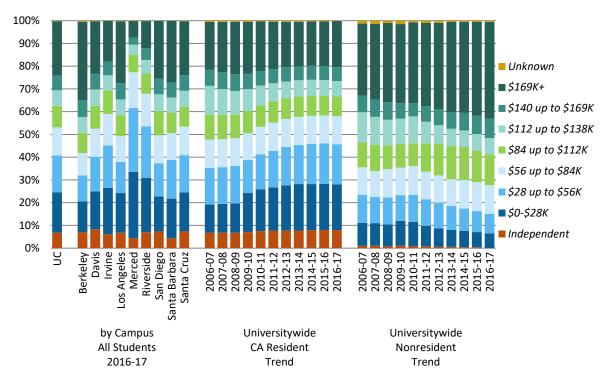
The percentage of undergraduate students with Pell Grants, a federal aid program for low-income students, provides a useful means to compare different institutions in terms of their accessibility for low-income students. It is also a useful indicator for assessing the socio-economic diversity of an institution's undergraduate student population.

The data shown represent the most recent year that data on comparison institutions are available. The proportion of UC undergraduates receiving Pell Grants went up from 31 percent in 2008–09 to 40 percent in 2015–16. This is primarily a result of increased federal spending, which made more students eligible for Pell Grants, as well as the economic downturn, which caused broad declines in family income. In fall 2017, 38 percent of UC undergraduates and 45 percent of California residents received Pell Grants. Nationally, the percentage of Pell Grant recipients has declined since 2010-11 partially due to a recovering economy.

¹ Percentage reported is that of students who received Pell Grants at any time during the 2015–16 year as a percentage of all undergraduates. Note that Pell Grant eligibility criteria change annually because of the federal appropriations process and other formula changes. Thus, trend analysis of Pell recipients would not be a valid measure of changes in low-income students but rather would reflect the changes in eligibility criteria. A list of the institutions in the AAU comparison groups can be found in the data glossary.

A large proportion of UC students come from low-income families, especially at UC's newer campuses.

2.2.2 Undergraduate income distribution Universitywide and UC campuses 2016 inflation-adjusted dollars



Source: UC Corporate Student System¹

While all UC campuses enroll a significant proportion of low-income students, the proportion varies by campus and California residency.

In-state students are more likely to be from low-income families, with 20 percent in the lowest income category in 2016–17. Since 2008–09, the proportion of low-income California resident students increased noticeably, with an offsetting decline among upper- and upper-middle-income families. During the last two years, however, the income distributions of California resident families have stabilized.

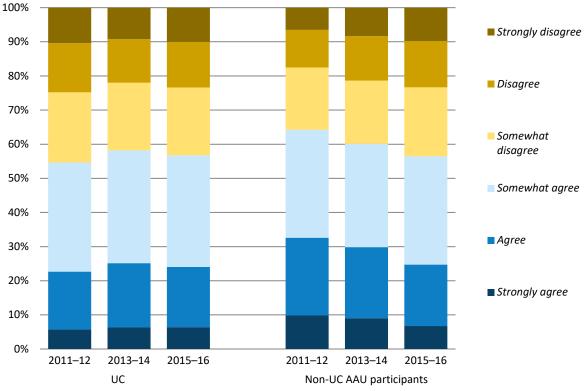
This suggests that the University's financial aid programs keep the net cost of attendance within reach of California resident and low-and middle-income families.

Conversely, more than 40 percent of nonresident students came from families in the highest income category in 2016–17. This proportion has increased steadily over the years while those in the lower- and middle-income categories have decreased.

¹ Note that prior to 2007–08, an increasing number of students at one campus with parent incomes above \$100,000 were incorrectly categorized as having an income of \$100,000. This problem was fixed in 2007–08, resulting in an apparent (but not actual) decline in the percentage of students shown in the \$107,000 to \$134,000 category and a corresponding increase in the percentage shown in higher income categories.

The share of UC students who felt that the cost of attendance was manageable has been relatively stable over the past several years.

2.3.1 Student response to "With grants and scholarships, if any, the total cost of attending the school is manageable"Universitywide and comparison institutions2011–12 to 2015–16



Source: UCUES and SERU¹

Fifty-seven percent of UC undergraduates in spring 2016 felt that the cost of attendance was manageable. This figure was 58 percent in spring 2014 and 55 percent in the spring 2012 UCUES survey. Fifty-eight percent of survey respondents at other participating AAU institutions in 2015–16 agreed that the cost of their education was manageable.

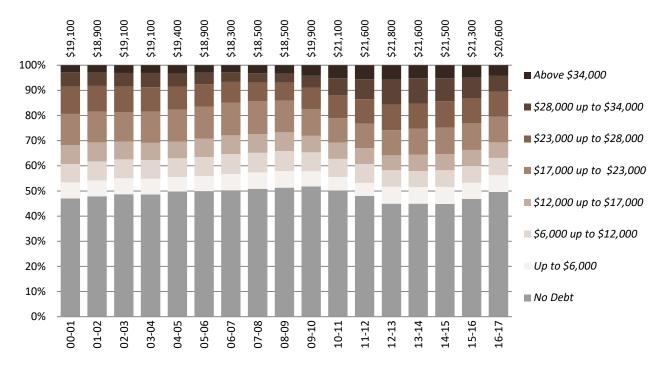
The list of non-UC AAU participants in this comparison was not the same for all three years shown. The non-UC schools included in 2011–12 were U Minnesota, Rutgers U, U Pittsburgh, USC, Texas A&M U and U Virginia. In 2013–14, additional schools included U Michigan, Indiana U, Purdue U, U lowa and U Washington.

¹ SERU is the Student Experience in the Research University survey, which is administered at a number of AAU institutions.

The average inflation-adjusted debt at graduation of student borrowers increased by 7.9 percent (from \$19,100 to \$20,600) over the past 15 years.

2.3.2 Student loan debt burden of graduating seniors, inflation-adjusted Universitywide

2000-2001 to 2016-17 (average debt of those with debt shown above each year)



Source: UC Corporate Student System

Fifty percent of UC undergraduates graduate with no debt at all. For those who do borrow, the average student loan debt at graduation in 2016–17 was about \$20,600. The monthly repayment for this amount is about \$220 for 10 years at the 5 percent average interest rate that typically applies to student loans. Lower payments are available with longer repayment periods. For more information about estimated loan repayment amounts, using this rate, visit the "Loans and Earnings" tab of the UC Alumniat-work dashboard at:

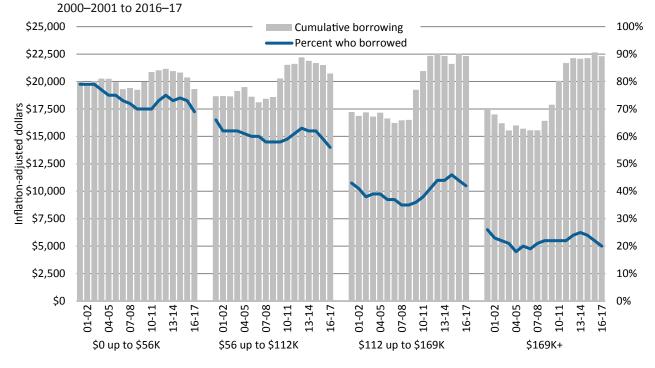
https://www.universityofcalifornia.edu/infocenter/uc-alumni-work

These figures reflect the borrowing of all graduating UC students. California resident students, however, are more likely than out-of-state students to graduate with debt. In 2016-17, about 56 percent of UC graduates who originally entered as California resident freshmen had student loan debt upon graduation, compared to only 17 percent of out-of-state students. In-state graduates' average debt, however, was significantly lower than that of the out-of-state students who borrowed (\$20,100 vs. \$28,700).

¹ Figures are adjusted for inflation in 2016 dollars using CA CPI-W. Borrowing shown here represents loans coordinated through the campus financial aid offices; some families also borrow from outside sources, which are not captured in this indicator. Independent students and students with unknown parent incomes are not shown. Data only include graduates who originally entered as freshmen.

Despite recent increases, the proportion of students graduating with loan debt across all incomes was still lower in 2016–17 than it was 15 years ago.

2.3.3 Student loan debt burden of graduating seniors by parent income Universitywide



Source: UC Corporate Student System¹

The proportion of students who borrow decreased steadily from 2000–01 through 2009–10 for students in nearly every income category. From 2010–11 through 2012–13, student borrowing increased, both in percentage and in cumulative amount. This uptick in borrowing may reflect a combination of higher costs and a reduction in other borrowing alternatives (e.g., home equity loans). In the last year however, student borrowing has decreased for all income categories.

UC student debt remains below the national average for both public and private non-profit 4-year institutions.

2.3.4 Average cumulative loan debt UC and national comparison institutions 2014–15 graduates

2011 13 61 addates	
Berkeley	\$18,012
Davis	\$19,798
Irvine	\$20,853
UC AVERAGE	\$21,018
Santa Barbara	\$21,207
Merced	\$21,411
Los Angeles	\$21,831
San Diego	\$21,895
Riverside	\$21,649
Santa Cruz	\$22,825
Public 4-year	\$27 <i>,</i> 550
Private nonprofit 4-year	\$34,900
National Average	\$30,100

Source: TICAS. National average excludes private, for-profit institutions.

¹ Figures are adjusted for inflation in 2016 dollars using CA CPI-W. Borrowing shown here represents loans coordinated through the campus financial aid offices; some families also borrow from outside sources, which are not captured in this indicator. Independent students and students with unknown parent incomes are not shown. Data only include graduates who originally entered as freshmen.

By five years after graduation, all of UC's baccalaureate programs have debt-toearnings ratios of less than 10 percent.

2.3.5 Debt-to-earnings ratios for UC undergraduate alumni at two and five years after graduation Universitywide and by Campus Undergraduate graduating cohorts 1999-2014, with student loan debt who are working in California

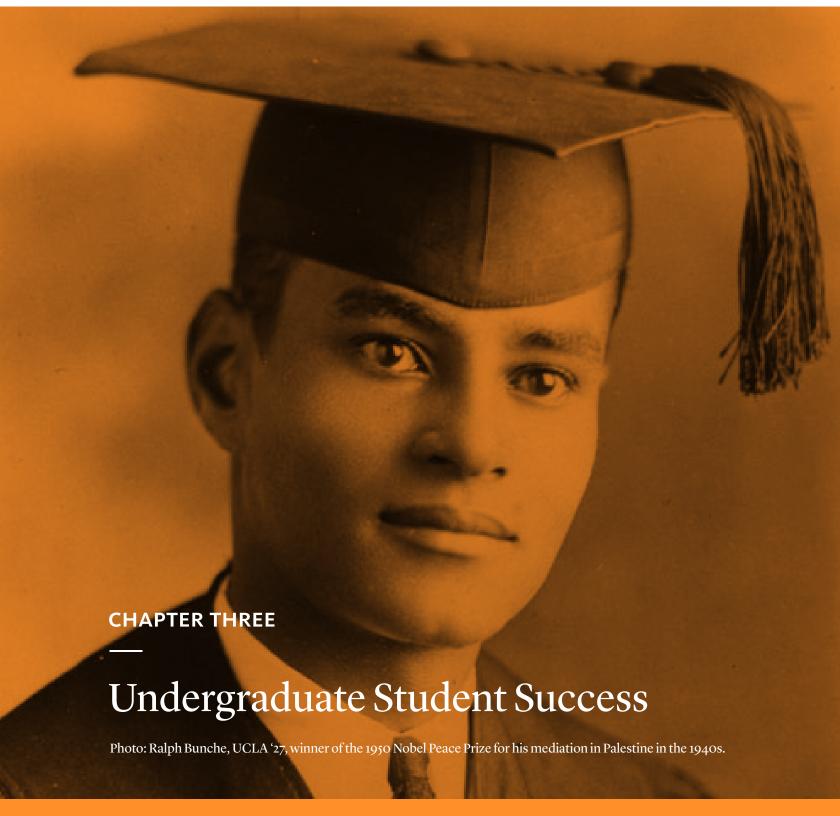
Debt-to-Earnings 2 Years After Graduation			Debt-to-Earnings 5 Years After Graduation						
Campus	% of programs with <10% debt-to-earnings	Min Median N		Max	% of programs with <10% debt-to-earnings	Min	Median	Max	Max
Berkeley	100%	2%	4%	7%	100%	1%	3%	6%	6%
Davis	98%	2%	4%	11%	100%	2%	3%	8%	8%
Irvine	98%	3%	5%	10%	100%	2%	4%	6%	6%
Los Angeles	100%	2%	5%	9%	100%	2%	3%	8%	8%
Merced	75%	4%	8%	11%	100%	3%	4%	5%	5%
Riverside	89%	3%	6%	13%	100%	3%	4%	8%	8%
San Diego	100%	3%	5%	9%	100%	2%	4%	7%	7%
Santa Barbara	98%	3%	5%	11%	100%	2%	4%	7%	7%
Santa Cruz	96%	3%	6%	11%	100%	2%	4%	7%	7%
UC	97%	2%	5%	13%	100%	1%	3%	8%	8%

Data Source: AEO (CA Employment Development Department), student financial aid and degree data

UC's baccalaureate programs graduate students who go on to achieve positive earnings trajectories. It is also important to consider these earnings in the context of any student loan payments graduates might be responsible for making. The University of California's financial aid policy sets its debt manageability threshold at 9 percent. It considers debt that requires anywhere from 5 to 9 percent of a graduate's monthly earnings to be manageable. With median monthly gross earnings at \$3,139 per month and the estimated loan repayment¹ for those taking out loans at \$167 per month, this equates to a 5% debt-to-earnings ratio at two years after graduation. About 97 percent of UC baccalaureate programs systemwide have a debt-to-earnings ratio of 10 percent or less at two years after graduation and 100 percent of them do at five years after graduation.

Some arts, humanities and social science programs have debt ratios that exceed 10 percent 2 years after graduation. This stems from a variety of factors, including the lower average earnings associated with industries in which these graduates tend to work in. (See 3.3.5 for earnings by major and industry in Chapter 3.)

 $^{^{\}rm 1}$ Under a standard ten-year repayment plan at five percent interest



1873

Among the first twelve recipients of UC diplomas would come a U.S. congressman and California governor, a mayor, a bank president, two UC regents, a businessman, an attorney, an engineer, a math professor, a clergyman and a rancher.



1894

Julia Morgan graduates from UC Berkeley with a degree in civil engineering for lack of an archtecture department. She would become the first woman architect licensed in California.

UNDERGRADUATE STUDENT SUCCESS

History

From the first twelve diplomas granted by the University of California in 1873 to UC Riverside being recognized as a national leader in African American graduation rates in 2017, the University has a storied history of undergraduate student success in academics, athletics, the arts and the sciences.

Those first twelve, known as the "12 Apostles," were a testament to the breadth of impact the University would later have; among them came a U.S. congressman and California governor, a mayor, a bank president, two UC regents, a businessman, an attorney, an engineer, a math professor, a clergyman and a rancher.

Across the history of UC, there have been many notable undergraduates who have enjoyed great success since earning their UC degrees. Choosing just one from each campus to highlight here is a difficult task. Julia Morgan (UCB 1894), was the first woman architect licensed in California; Ralph Bunche (UCLA 1927), was the first person of color to win the Nobel Peace Prize; Robert Ballard (UCSB 1965), is an oceanographer who discovered the RMS Titanic; Kathryn Sullivan (UCSC 1973), was the first American woman to walk in space; Bruce Beutler (UCSD 1976), won a Nobel Prize in Physiology or Medicine in 2011; Greg Louganis (UCI 1983), is an Olympic gold medal diver and LGBT activist; Tani Cantil-Sakauye (UCD 1984), is the Chief Justice of California; Steve Breen (UCR 1992), is an editorial cartoonist and two-time Pulitzer Prize winner; Daniel Lobato (UCM 2013), is a pilot and first lieutenant in the U.S. Air Force, and benefactor behind the Lobato Endowed Scholarship Fund at UC Merced. Of course, there are many more stories of undergraduates with extraordinary success, but individuals alone do not tell the story of UC student success.

Goals

The University of California seeks to enable all entrants to complete their undergraduate degrees in a timely fashion and to ensure that their education prepares them to be the next generation of leaders for California, the nation and the world. President Napolitano seeks to increase the four-year freshman graduation rate from 66 percent (2013 cohort) to 70 percent by 2030. This would enable an additional 32,000 students to graduate over the next couple of decades.

Improving graduation rates

UC campuses have instituted a wide range of programs to promote the academic success of undergraduates, especially low-income and underrepresented students. These include academic preparation programs, individual student counseling and mentorship opportunities.

By traditional graduation rate measures, UC's undergraduates are highly successful. UC's four-year graduation rates for freshmen have risen significantly over the past 16 years — from 46 percent for the 1997 entering cohort



1904

Engineer and cartoonist Rube Goldberg, inventor of "Rube Goldberg machines", graduates from UC Berkeley's College of Engineering.



1917

UC Davis' first Olympic gold medalist Colby E. 'Babe' Slater graduates from the University Farm School. He would win gold with the 1920 U.S. Olympic Rugby Team.

to 66 percent for the 2013 cohort. The most recent six-year graduation rate, for the 2011 entering cohort, is 84 percent (3.1.1), which increases to 87 percent when including students who transfer to non-UC institutions (3.1.2) and still graduate within six years. In addition, time to degree has steadily improved, with freshman entrants now taking 4.2 years (3.1.8), on average, to graduate.

Transfer entrants have made similar gains, with two-year graduation rates increasing from 37 percent for the 1997 entering cohort to 57 percent for the 2015 cohort (3.1.3). The most recent four-year graduation rate for transfers (2013 entering cohort) is 89 percent and the average time to degree is 2.4 years (3.1.8).

Factors that affect graduation rates

As UC seeks to improve graduation rates, it is important to obtain a better understanding of factors that influence these rates. To assess this, logistic regression analyses were conducted to examine the strength of the relationship between key factors (e.g., Pell status) and graduation rates.

The models pooled freshmen from the 2008, 2009 and 2010 entering cohorts. Multiple cohorts were analyzed to limit the possibility that results could be attributed to any one cohort. The models included variables used in higher education research, which have shown to affect graduation rates. Specifically, campus of enrollment, broad disciplinary area (i.e., Social Sciences, Arts & Humanities, STEM (science, technology, engineering and mathematics) and Other), pre-UC academic characteristics (e.g., SAT/ACT scores and high school GPA), UC academic performance (e.g., first-year GPA) along with demographic characteristics (e.g., first generation status, URG status and Pell status) were included.

Because factors such as high school GPA, first-year college GPA and SAT scores are measured on different scales and have different distributions, these variables were standardized in the analysis. The standardized units (one unit equals one standard deviation) represent a student's performance relative to the population, allowing the comparison of the impact of a hypothetical change in one variable compared to the same relative change in another. After controlling for entry year, campus (e.g., UC Berkeley), and broad disciplinary area, evidence suggested that a one-unit increase in first-year UC GPA was associated with a 48 percent increase ¹ in the odds that a student would graduate within four years. A one-unit increase in high school GPA was associated with a 15 percent increase in the odds that a student would graduate within four years.

SAT/ACT test scores have less of a relationship with four-year graduation rates compared to high school GPA and first-year UC GPA. Specifically, a one-unit increase in SAT/ACT scores is associated with an eight percent increase in the odds that a student would graduate within four years.



1927

Ralph J. Bunche graduates from UCLA. Bunche would go on to win the 1950 Nobel Peace Prize. He was the first African American and first person of color to be so honored.



1942

Harvey Akio Itano, is chosen as UCB University Medalist but is unable to attend his own graduation ceremony because of his confinement to an internment camp as a Japanese American.

¹ Standardized regression coefficients were used in this analysis.

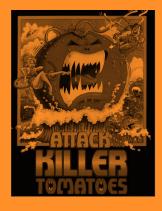
While not presented in this chapter, results for six-year graduation rates were very similar to four-year graduation rates. Early academic success, specifically as it relates to first-year UC GPA, is a key factor for focus when seeking to improve graduation rates.

Academic preparation is only one factor that influences student success. Research has shown that engagement is also an important component. Engagement is often used to describe behaviors of students who are active learners, such as interacting with faculty members and contributing to class discussions. Research has also demonstrated that student engagement is correlated with the number of credits attempted and the number of credits earned, which are key factors for on-time degree completion. ²

Evidence from the UC Undergraduate Student Experience Survey (UCUES), sent out biannually to all UC undergraduates, suggests that UC students overall are engaged with their education, although there is room for improvement. In 2016, more than half of students reported that they contributed to class discussions at least somewhat often, and more than a third went beyond required coursework somewhat often in a course they found interesting (3.3.2). About one-third of students at least somewhat often communicated with the instructor outside of class about issues and concepts derived from a course.

To determine if student engagement is related to academic performance, data from UCUES were merged with data on student outcomes. While the previous analyses focused on four-year graduation rates, evidence did not suggest that student engagement plays a significant factor in four-year graduation rates. This analysis examined the relationship between student engagement and first-year GPA, a key predictor of four-year graduation rates. Evidence suggested that contributing to a class discussion and doing more work than required in a class that one finds interesting were related to an increase in first-year UC GPA. This effect was found after controlling for entry cohort, survey administration year, campus of enrollment, student discipline, high school GPA, SAT/ACT scores, Pell status, first generation status and URG status.

While not a major factor, student engagement was also shown to be related to student success, specifically as it relates to first-year GPA.



1978

UC San Diego alumni John DeBello and Steve Peace and UC Davis alum Costa Dillon unleash the sci-fi spoof "Attack of the Killer Tomatoes" on an unsuspecting world.



1983

Nobel Laureate Carol W. Greider graduates from UC Santa Barbara. She would go on to win the 2009 Nobel Prize in Physiology or Medicine.

¹ McCleeney, K., Marti, N.C. & Adkins, C. (2018). Student Engagement and Student Outcomes: Key Findings from CCSSE Validation Research. Retrieved from https://files.eric.ed.gov/fulltext/ED529076.pdf on April 12, 2018.

² See footnote 1.

³ Like the graduation rate model, this OLS model used data from the 2008, 2009 and 2010 entry cohorts. We kept the first time students completed UCUES in order to have one record per person.

⁴ It should be noted that academic factors such as high school GPA and SAT/ACT scores were found to be more predictive of first year GPA when compared to UCUES student engagement items. Many factors could contribute to this finding including personality characteristics not measured (e.g., extroversion).

This chapter will present data on student success by demographic predictors. While the analyses above found that demographics are generally not strong predictors of success after controlling for academic predictors, it is important to note that the analyses above did not test how different factors interact. For instance, an underrepresented student may be more likely to attend a poorly performing high school. Being both low-income and first-generation will often affect a student more than just having one of these characteristics, even though they are closely correlated.

While the previous analysis mostly focused on pre-UC factors (e.g., high school GPA and SAT/ACT scores), the student experience at UC also plays a significant role in student success. Factors such as advising, financial support, and the availability of classes also contribute to student success. Recognizing the importance of these factors and early student succes for on-time graduation, UC campuses are making efforts to improve first-year student success. Many campuses offer first-year seminars to assist students with the transition from high school to UC. Seminars help students build a sense of community, understand the expectations of UC, engage with faculty and learn how to leverage campus resources. Campuses are also making advising mandatory for first-year students. Early advising helps students choose the right classes and obtain support. To help students understand the role of research in education, many UC campuses offer first-year students the opportunity to work on a research project with a faculty member. Systemwide, UC recently launched the First-Generation Faculty Initiative which connects first generation students to both faculty and staff mentors.

Undergraduate outcomes

The number of undergraduate degrees awarded by UC over the past 15 years has grown by 55 percent, from about 32,700 degrees in 1999–2000 to about 50,700 degrees in 2015–16 (3.3.1). Increases in the size of the entering freshman class and improving graduation rates have contributed to this growth. More than one-third of the undergraduate degrees awarded by UC in 2015–16 were in STEM disciplines.

Four years after graduation, more than one-quarter of bachelor's degree recipients have enrolled in graduate or professional programs.

UC alumni working in California surpass the typical earnings of other California bachelor's degree recipients (aged 25 and over), by six years after graduation. The earnings trajectory of UC alumni increases rapidly — doubling what they were earning at two years after graduation by ten years after graduation, on average. Economic success is prevalent for all socioeconomic groups, including students whose families qualified for federal Pell Grants. Within seven years of graduation, the majority of Pell Grant recipients earn an average income higher than their parents' combined incomes during the time those students attended UC (approximately \$50,000).



1983

Greg Louganis, four-time Olympic gold medalist in diving, actor and LGBT activist graduates from UC Irvine with a theater degree.



2004

Kathryn Sullivan, UC Santa Cruz alum and the first American woman to walk in space, is inducted into NASA's Astronaut Hall of Fame. UC alumni are not only earning competitive salaries, more than half are working in key industries such as health care, K-12 education, finance & insurance, public administration, social assistance, higher education, engineering, and internet and computer systems. Many alumni work in industries that closely align with the major they chose. By ten years after graduation, 56 percent of engineering & computer science majors work in engineering, manufacturing, or internet and computer systems; 30 percent of life science majors work in health care and 34 percent of arts & humanities majors are working in K-12, higher education, or performing arts and entertainment.

Looking forward

Building on UC's record of success, there are continued systemwide and campus efforts to improve undergraduate outcomes. Through the application of state funds, UC hopes to make additional progress in closing equity gaps in graduation rates between racial/ethnic groups.

For more information

The March 2018 Performance Outcomes report submitted to the legislature: ucop.edu/operating-budget/_files/legreports/17-18/Performance_Outcome_Measures_LegRpt-3-12-18.pdf

A summary of UC's innovations in education to improve student outcomes: ucop.edu/institutional-research-academic-planning/_files/innovation_in_education_2-27-15.pdf

UC's undergraduate alumni outcomes, including employment industries and earnings: universityofcalifornia.edu/infocenter/uc-undergraduate-alumni-outcomes

UC's report on Advising Strategies to Support Timely Graduation: ucop.edu/institutional-research-academic-planning/_files/Advising_strategies.pdf

Degrees awarded at UC by campus, discipline and degree type: universityofcalifornia.edu/infocenter/degrees-awarded-glance

Total degrees awarded by degree type, campus, gender and race/ethnicity: universityofcalifornia.edu/infocenter/degrees-awarded-data

Graduation rates by campus, gender, Pell, residency status, race/ethnicity and other factors: universityofcalifornia.edu/infocenter/ug-outcomes



2009

UC Merced graduates its first class of students.
Michelle Obama delivers the commencement address, encouraging the graduates not to fear adversity.

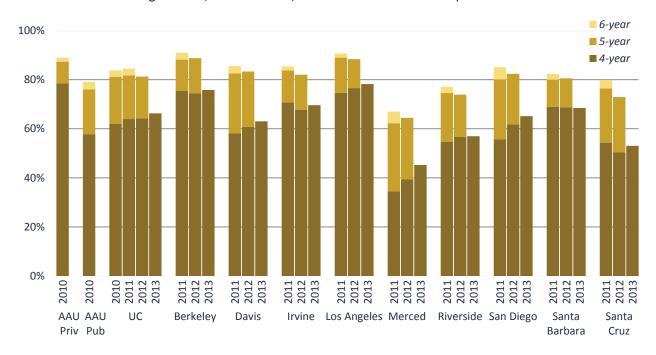


2017

UC Riverside is recognized as a national leader in African American graduation rates.

Over 60 percent of UC freshmen graduate within four years, a higher rate than comparable AAU public universities.

3.1.1 Freshman graduation rates
UC and comparison institutions
Cohorts entering fall 2011, 2012 and 2013; fall 2010 cohort for AAU comparison



Source: UC Data Warehouse and IPEDS¹

UC's six-year graduation rate is higher than that of comparable AAU public institutions. UC's four-year graduation rates for freshmen have risen significantly over the past 15 years, from 46 percent for the 1997 entering cohort to 66 percent for the 2013 cohort. This improvement is due to factors including campus programs supporting four-year completion, improvements in academic preparation of incoming students and the current cost of a UC education, all of which motivate students to complete their degrees.

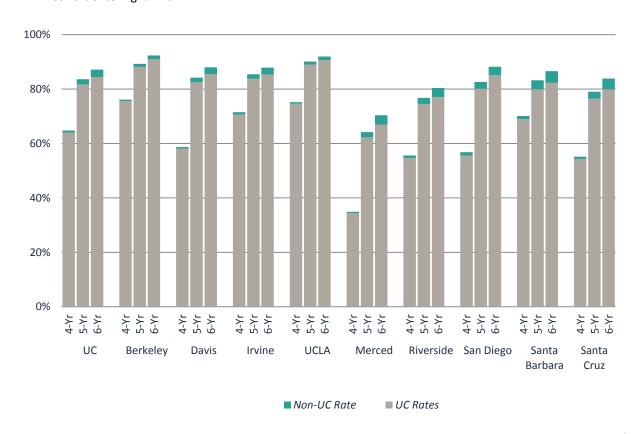
UC's freshman six-year graduation rate is 84 percent, which is almost a five percent increase over the past twenty years.

More information on trends in UC freshman graduation rates can be found at: universityofcalifornia.edu/infocenter/ug-outcomes.

¹ Comparison IPEDS data are available for more limited years. The AAU comparison institutions are in the data glossary. AAU comparison is for the 2010 cohort, the most recent data available. Graduation rates are weighted by total cohort size. Institutions with missing data are excluded for that year. Freshmen are those students who entered UC directly from high school and who have not matriculated at another postsecondary institution prior to enrollment. UC statistics give credit to the originating campus for inter-UC campus transfers.

The six-year graduation rate of UC freshmen is close to 90 percent when students who finished their degree at a non-UC institution are included.

3.1.2 Freshman graduation rates, including those who graduated from a non-UC institution Universitywide and UC campuses Cohort entering fall 2011



Source: UC Data Warehouse and the National Student Clearinghouse¹

The extended graduation rate of students who begin their studies as freshmen at UC includes those who transferred to a non-UC institution and completed their bachelor's degree within four, five or six years. By this measure, UC's overall six-year graduation rate is about 87 percent. The effect of the extended graduation rate varies by UC campus, with Berkeley having fewer students who earn a degree outside of the UC system, while the six-year rates at Merced, Riverside, Santa Barbara and Santa Cruz improve by as much as 4 percentage points when students who complete their degree at a non-UC school are counted.

¹ Intercampus transfers within UC are counted as graduates of their originating UC campus. In this graph, non-UC rates only include those who transferred to non-UC institutions and graduated with a bachelor's degree.

Nearly 60 percent of transfer students graduated within two years.

3.1.3 Transfer graduation rates
Universitywide and UC campuses
Cohorts entering fall 2013, 2014 and 2015



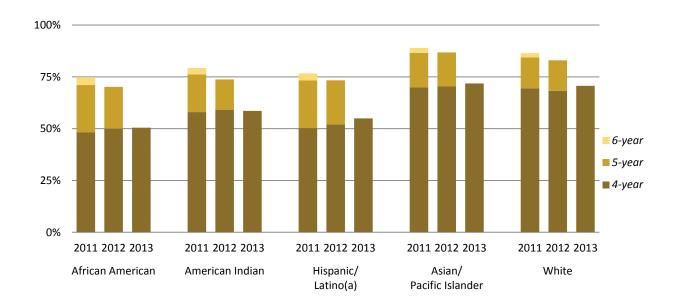
Source: UC Corporate Student System¹

The two-year graduation rate for transfer students has been relatively consistent over the past three cohorts. The two-year graduation rate for transfers is currently at 57 percent, the highest since 1995. The four-year rate is 89 percent, compared to 84 percent for the six-year freshman graduation rate. More information on trends in UC transfer graduation rates can be found at: universityofcalifornia.edu/infocenter/ug-outcomes.

¹ Comparison data on graduation rates for transfer students are not available. UC statistics give credit to the originating campus for inter-UC campus transfers. Merced opened in 2005.

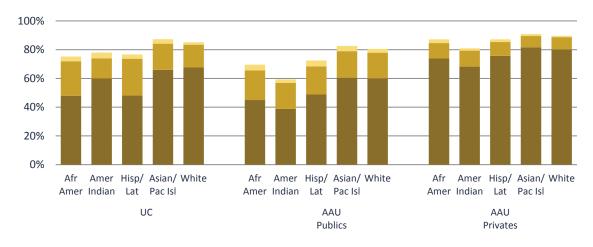
Underrepresented group (URG) students at UC graduate at higher rates when compared to URG students at other AAU public institutions.

3.1.4 Freshman graduation rates by race/ethnicity
Universitywide, AAU public and AAU private
Cohorts entering fall 2010, 2011, 2012 and 2013



More information on trends in UC freshman graduation rates by campuses and demographic detail can be found at: universityofcalifornia.edu/infocenter/ug-outcomes

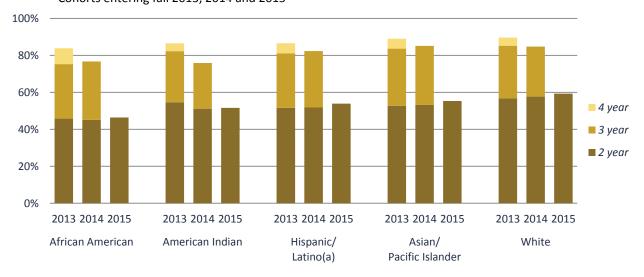
UC and comparison institutions, cohort entering fall 2010



Source: UC Data Warehouse and IPEDS.

Regardless of race/ethnicity, transfer students graduate at a high rate and the rate for two-year graduates is rising.

3.1.5 Transfer graduation rates by race/ethnicity
Universitywide
Cohorts entering fall 2013, 2014 and 2015



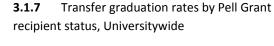
Source: UC Data Warehouse.

More information on trends in UC transfer graduation rates by campus and demographic detail can be found at:

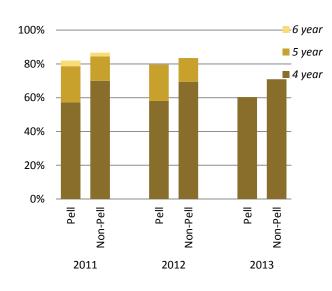
university of california. edu/infocenter/ug-outcomes.

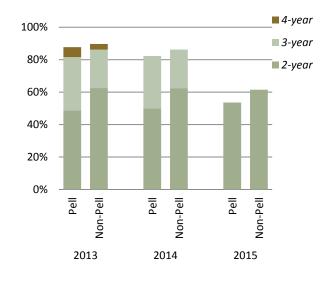
Over 80 percent of Pell students graduate within six years.

3.1.6 Freshman graduation rates by Pell Grant recipient status, Universitywide Cohorts entering fall 2011, 2012 and 2013



Cohorts entering fall 2013, 2014 and 2015





Source: UC Data Warehouse. Pell Grant recipients are those who received a Pell Grant at any time during their time at UC.

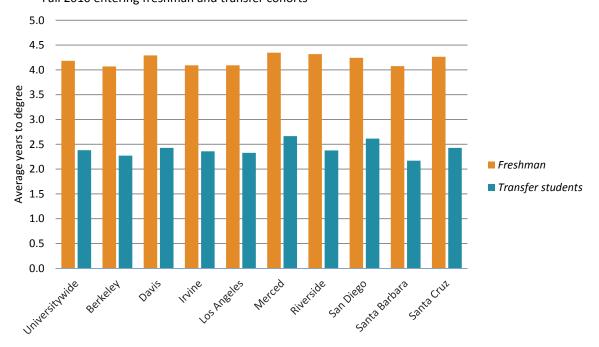
Pell Grant recipients graduate at rates comparable to non-Pell recipients: 82 percent and 87 percent, respectively. Although there is a 13 percentage point gap at the four-year mark between Pell recipients (57 percent) and non-Pell recipients (70 percent), this gap is reduced to five percentage points at the six-year mark.

For the 2013 cohort, Pell and non-Pell Grant recipients graduated at comparable rates of 88 percent and 90 percent, respectively. The two-year graduation rate gap between Pell and Non-Pell Grant recipient transfer students was cut in half between the 2013 and 2015 cohorts, from 14 percentage points to 7 percentage points.

More information on trends in graduation rates can be found at university of california. edu/infocenter/ugoutcomes.

As graduation rates rise, undergraduate students at UC are also graduating more quickly.

3.1.8 Average time to degree Universitywide and UC campuses Fall 2010 entering freshman and transfer cohorts



Source: UC Corporate Student System. Average time to graduation includes only students who graduated from UC within seven years.

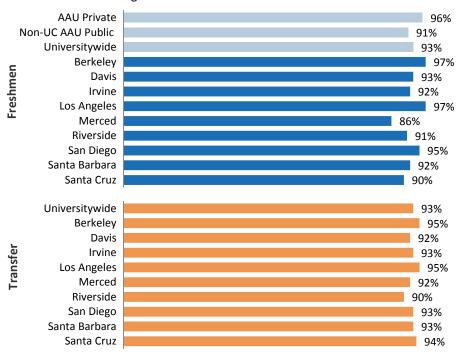
The average time to earn a bachelor's degree at UC has decreased fairly steadily since 1994. Students entering as freshmen take an average of 4.2 years, about 7 percent less time than in 1994.

For students entering as transfers, the average time to degree is 2.4 years, about 12 percent less than in 1994. More information on trends in UC time to degree can be found at

universityofcalifornia.edu/infocenter/ug-outcomes.

Freshman retention rates are high, but there is room for improvement. Transfer retention rates are also high and very close to freshman retention rates.

3.2.1 First-year retention rates UC and comparison institutions Cohorts entering fall 2016



Source: Freshman data from IPEDS¹ Transfer data from UC Data Warehouse. Comparison data on retention rates are not available for transfer students.

Improving first-year retention is key to raising graduation rates. The current universitywide retention rate is 93 percent. This is higher than non-UC AAU institutions (91 percent), but lower than AAU private institutions (96 percent).

Students who leave can be divided into two groups: those who leave UC in good academic standing (i.e., GPA \geq 2.0) or transfer to another UC campus, and those who leave in poor academic standing (i.e., < 2.0).

For students leaving in good academic standing, some campuses are expanding honors programs or providing opportunities for undergraduate research as early as the freshman year.

For those leaving in poor academic standing, some UC campuses are using Summer Bridge or early orientation programs so that students have a jump-start on a smooth transition to campus life. Campuses are also looking into housing and residential programs and cohort programs to integrate undergraduates into college.

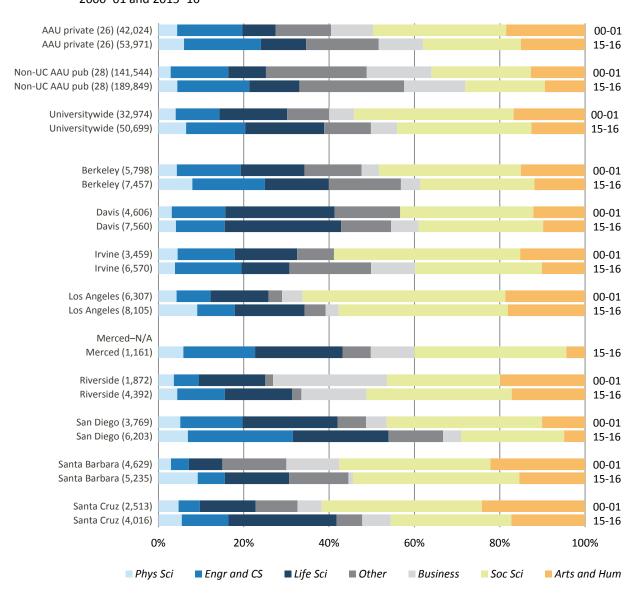
Like entering freshmen, transfer students benefit from a smooth transition to campus in their first year. Several UC campuses have summer programs to support transfer students.

More information on trends in UC retention rates can be found at: universityofcalifornia.edu/infocenter/ug-outcomes

¹ Freshmen are first-time, full-time, degree-seeking students from the fall who enroll again in the next fall term. The most recent available comparison data available from IPEDS is for 2015.

Social science, life sciences, and arts and humanities are the largest segments of bachelor's degree recipients.

3.3.1 Undergraduate degrees awarded by discipline UC and comparison institutions 2000–01 and 2015–16

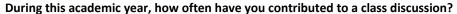


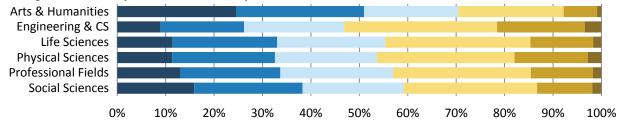
Source: IPEDS

About 39 percent of all undergraduate degrees awarded by UC in 2015–16 were in science, technology, engineering and mathematics (STEM) fields. This is higher than the proportion at AAU public and private comparison institutions (33 and 35 percent, respectively).

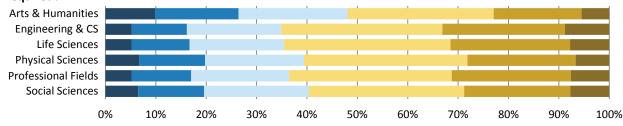
The proportion of students engaged in academic activities varied by discipline. Students in Arts & Humanities reported greater engagement in academic activities compared to students in other disciplines.

3.3.2 Student responses to questions about areas of engagement, by discipline Universitywide Spring 2016

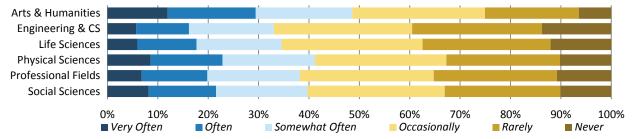




During this academic year, how often have you found a course so interesting that you did more work than was required?



During this academic year, how often have you communicated with the instructor outside of class about issues and concepts derived from a course?



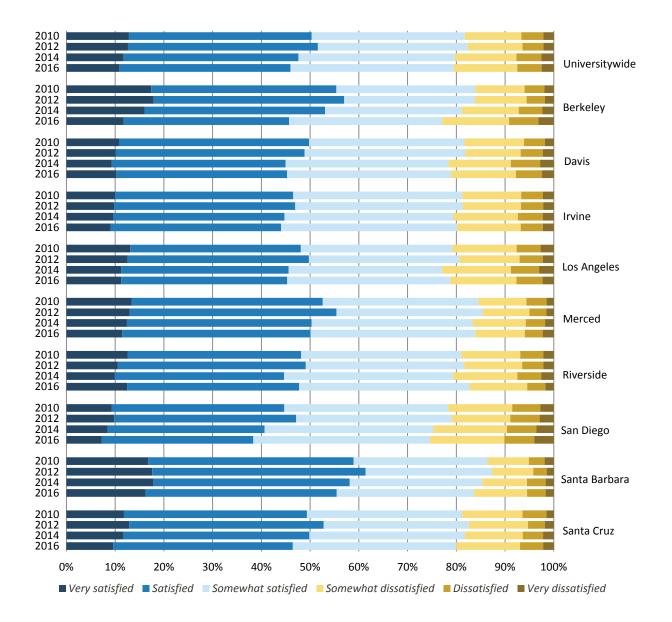
Source: UCUES

About 70 percent of students in Arts & Humanities reported that they at least somewhat often contributed to class discussion, compared to 47 percent of students in Engineering & Computer Sciences and between 50 to 60 percent of students in other majors. About half of the students in Arts & Humanities reported that they at least somewhat often went beyond required coursework in a class

they found interesting, compared to between 30 to 40 percent of students in other majors. About half of the students in Arts & Humanities reported that they at least "somewhat often" communicated with the instructor outside of class about issues and concepts derived from a course, compared to 41 percent of students in Physical Sciences, and between 30 to 40 percent of students in other majors.

About 80 percent of undergraduate students reported satisfaction in their overall academic experience.

3.3.3 Student satisfaction with overall academic experience Universitywide and UC campuses Spring 2010 to 2016



Source: UCUES. Note that unlike previous Accountability Reports, which were limited to seniors, this data includes all UCUES respondents.

For the UC system overall and for most campuses, the percent of students who were satisfied (somewhat through very satisfied) has remained as high as about 80 percent. However, students' satisfaction dropped slightly between 2012 and 2016. Specifically, fewer students indicated that they were satisfied or very satisfied with their overall academic experience.

Across disciplines, undergraduate degree recipients tend to double their earnings between two and ten years after graduation.

3.3.4 Inflation-adjusted average and median alumni wages by selected majors, two, five and ten years after graduation
Universitywide
2000 to 2014 graduating cohorts, combined

		After two years		After five years		After ten years		
		Mean	Median	Mean	Median	Mean	Median	
Arts	Arts	\$31,650	\$28,240	\$45,303	\$40,369	\$63,130	\$53,108	
& Humanities	English/Literature	\$35,650	\$33,221	\$51,265	\$45,307	\$71,193	\$59,663	
	Foreign Language	\$35,462	\$32,114	\$50,643	\$44,726	\$73,422	\$60,389	
	History	\$36,344	\$32,813	\$55,440	\$46,460	\$77,643	\$64,032	
	Other Humanities	\$34,766	\$32,023	\$47,153	\$43,120	\$59,112	\$54,970	
	Philosophy	\$36,163	\$31,887	\$54,772	\$46,555	\$83,589	\$67,312	
Professional	Nursing	\$83,772	\$84,635	\$101,935	\$101,714	\$125,097	\$120,927	
	Business	\$54,446	\$49,834	\$73,516	\$65,897	\$107,207	\$89,375	
	Agriculture	\$52,588	\$50,892	\$71,251	\$66,085	\$100,567	\$87,159	
	Architecture	\$46,360	\$44,780	\$61,290	\$57,129	\$76,250	\$70,906	
STEM	Computer Science	\$79,790	\$73,062	\$100,764	\$89,195	\$134,664	\$113,076	
	Engineering	\$69,537	\$66,477	\$90,822	\$83,710	\$125,612	\$108,625	
	Physics	\$52,213	\$49,085	\$71,948	\$67,911	\$104,890	\$90,460	
	Biology	\$38,632	\$37,068	\$61,768	\$54,604	\$102,948	\$83,636	
	Chemistry	\$44,015	\$42,957	\$60,443	\$55,966	\$100,838	\$81,764	
	Communications	\$42,099	\$40,095	\$61,909	\$55,220	\$87,838	\$75,008	
	Legal Studies	\$46,468	\$42,857	\$69,825	\$60,457	\$105,445	\$86,483	
	Mathematics	\$53,949	\$48,846	\$72,636	\$64,117	\$94,872	\$82,869	
Social								
Sciences	Economics	\$53,396	\$49,085	\$73,741	\$65,112	\$109,122	\$88,445	
	Political Science	\$41,569	\$38,300	\$65,114	\$55,607	\$99,191	\$82,699	
	Geography	\$41,715	\$38,144	\$61,026	\$55,801	\$87,254	\$72,795	
	Psychology	\$36,222	\$33,600	\$54,391	\$48,520	\$77,876	\$66,295	
	Anthropology	\$34,311	\$30,491	\$48,968	\$43,437	\$71,125	\$59,649	
	Sociology	\$38,281	\$35,945	\$55,334	\$49,679	\$75,597	\$65,298	
All Majors		\$45,053	\$40,488	\$64,190	\$56,362	\$92,889	\$77,453	

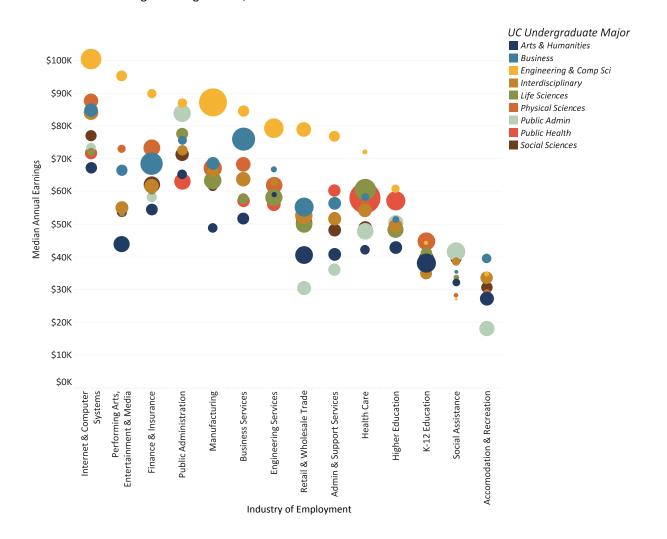
Source: California Employment Development Department and UC Corporate Student System. Includes alumni employed in the state of California only. Amounts are inflation-adjusted to 2016 dollars.

Alumni employment data provide evidence of UC's contribution to the California economy and its role as an engine of economic mobility. UC enrolls a greater percentage of low-income students (from the bottom 20 percent of the income distribution) than other four-year institutions in California. Recent data made available through a partnership with the Equality for Opportunity Project show that more than one in three UC alumni who come from the bottom 20 percent of income rise to the top 20

percent of income as adults, based on the entering cohorts of 1999 to 2005. Moreover, comparisons using this national data show UC bachelor's degree recipients working in California tend to earn about 20 percent more than UC graduates who work outside of California. More information on the Equality of Opportunity Project can be found at: ucop.edu/institutional-research-academic-planning/_files/CLIMB-a-mobility-analysis.pdf

Engineering and computer science majors tend to earn more than other UC undergraduate alumni, but how much UC alumni make also depends on the industry.

3.3.5 Median alumni wages by industry of work for selected majors, five years after graduation Universitywide 2000 to 2011 graduating cohorts, combined



Note: The size of bubble corresponds to percentage of alumni within majors employed in the industry. The largest bubble is 36% and the smallest is <1%.

Source: California Employment Development Department and UC Corporate Student System. Includes alumni employed in the state of California only. Amounts are inflation-adjusted to 2016 dollars.

UC graduates go on to work in a wide range of industries in California. A large share of Engineering and Computer Science majors work in the Internet & Computer Systems and Manufacturing industries with median salaries of about \$100K and \$87K, respectively. Business majors are likely to work in

the business services, finance & insurance industries where median earnings reach \$70K to \$80K. Arts & Humanities graduates are most likely to work in K-12 education, where median salaries are much lower, at about \$40K at five years after graduation.



1873

Trustees of Toland Medical College in San Francisco transfer the institution to the regents, thereby forming the Medical Department of the University of California, the University's first professional school. Twenty-seven students enroll in the first class. The medical department of the University of California would later become UCSF.



1874

Lucy Field Wanzer, the future first female graduate of UCSF, matriculates as women are now admitted to medical department.

GRADUATE ACADEMIC AND GRADUATE PROFESSIONAL STUDENTS

History

Within five years of the University of California opening its doors, the first professional school began enrolling graduate students; Toland Medical College joined the University in 1873 and would become the University of California, San Francisco. UC Hastings, California's first law school, would follow soon after in 1878. In 1881, within the first twenty years of the University's existence, UC established the first dental school west of the Mississippi.

With the charge by the California Legislature in 1880 to establish a program "providing for instruction and research in viticulture and enology," UC was instrumental in creating California's wine industry. In 1935, UC graduate student Maynard Amerine joined the faculty at UC Davis and later became known as the father of American wine for his research.

Over the decades, scores of graduate programs in all disciplines would be founded at all UC campuses, some of the newest being the School of Nursing at UC Irvine, Public Health at UC Merced, Science Communication at UC Santa Cruz and Geotechnical Engineering at UC San Diego.

Since 2015, the Grad Slam competition has invited UC graduate students to communicate their research. The winning presentations show the diversity and depth of research that is a hallmark of the University's graduate programs: "A stormwater solution" (Joseph Charbonnet, UCB, 2018 winner); "Making mental health more engaging and accessible" (Leslie Rith-Najarian, UCLA, 2017 winner); "Renewable nanopower: the new age of earth abundant electronics" (Peter Byrley, UCR, 2016 winner); "Stem Cells: how to mend a broken heart" (Ashley Fong, UCI, 2015 winner).

Goals

California's Master Plan for Higher Education gives the University of California the responsibility of enrolling and preparing graduate academic and graduate professional students to help meet the needs of California and the nation and to further the UC mission of teaching, research and public service. Thus, reviving adequate support for the University of California is important as its graduate education enterprise fuels California's role as a national and international leader.

UC's goals for graduate education are to offer outstanding degree programs, advance research, support undergraduate instruction and prepare students to join a professional workforce. UC produces the leaders of the



1878

UC Hastings is founded as the law department of the University of California, becoming both the first UC law school and the first law school in California.



1935

While working on his doctoral degree at UC Berkeley, Maynard Amerine joins UC Davis. Amerine becomes known as the father of American wine for his research.

future—the teachers, artists, thinkers, innovators, scientists, inventors, doctors, lawyers and nurses; it creates an environment of exploration and discovery that stimulates innovation and invention. UC's internationally renowned graduate education enterprise serves to drive California's economy, allowing it to grow, create jobs and offer its residents the standard of living for which the state is well known.

Types of graduate degrees

UC awards both graduate academic degrees and graduate professional degrees.

Graduate academic degrees — These include academic doctoral and academic master's degrees in education, physical sciences, social sciences, arts, humanities and engineering/computer science. Other doctoral degrees are offered in various disciplines (such as EdD in education, DrPH in public health, etc.). The largest proportion of graduate academic degrees awarded at UC is in the STEM fields—science, technology, engineering and mathematics. In 2015–16, more than two-thirds of UC graduate academic degrees were awarded in STEM fields.

Graduate professional degrees — UC's professional degrees include professional master's and professional practice degrees in fields such as law, medicine, nursing, business, education, architecture, public policy and the arts. The graduate professional category includes professional master's degrees (e.g., M.B.A., M.Ed.) and professional practice degrees (e.g., J.D., M.D.). In the field of medicine, UC offers the nation's largest instructional program in health care and health sciences.

The University maintains multiple funding models for its graduate professional programs. Many state-supported programs (i.e., M.B.A., law, medicine, etc.) assess professional degree supplemental tuition (PDST), which allows the professional schools to ensure their excellence, accessibility, inclusiveness and affordability. Programs assessing PDST commit substantial resources to grants and scholarships, reducing the amount that students pay. Since PDST began in 1994, both the number of professional degree programs that charge PDST and the amount charged have increased.

Other UC graduate professional programs, primarily master's programs, follow a self-supporting funding model. The largest are business and management programs. These programs receive no state support and are funded entirely by revenues generated by the program and other non-state revenues. Self-supporting programs allow the University to serve additional students beyond those supported through state resources. They also fulfill higher education and workforce needs. Many self-supporting programs serve nontraditional populations such as full-time employees, mid-career professionals, international students with specialized goals and students whose education is supported by their employers. Many programs are offered through an alternative mode of delivery, such as online or hybrid instruction, alternative scheduling or at off-campus locations.



1948

Putting the vets in veterinary: Of the 42 students in the first class of UC Davis' School of Veterinary Medicine, 41 had served in World War II.



1968

Berkeley optometry student volunteers travel to Tijuana, Mexico, beginning the school's history of providing humanitarian eye care to underserved populations.

Graduate enrollment share

UC's graduate education enterprise enrolls over 56,000 students, with doctoral students representing the largest number (27,000), then professional (22,000) and then master's (7,000). Despite its size, UC's graduate education enterprise represents a smaller share of its total enrollment than that of its peers. Graduate students comprise 21 percent of total student enrollment at UC, which is lower than the proportion of graduate enrollment among other Association of American Universities public (27 percent) and private (55 percent) peer institutions. In addition, while the graduate share of UC's total enrollment has remained relatively flat over the last decade at 21 percent, the doctoral enrollment percentage has declined, while the graduate professional percentage has risen steadily.

Supporting diverse career paths and making research accessible

To promote and highlight the work of master's and doctoral students across UC campuses, UC holds an annual research communication competition called UC Grad Slam. The event challenges its ten participants—the winners of each campus's own Grad Slam — to distill years of academic research into a three-minute presentation free of technical lingo. The Grad Slam encourages students to communicate their research in a clear and compelling way to non-specialists — a skill that employers need and value. Campuses provide workshops and resources for students to develop this skillset. The contest also demonstrates to the public that UC research benefits their lives in both ordinary and quite extraordinary ways. The winner of Grad Slam 2018 is UCB student Joseph Charbonnet, whose research describes a simple method for using sand to make stormwater runoff safe for drinking.

Career Pathways Survey

In 2017, UC launched the PhD Career Pathways Survey, which is a partnership between the University of California and the Council of Graduate Schools. The survey will be conducted in two phases through 2019, and its purpose is to better understand the career preparation and pathways of PhD students and alumni. While the Council of Graduate Schools is specifically focused on humanities and STEM PhDs, the University of California is collecting data from doctoral students and alumni in all disciplines.

Initial results showed high levels of employment and satisfaction with UC PhD programs. Ninety-six percent of respondents were working in a job for pay, 76 percent indicated they were working in a field closely related to their degree and nearly 60 percent were employed at a higher education institution. Seventy-four percent of respondents stated that their PhD training prepared them well for their current job, 78 percent stated that they would pursue a PhD in the same field and 80 percent indicated that they would choose the same institution for their PhD education.



1971

Billy Collins received his Ph. D. in romantic poetry from UC Riverside. He is the celebrated author of more than 10 volumes of poetry and was U.S. Poet Laureate from 2001 to 2003.



1977

UC Berkeley grad student Bill Joy releases Berkeley UNIX and encourages hackers to improve on it, creating a new paradigm for software development and distribution to be known as Open Source.

Equity and inclusion: Expanding academic pathways

A more diverse community of scholars at all levels has been a longstanding goal for UC, but progress at the doctoral, postdoctoral and faculty levels has been slow. UC's difficulties reflect challenges both in enrolling individuals from underrepresented groups in doctoral programs and in attracting and hiring them as postdoctoral scholars and faculty. Systemwide initiatives aimed at increasing the diversity of UC's academic community include:

UC LEADS – The University of California Leadership Excellence through Advanced DegreeS program prepares promising UC undergraduate students for advanced education in science, technology, engineering and mathematics (STEM) fields. The program prepares underrepresented UC undergraduate students for doctoral education opportunities at a UC campus. From its inception in 2000–01 through 2014–15, 785 scholars participated in UC LEADS. Given the importance of gender and ethnic equity within STEM-based doctoral programs, it is notable that half of these scholars are female and half are from underrepresented groups. Of the first 12 cohorts, 98 percent earned undergraduate degrees and 70 percent are either currently enrolled in graduate school or have earned graduate degrees. Twelve UC LEADS alumni are tenure-track faculty, including four at UC.

UC-HBCU Initiative – The University of California-Historically Black Colleges and Universities (UC-HBCU) Initiative was established to increase the number of African Americans completing PhDs at UC by investing in relationships between UC faculty and HBCUs. The program has raised UC's profile within the HBCU community and facilitated faculty research collaborations in addition to enrolling and retaining students. More information about the UC-HBCU Initiative is presented in Chapter 7.

University of California President's Postdoctoral Fellowship Program (PPFP) – The PPFP program was established to encourage outstanding women and underrepresented PhD recipients to pursue academic careers at UC. The program offers postdoctoral research fellowships, professional development and faculty mentoring to outstanding scholars in all fields whose research, teaching and service will contribute to diversity and equal opportunity at UC. More information about the PPFP program is presented in Chapters 5 and 7.

Looking ahead

The University continues to develop programs to enhance the graduate student experience. UC's overall excellence rests on the strength and scope of its graduate programs. Unlike undergraduate enrollment planning, based on California's Master Plan, graduate enrollment planning includes the assessment of state and national



1980

African American activist and co-founder of the Black Panther Party Huey P. Newton earns a Ph.D. in history of consciousness at UC Santa Cruz.



2002

The UC San Diego School of Pharmacy and Pharmaceutical Sciences, the only public school of pharmacy in Southern California, enrolls its first class of 25 Doctor of Pharmacy (Pharm.D.) students.

needs, faculty expertise, program quality (which includes international competitiveness) and financial support. Over the last 50 years, as the University accommodated California's burgeoning high school graduates, undergraduate enrollment growth has far outpaced graduate enrollment growth. As a result, the proportion of graduate students to undergraduates on the general campuses has decreased from about 30 percent in the 1960s to 21 percent today. Given the critical contributions of graduate students to the University's teaching and research mission and their role as innovation drivers, this change is notable and it places UC well below its peer institutions.

For more information

UCOP Graduate Studies: ucop.edu/graduate-studies

Time to doctorate at UC: universityofcalifornia.edu/infocenter/time-to-doctorate

Doctoral completion rates: university of california. edu/infocenter/doctoral-rates

UC Grad Slam: gradslam.universityofcalifornia.edu

UC LEADS: ucleads.org/

UC-HBCU Initiative: ucop.edu/uc-hbcu-initiative/index.html

President's Postdoctoral Fellowship Program: ppfp.ucop.edu/info/index.html

UCOP Research and Graduate Studies: ucop.edu/research-graduate-studies



2004

The UC Program in
Medical Education (UC
PRIME) launches at UC
Irvine School of Medicine,
to help serve the needs of
underserved populations
in California's rural and
urban communities.

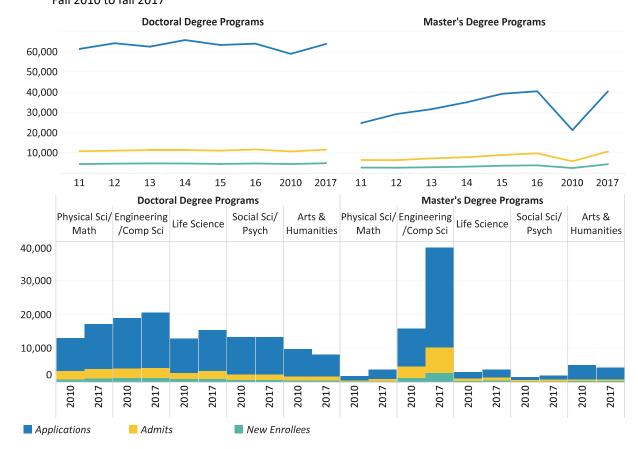


2010

The first classes, with eight doctoral students and 25 masters degree students, start at the Betty Irene Moore School of Nursing at UC Davis.

Universitywide graduate academic applications have increased substantially over the last eight years, while admits and new enrollments have remained relatively flat.

4.1.1 Graduate academic applications, admits and new enrollees by degree program and citizenship Universitywide
Fall 2010 to fall 2017



Source: UC Corporate Student System. A small number of professional doctoral programs are also included in these data. Universitywide applications and admits are duplicated in this report since students often apply to more than one campus. 1

The demand for UC academic masters and doctoral programs has increased steadily over the past eight years. Applications for admission grew from 80,000 in 2010 to 104,000 in 2017. Nearly all of this increased demand has come from prospective international students, with international applications growing from 34,400 to 60,800 – a rate of 10 percent per year. Engineering and computer science programs have significantly higher demand from international students than do other disciplines.

Recent survey data compiled by the Council of Graduate Schools show a similar nationwide trend of

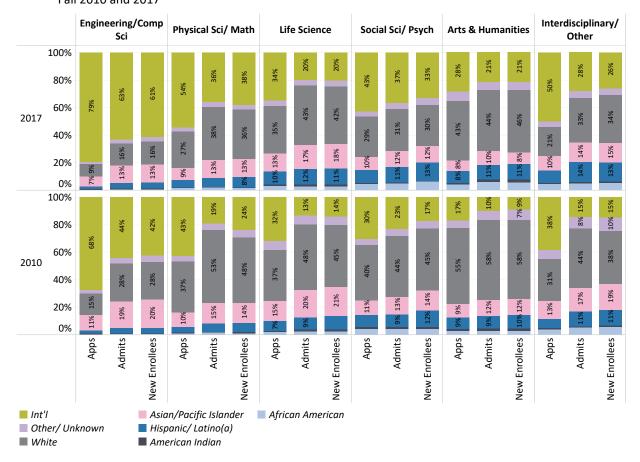
growth in applications from international students, with the similar pattern of engineering as the most popular field for international applicants.¹

Despite more robust demand, new admits and enrollments to UC academic master's and doctoral programs have remained relatively flat since 2010, with admits increasing from 16,500 in 2010 to 21,800 in 2017 and new enrollments increasing from 7,200 to 9,300. Though applications are now predominantly (58 percent) from international students, both admits and new enrollments of domestic students exceed those of international students.

¹ http://cgsnet.org/ckfinder/userfiles/files/2017_International_Survey_Report_Final.pdf

Over the past eight years, the number and share of graduate academic admissions have modestly increased for underrepresented groups while growing more significantly for international students.

4.1.2 Graduate academic applications, admits and new enrollees by race/ethnicity and discipline Universitywide Fall 2010 and 2017

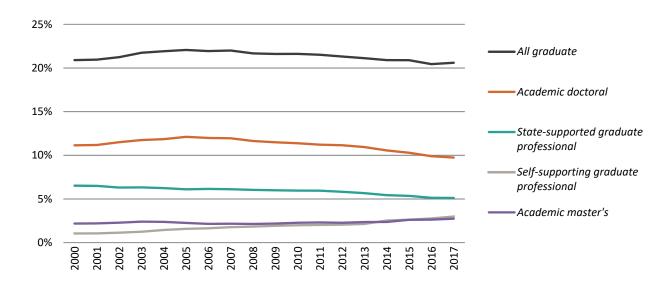


Source: UC Data Warehouse

International students represent the majority of applicants, admits, and new enrollees in engineering and computer science graduate programs. The share of international students in all other disciplines also increased between 2010 and 2017. Social science and humanities programs have the highest shares of enrollment among underrepresented groups students, and those shares increased between 2010 and 2017.

Graduate enrollment, as a share of UC's total undergraduate and graduate enrollment, has remained relatively steady over the past 18 years.

4.2.1 Graduate enrollment share of total Universitywide Fall 2000 to fall 2017



Source: UC Corporate Student System. Academic master's students include post-baccalaureate teaching credential students. Graduate professional includes professional master's (e.g., M.B.A., M.Ed.) and professional practice (e.g., J.D., M.D.) degrees.

With 21 percent graduate enrollment in 2017, including health science students, UC was lower than the average for non-UC AAU¹ public institutions, at 27 percent, and the average for AAU private institutions, at 55 percent.

In fall 2017, the proportion of academic doctoral students varied across UC's general campuses, from 7 percent at Merced to 13 percent at Berkeley. At San Francisco, an exclusively graduate health sciences campus, academic doctoral students made up 27 percent of fall 2017 enrollments. Since 2007, the share of academic doctoral students has declined at most campuses due to more rapid growth in the undergraduate, master's and professional populations.

As shown in indicator 10.3.1, UC awards 20 percent of California's graduate academic master's degrees, 63 percent of its academic doctoral degrees and 23 percent of its graduate professional practice degrees.

egrees.							
Percent of students who are academic doctoral							
	Fall 2007	Fall 2017					
San Francisco	32%	27%					
Berkeley	17%	13%					
Los Angeles	13%	11%					
Davis	11%	9%					

Santa Barbara 11% 9% San Diego 11% 9% Riverside 9% 9% 10% 8% Irvine Santa Cruz 7% 7% Merced 7% 6% Universitywide 10% 12%

Source: UC Data Warehouse

(26,725)

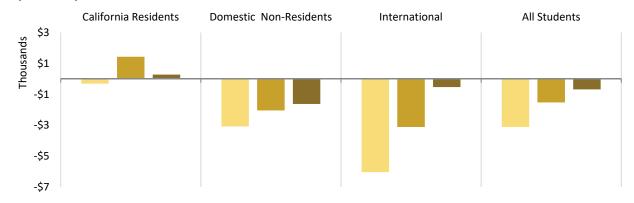
(25,824)

¹ A list of the institutions in the AAU comparison groups can be found in the appendix.

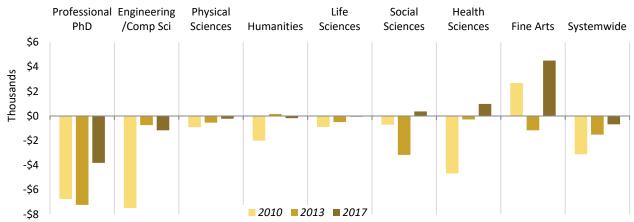
UC net stipends remain below competitive offers, but the gap decreased substantially between 2010 and 2017.

4.2.2 Average net stipend offered to graduate academic doctoral students admitted to UC compared with their first-choice non-UC schools Universitywide 2010, 2013, and 2017

By residency



By broad discipline



Source: UC Graduate Student Support Survey. Graduate academic professional doctoral programs include EdD, D.Env., DrPH., D.P.T. and D.N.S.

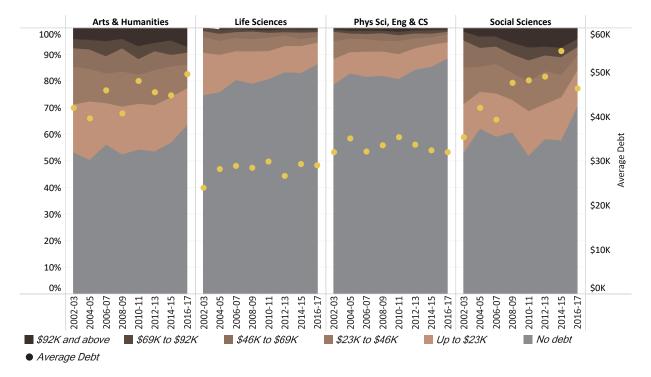
Doctoral students are crucial to a university's research enterprise and instructional programs. To attract the most highly qualified applicants, universities offer an aid package that includes the cost of tuition and stipends. Net stipend is the amount of aid that students have for living expenses after tuition and fees are paid. It is calculated by subtracting total tuition and fees from a student's

support package (which includes gift aid and teaching or research assistantships). It does not include loans that the student may be offered. The "stipend gap" varies by discipline as shown in the chart above. Since 2010, UC has made considerable progress in closing the net stipend gap with competing institutions, reducing it from \$3,000 to about \$700 in 2017.

More than half of UC doctoral students graduate without debt. Doctoral students in the physical and life sciences have seen smaller increases in debt over the past 15 years, and graduate with less average loan debt than those in the social sciences and arts and humanities.

4.2.3 Academic doctoral students' graduate debt at graduation, by discipline, domestic students Universitywide

Graduating classes of 2002-03 to 2016-17 (every two years)



Source: Corporate Student System¹

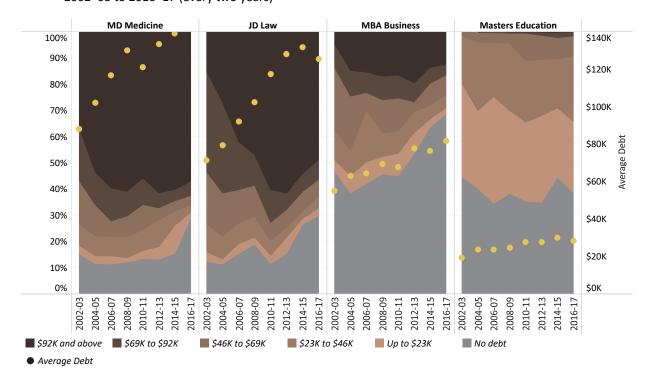
Depending on the field of study, between 60 percent (social sciences) and 85 percent (life sciences) of UC doctoral students take on no additional debt during graduate school.

Several factors account for the difference in debt burden between doctoral students in the physical and life sciences and those in other disciplines. Physical and life science students are more likely to be supported by research grants. Their programs take less time on average to complete than do programs in the social sciences or arts and humanities.

¹ Debt categories are inflation-adjusted in 2016 dollars using CA CPI-W. "Other" includes interdisciplinary and professional fields. Life sciences include health sciences.

Graduates with the highest debt levels come from professional schools that charge higher supplemental tuition.

4.2.4 Graduate professional degree student debt at graduation, by discipline, domestic students Universitywide 2002–03 to 2016–17 (every two years)



Source: UC Corporate Student System¹

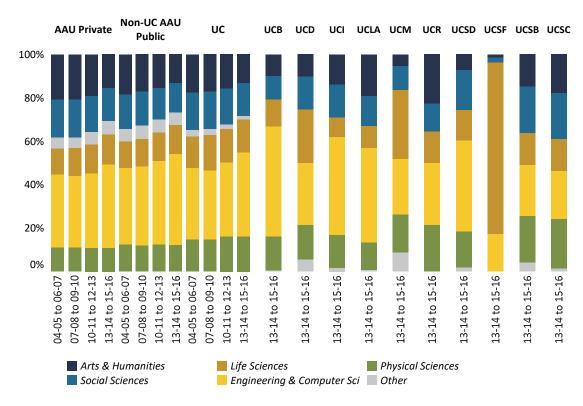
On average, about 61 percent of the aid awarded to graduate professional degree students comes in the form of loans rather than fellowships or grants. By comparison, loans constitute only 10 percent of the aid awarded to graduate academic students. Graduate funding models require greater reliance on loans for professional degree students as their programs are of shorter duration and many fields potentially offer higher incomes after graduation.

Most graduate professional degree students finance part of their education by borrowing. The increases since 2002–03 in average inflation-adjusted debt levels of graduating professional degree students vary considerably. Increases in graduate debt result from a combination of factors, including steady growth in tuition, cost of living increases and greater student reliance on federal student loan programs.

¹ Average debt is among graduates with debt. Debt categories are inflation-adjusted in 2016 dollars using CA CPI-W.

Like other major research universities, UC awards a high proportion of graduate academic degrees in science, technology, engineering and mathematics (STEM) fields.

4.3.1 Graduate academic degrees awarded by discipline
UC and AAU private and public comparison institutions
Number of degrees grouped in 3-year intervals: 2004-05 to 2006-07; 2007-08 to 2009-10; 2010-11 to 2012-13; 2013-14 to 2015-16



Source: IPEDS¹

UC graduates have had major impacts on the nation and the world — creating much of California's biotechnology and computer industries, developing research breakthroughs that have led to major medical advances, shaping ideas about our world and culture, creating the economic and social infrastructure of our communities, and assuming political leadership in California and the nation.

UC's graduate STEM programs reflect the predominant industries in California's economy. In addition to leading all California institutions in the production of engineering and computer science

degrees, UC far outpaces them in the production of degrees in the biological sciences — key to driving the growth of California's biotechnology sector.

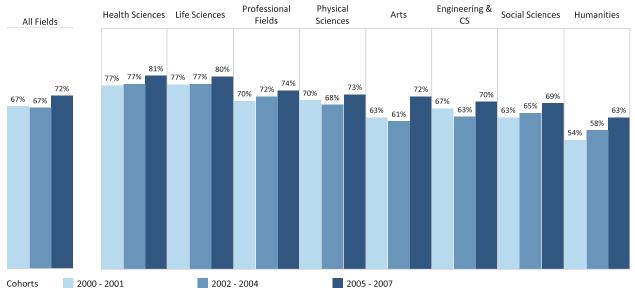
More than 25 UC Ph.D. recipients have been awarded Nobel Prizes.

Over the past 12 years, the number of graduate academic degrees awarded at UC grew by 25 percent, compared to 41 percent at the group of AAU private institutions and 25 percent for the group of non-UC AAU public institutions.

¹ "Other" includes interdisciplinary and academic degrees in otherwise professional fields, such as architecture, communications and public administration.

UC's doctoral completion rate increased in every field over the two most recent cohorts studied.

4.3.2 Doctoral completion rates after ten years, by broad field Universitywide Fall 2000-2001, 2002-2004, and 2005-2007 entry cohorts



Source: UCOP Corporate Student System

The universitywide ten-year doctoral completion rate across all fields for the fall 2005–07 entering cohorts was 72 percent. This is an increase from the 67 percent completion rate reported for the 2002–04 cohort. Among broad disciplines, life sciences and health sciences continue to have the highest completion rates. Social sciences and humanities showed the lowest rates, owing to the longer normative time in those fields and different financial support models, although both experienced an increase compared to previous cohorts.

The overall improvement in ten-year completion rates may be attributed to at least two factors. First, student demographics have shifted to include a larger percentage of international students, who, as a group, have a higher ten-year completion rate than the overall cohort's rate (a variety of factors influence this difference, including different tuition rates for international students). Second, shifts in enrollment toward disciplines with higher completion rates (STEM fields) over time affect the overall ten-year completion rate.

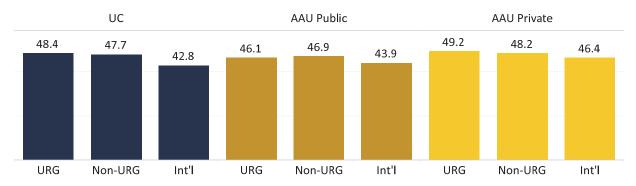
The Doctoral Completion Rates dashboard is available at:

universityofcalifornia.edu/infocenter/doctoral-rates

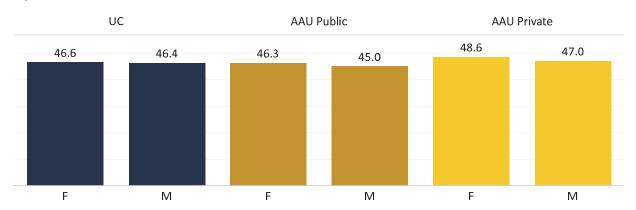
UC median ten-year time-to-doctorate by ethnicity and gender compares well with AAU institutions.

4.3.3 Median ten-year time-to-doctorate, by ethnicity and gender Universitywide, AAU public and AAU private comparison institutions 2012 to 2014 exit cohort

By Ethnicity



By Gender



Source: Survey of Earned Doctorates, National Opinion Research Center

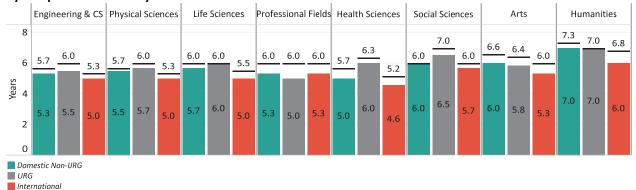
The median number of years required to complete a doctoral degree at UC (elapsed time-to-doctorate) is comparable to that at other major research universities. Men and women complete the doctorate in about the same amount of time at UC, compared to AAU public institutions where women's time-to-doctorate is nearly half a year longer than men's. Underrepresentd groups (URG) students have slightly longer time-to-doctorate at UC and comparison institutions, whereas international students required substantially less time to complete the doctorate.

The Time to Doctorate dashboard is available at: universityofcalifornia.edu/infocenter/time-to-doctorate

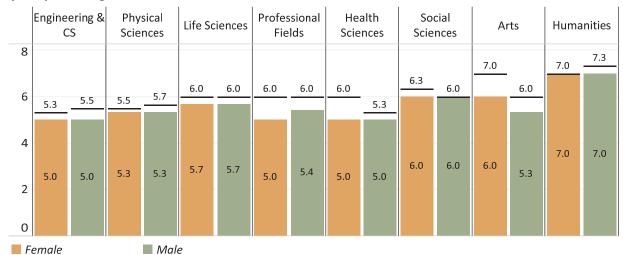
UC median ten-year time-to-doctorate ethnicity and gender by discipline.

4.3.4 Median ten-year time-to-doctorate, by discipline and ethnicity and gender
 Universitywide
 2014 through 2016 exit cohort

By discipline and ethnicity



By discipline and gender



Note: Blue bars indicate median years enrolled, while orange horizontal bars incicate median time elapsed.

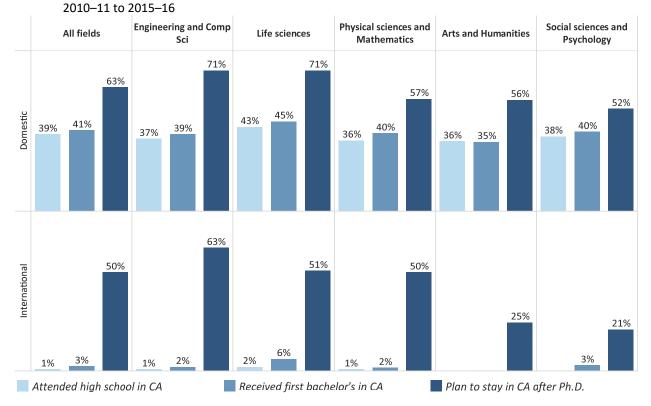
In five of eight disciplines, underrepresented groups (URGs) have higher registered time-to-doctorate (RTD) than non-URGs and international students. URG students have slightly lower RTD than non-URGs in the professional fields and arts. The elapsed time-to-doctorate (ETD) for URGs are higher than or equal to non-URGs except for being slightly lower in arts and humanities. International students generally

have lower ETD and RTD in all disciplines. Men and women generally have comparable time-to-doctorate, with exceptions in engineering and computer science where women have a slightly lower ETD and the arts where women have a longer ETD and RTD.

The Time to Doctorate dashboard is at: universityofcalifornia.edu/infocenter/time-to-doctorate

More than half of UC's academic doctoral degree recipients plan to stay in California, a greater share than those who attended high school or college in California.

4.3.5 Origin and planned destination of UC academic doctoral degree recipients Universitywide



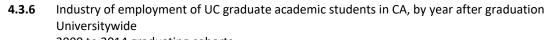
Source: Survey of Earned Doctorates. Excludes UC Merced.

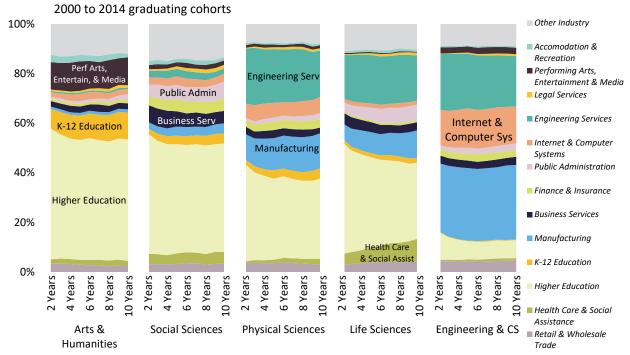
The most recent data for UC's doctoral degree recipients, based on those graduating between 2010–11 and 2015–16, show that over half plan to stay in California. Sixty-three percent of domestic doctoral degree recipients intend to stay, though only 41 percent of this cohort received their bachelor's degrees in California, and only 39 percent attended high school in California. This proportion is higher in science, technology, engineering and mathematics (STEM) fields, indicating that UC graduates are contributing to California's robust economy in these areas.

Though a negligible share of UC's international (not a U.S. citizen nor permanent resident) doctoral recipients attended high school or college in California, half intend to stay after graduation.

The Survey of Earned Doctorates (SED) is conducted of all individuals receiving a research doctoral degree. It is sponsored by the National Science Foundation, National Institutes of Health, U.S. Department of Education, U.S. Department of Agriculture, National Endowment for the Humanities and NASA.

Half of UC academic doctoral and master's graduates who stay in California work in higher education.





Source: California Employment Development Department and UC Corporate Student System Note: Includes very small numbers of graduate professional students, who do not affect the overall picture.

The job market for doctoral and master's degree recipients is nationwide, and those who leave California are not tracked in this data source.

More than 30,000 graduates of UC academic doctoral and master's degree programs in fields other than engineering/computer science have entered the California workforce since 2000. Over half of them (51 percent) have gone on to work in the state's higher education workforce, which includes all of the two-year and four-year colleges, both public and private. This highlights the critical role of UC's graduate academic programs in producing the cadre of faculty who teach California's future college-educated workforce and conduct research that advances the state and national economies.

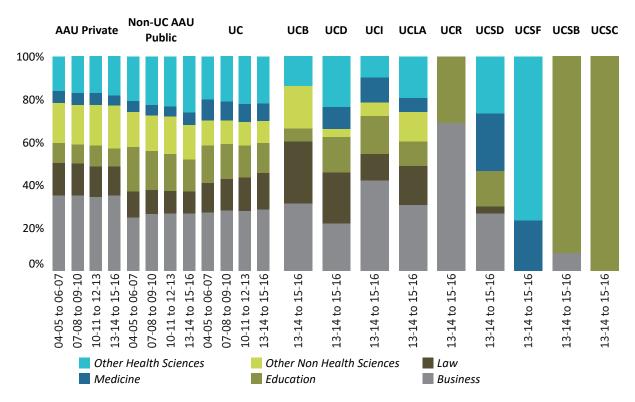
The contributions of UC academic doctoral and master's graduates to the state workforce go beyond

higher education. About 12 percent of the employed graduates of UC physical sciences and life sciences programs work in the state's manufacturing sector, while another 24 percent work in the engineering industry. This shows that the skills gained in UC academic doctoral and master's programs are both applicable and relevant to key high-tech industries.

UC graduate academic programs in engineering and computer science supply workers to the state's high-skilled and high-tech industries. Since 2000, over 18,000 graduates of these programs have entered the California workforce, with 35 percent working in the manufacturing sector and 30 percent working in engineering services. Another 22 percent go on to work in the state's fast-growing internet and computer services industry. About 14 percent of engineering and computer science graduates go on to teaching and research positions in the state's college and university systems.

Like other major research universities, UC awards a high proportion of professional degrees in business.

4.4.1 Graduate professional degrees awarded by discipline
UC and AAU private and public comparison institutions
Number of degrees grouped in 3-year intervals: 2004-05 to 2006-07, 2007-08 to 2009-10, 2010-11 to 2012-13, 2013-14 to 2015-16



Source: IPEDS1

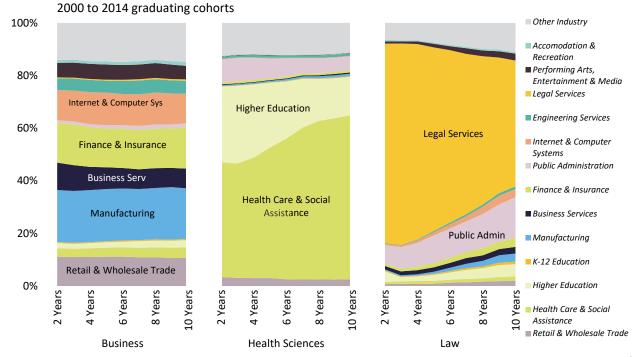
The proportion of professional degrees awarded by UC is comparable to AAU private and public institutions, with the greatest proportion of degrees awarded in business. The number and size of graduate professional degree programs varies by campus, with UCLA awarding the greatest number of professional degrees.

Over the past decade and a half, UC has opened new professional schools in several areas, including the Rady School of Management at UC San Diego in 2003, the School of Law at UC Irvine in 2006 and the School of Medicine at UC Riverside in 2013.

¹ UC Merced has no professional degree students. "Other" includes disciplines such as public administration, architecture, communications and library science.

UC professional programs prepare graduates for careers related to their field of study.

4.4.2 Industry of employment of UC graduate professional students in California, by year after graduation Universitywide



Source: California Employment Development Department and UC Corporate Student System¹

Graduates of UC Master of Business Administration (MBA) programs contribute significantly to the state's high-skilled and high-tech industries. The 18,000 UC MBA graduates who have entered the California workforce since 2000 have worked in a wide array of industries, including manufacturing (26 percent), finance and insurance (20 percent), retail and wholesale trade (18 percent), and internet and computer systems (20 percent).

Over 10,000 graduates of UC health science professional practice programs (e.g., M.D., D.D.S., Pharm.D.) have gone on to work in California since 2000. The majority of these graduates (61 percent) go on to work in the state's health care and social assistance sector. This highlights UC's role, per the Master Plan, as the state's sole public provider of many health science professional practice degrees and validates UC's success in fulfilling that role. UC health science graduates also play key roles in other

areas of public service in the state, including 35 percent who go on to work in the state's higher education system and 13 percent who work in state government.

UC law school graduates go on to work in two main areas — legal services and government. Of the 9,300 UC law school graduates who have worked in California since 2000, about 79 percent eventually find positions in the legal services industry. Another 14 percent go on to work in the public sector as government prosecutors and public defenders, and in other public agency roles. A large percentage of law school graduates start off in legal services initially after receiving their degree (76 percent), but by ten years after graduation this percentage has fallen to about 48 percent. The percent of UC law school graduates in government rises from 7 percent to 15 percent over the same period.

¹ Includes very small numbers of graduate academic students (e.g., Ph.D. business), which do not affect the overall picture.



1869

The University of California opens its doors to a "tiny band of scholars" (10 faculty members and 40 students) at its Oakland campus, with Colleges of Agriculture, Civil Engineering, Letters, Mechanics and Mining.

John LeConte is the first faculty member appointed and serves as acting president of the university.



1903

Lucy Sprague comes to Berkeley and becomes the first Dean of Women. She lectured in the English Department and promoted educational and career opportunities for women students.

FACULTY AND OTHER ACADEMIC EMPLOYEES

History

As soon as it was founded, the University quickly attracted eminent faculty. Daniel Coit Gilman of Yale became the second president of the University in 1872; Eugene W. Hilgard, nationally renowned geologist and soil chemist, joined the faculty in 1875 and laid the foundations for the College of Agriculture, helping turn the Central Valley into one of the world's most productive farming regions; and Willis Jepson, professor of botany, helped establish the herbarium at Berkeley, the California Botanical Society, and the Sierra Club.

In 1920, the UC regents formally recognized the Academic Senate and its role in the governance of the University. Though the Academic Senate does not include all faculty members, it is an important body whose responsibilities include authorizing, approving and supervising all courses and determining the conditions for admissions, certificates and degrees. The Senate may advise the president and chancellors on budget matters and on the administration of the libraries, and participates in searches for deans, chancellors and the president.

Overview

The University of California's distinguished faculty and academic employees serve as a rich source of innovation, discovery and mentorship. They provide top-quality education to students, develop groundbreaking research and serve California communities. No other public institution can claim so many distinguished academics: 62 Nobel Prizes, 63 National Medals of Science, 88 MacArthur Genius Awards, 9 National Humanities Medals, 41 Pulitzer Prizes, to name a few. President Napolitano has said, "We teach for California ... [and] we research for the world."

Describing the academic workforce

Faculty are the most prominent face of UC's academic workforce, but there are several types of faculty and other academic roles as well, totaling nearly 47,000 full-time equivalents (FTE) across over 68,000 individuals. About 60 percent of academic roles fall under general campus while the other 40 percent support the health sciences and medical centers. Since 2000, all faculty groups have grown, but lecturers have grown faster than other faculty.

Academic FTE and Headcount, October 2017

	FTE	Headcount
Faculty - Ladder-rank and Equivalent	10,158.6	11,065
Faculty - Clinical/In-Residence/Adjunct	6,978.5	7,885
Faculty - Lecturers	2,300.8	3,765
Other Academic Employees	6,205.6	8,445
Postdoctoral Scholars	5,230.4	6,433
Medical Interns/Residents	5,771.6	5,934
Student Teaching/Research Assistants	10,163.3	24,931
Grand Total	46,808.9	68,458

Non-faculty academic positions have grown as well, notably student assistants and medical interns. Postdoctoral scholars are sponsored by faculty and typically paid through research contracts and grants, so their numbers concentrate in the Medical and STEM fields and vary with available grant funding.



1915

Karl Meyer, whose work helps end botulism in the U.S. canning industry, joins the faculty of the Hooper Foundation for Medical Research.



1930

Ella Young holds a chair in Irish Myth and Lore at the UC Berkeley. She is known for her colorful and lively persona, expounding on legendary creatures such as fairies and elves.

Diversity

The University of California is committed to diversifying its faculty and academic workforce. The proportion of women and underrepresented (African American, American Indian, and Hispanic/Latino(a)) groups in the faculty continues to grow at a modest pace. Younger faculty cohorts are noticeably more diverse than older cohorts.

Compared to ladder-rank faculty, many other academic positions are more ethnically diverse and gender balanced because they experience more rapid turnover. Still, when comparing UC's faculty diversity to peer research institutions, UC places 3rd in terms of female faculty and 2nd in terms of underrepresented faculty. More must be done, and UCOP is working with campuses by tracking recruitment data to identify opportunities to diversify the faculty; by sharing best practices in mentoring and professional development; and by enhancing work-life balance programs.

A variety of programs have been put in place to strengthen faculty diversity:

Advancing Faculty Diversity — For two years, the state of California has provided \$2 Million to support efforts to increase faculty diversity at UC. Through a competitive process, UC has selected seven pilot units, each of which has developed a distinctive recruitment program for the 2016-17 or 2017-18 fiscal year. During both years, campus units used the funds to support interventions that would recruit diverse candidates to a university committed to its diverse students and communities. Some of the successful practices included enhanced outreach; use of a postdoctoral year to recruit top candidates; tapping into the proven talent of the diverse fellows in the President's Postdoctoral Fellowship Program and the Chancellors' Postdoctoral Fellowship Program; intervening in traditional evaluation practices; inclusion of students in the hiring process; making use of campus equity advisors; creating peer-mentoring cohorts of new faculty; and hiring at the senior level through endowed chairs.

President's Postdoctoral Fellowship Program (PPFP) – Established in 1984, the program recruits top scholars who are committed to underserved and minority communities to pursue faculty careers at UC. An increasing number of Fellows have been hired as UC faculty in recent years; in 2017-18, numbers reached an all-time high. This year, UC increased the incentives available to departments who hire fellows and the program was expanded to include all disciplines. The program is nationally recognized and leads a partnership of top universities that participate in recruitment.

Grant-funded research — In 2015, UC was awarded a National Science Foundation grant to study the faculty hiring process over a three-year period. The study is identifying steps in UC's hiring process susceptible to bias, characteristics that amplify or mitigate disparities, as well as policies to promote faculty equity, inclusion and diversity. UC was also awarded a five-year grant to establish the Center for Research, Excellence and Diversity in Team Science (CREDITS), a research and training program to enhance the capacity, effectiveness and excellence of team science efforts at UC and CSU. CREDITS researches gender and racial/ethnic diversity in team science, particularly barriers to diverse participation and how diversity shapes the formation of science teams and the implications for promotion and tenure.



1946

Wendell Stanley, founder of the UCB Department of Biochemistry and the Virology Lab, wins the Nobel Prize in chemistry. Stanley and colleagues developed the flu vaccine during World War II.



1978

Barbara Christian, pioneering scholar of African American literary feminism, is the first black woman to be granted tenure at Berkeley and promoted to full professor in the UC system. **UC Davis Center for Multicultural Perspectives on Science (CAMPOS)** — Established in 2013, the center incentivizes the hiring of STEM faculty committed to doing outreach, mentoring or research in underserved communities. Its scholars are ladder-rank faculty selected based on transformative thinking, perspectives, interdisciplinary approaches and leadership potential. The Center started with a focus on Latina STEM scholars and has expanded to all underrepresented groups in STEM.

Hiring and retention

UC's faculty hires show that hiring generally matches to availabilities of U.S. doctoral degree recipients by ethnicity and gender, but varies by field. For a variety of reasons, STEM fields have limited ability to catch up on diversity based on these availabilities.

Over the last few years, faculty hires have increased as UC has recovered from severe budget cuts and as enrollment growth has demanded greater teaching capacity. Departures have remained steady. Faculty salaries at UC have improved somewhat in recent years; however, they still trail those at many comparison institutions, particularly a benchmark of the average of salaries at the "Comparison 8," a group of four public and four private institutions.

Even in retirement, UC faculty remain active and are recognized for their contributions. A Council of University of California Emeriti Associations (CUCEA) survey showed that between 2012 to 2015, UC emeriti taught more than 2,000 classes, wrote more than 500 books and over 3,000 articles, and were involved in hundreds of campus and community service efforts. In early retirement, many faculty still work with graduate students on research, run labs or have grants with time remaining.

For more information

UC Academic Senate: universityofcalifornia.edu/senate

UCOP Academic Personnel and Programs: ucop.edu/academic-personnel-programs

UC employee headcount data: universityofcalifornia.edu/infocenter/uc-employee-headcount

UC employee FTE data: universityofcalifornia.edu/infocenter/employee-fte

Diversity of UC employee data: universityofcalifornia.edu/infocenter/uc-workforce-diversity

Faculty diversity website: ucop.edu/faculty-diversity/index.html



2002

France Córdova is named UC Riverside chancellor, becoming the first Hispanic woman to serve as head of a University of California campus.

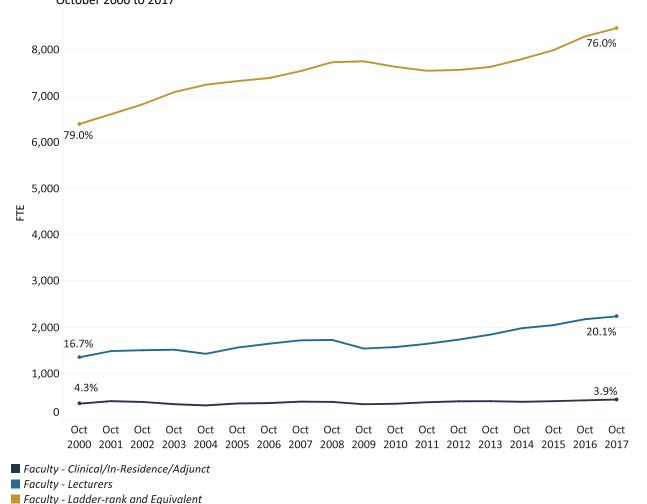


2014

Shuji Nakamura wins the Nobel Prize in physics for the invention of blue light-emitting diodes, which enabled a new generation of bright, energy-saving white lights and color LED screens.

UC faculty have increased to accommodate a growing student body, relying more on term faculty today than in years past.

5.1.1 General Campus faculty FTE total by type Universitywide October 2000 to 2017



Source: UC Corporate Personnel System

Since 2000, faculty has increased by over 3,000 FTE, or over 37 percent. While all faculty types have grown, the most pronounced increase has been among lecturers, who grew over 65 percent during this period. Lecturers made up more than 20 percent of general campus faculty FTE in October 2017, a slight increase from 17 percent in 2000.

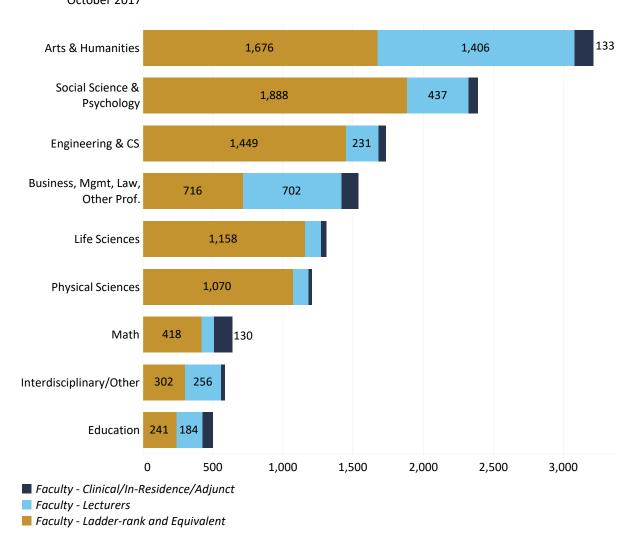
Ladder-rank faculty have grown at a more modest 32 percent, but they still make up 76 percent of faculty

FTE. FTE in the Clinical/In-Residence/Adjunct faculty series are typically associated with health sciences, so they only represent a small portion (4 percent) of overall general campus faculty.

Reliance on lecturers has become more common in higher education in recent years. At UC, lecturers do not have research responsibilities and therefore focus on teaching. These faculty help meet the instructional needs of UC's growing enrollment.

General campus faculty are most concentrated in arts and humanities and the social sciences, and a variety of STEM fields.

5.1.2 General campus faculty headcount by discipline Universitywide October 2017

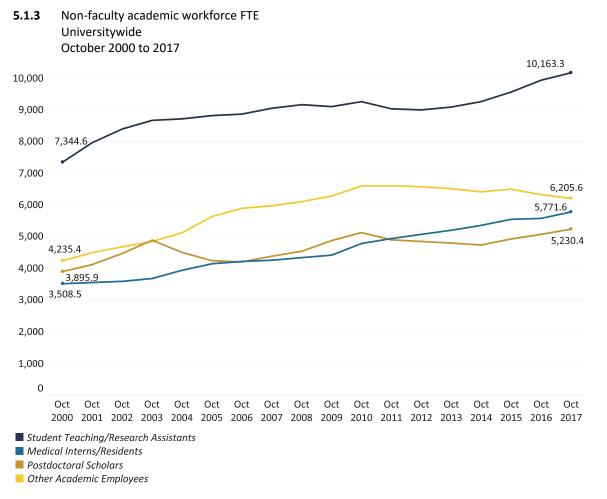


Source: Corporate Personnel System

Faculty fall into hundreds of departments across the ten campuses. While most health sciences faculty are classified under medicine and other health sciences, general campus faculty are spread across a spectrum of disciplines. The disciplines with the most undergraduate majors tend to represent the largest groups. Arts and Humanities may be especially high due the smaller class sizes required to teach many general education courses.

Different disciplines rely on varying types of faculty to fulfill their teaching and research missions. Lecturers are also concentrated in certain disciplines, such as Arts and Humanities, often to support general education requirements in those areas.

The non-faculty academic workforce has increased steadily, particularly among student assistants and medical interns. Other Academic and postdoctoral growth aligns closely with faculty growth and the availability of research funding.



Source: UC Corporate Personnel System

The non-faculty academic workforce has expanded alongside student and faculty growth since 2000. There are nearly 8,500 additional FTE over this period, with overall growth of 45 percent.

Student teaching and research assistants as well as medical interns/residents have grown considerably, constituting over 5,000 of the FTE growth. Most student assistants are graduate students and therefore part-time, which means that the FTE growth represents a larger headcount growth of close to 7,000 individuals. Enrollment increases and expansion of medical programs over this time explain this growth.

Postdoctoral scholars and other academics, two groups heavily concentrated on the research mission, have also grown in line with faculty.

Contracts and grants from external sponsors support the vast majority of researchers in the academic workforce, with the federal government providing most research funding. A drop in federal research funds after 2010 flattened other academic growth and reduced postdoctoral FTE in the years following. Chapter 9, Research, provides additional details on the composition of the research workforce.

5.1 ACADEMIC WORKFORCE

Postdoctoral scholars are concentrated in medicine, science and engineering.

5.1.4 Postdoctoral scholar headcount By campus and discipline October 2017

	Berkeley	Davis	Irvine	Los Angeles	Merced	Riverside	San Diego	San Francisco	Santa Barbara	Santa Cruz	ANR/ UCOP/ SWP	Total
Arts & Humanities	5	2	8	4	1	4	3		4	1		32
Business, Mgmt Law, Other Prof	,,	2	2	13		3	3				2	52
Education	9	7	10	10		2	3		1			42
Engineering & CS	278	112	59	139	18	26	149		139	13		933
Interdisciplinary /Other	173	43	9	30	1	7	3	3	33		4	306
Life Sciences	362	326	94	90	6	106	123		18	35	7	1,167
Math	11	6	3	5		2	10		1	2		40
Medicine		174	47	381		19	614	930				2,165
Other Health Science	48	76	22	121	1		34	162			1	465
Physical Science	s 243	55	96	157	21	50	231		85	72	3	1,013
Social Science & Psychology	52	32	9	55	3	10	33		19	5		218
Total	1,208	835	359	1,005	51	229	1,206	1,095	300	128	17	6,433

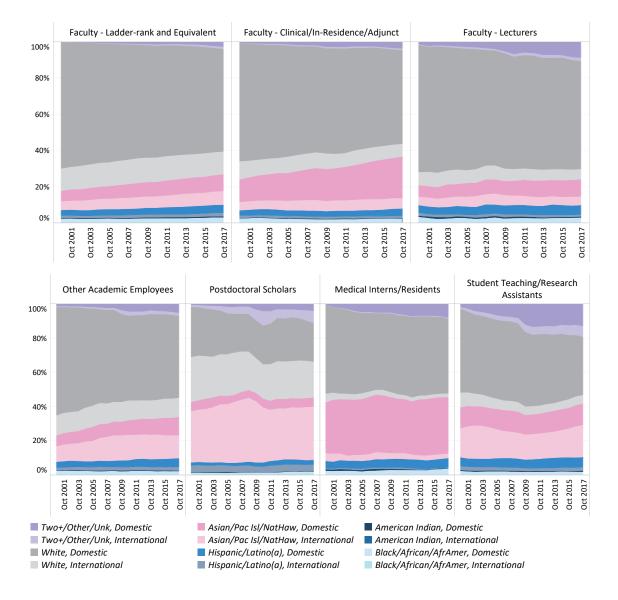
Source: UC Corporate Personnel System

Postdoctoral scholars have doctorate degrees and conduct research with faculty. Because most of their funding comes from contracts and grants, they are particularly prevalent in fields that receive large amounts of grant funding such as medicine, life sciences, physical sciences and engineering. Campuses with large research programs in these fields consequently have larger postdoctoral populations.

Beyond direct research, postdoctoral scholars mentor graduate and undergraduate students in the laboratory and may have formal supervisory functions in the laboratory.

UC's academic workforce is increasingly diverse, with notable differences in diversity among the types of employees.

5.2.1 Academic workforce race/ethnicity by type, Universitywide October 2000 to 2017



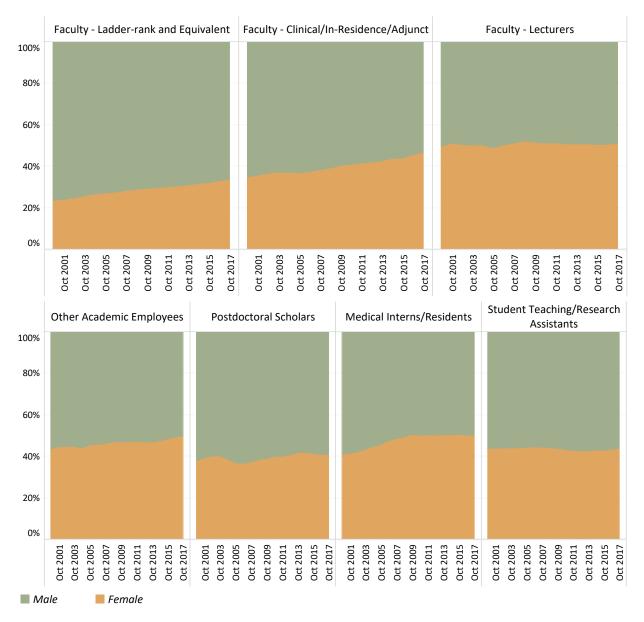
Source: UC Corporate Personnel System

All academic positions have increased in racial/ethnic diversity since the millennium. The share of academic employees who report two or more races/ethnicities has grown quickly since the introduction of this reporting category in 2010. Campus, discipline and age detail is available through the UC Information Center.

Positions with shorter durations tend to be more diverse, since turnover allows for increased diversity in hiring. Ladder-rank faculty diversity has been the slowest to change due to long tenures and limited availability of candidates in some disciplines.

Gender diversity has increased or maintained parity among every academic group but still falls short of parity in several categories of academic appointees.

5.2.2 Academic workforce gender by type, Universitywide, October 2000 to 2017



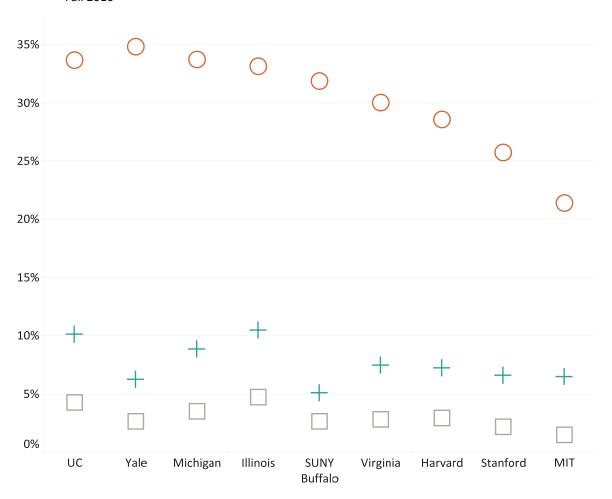
Source: UC Corporate Personnel System

Today, women make up nearly half of lecturers, other academics and medical interns/residents. The ratio of women among Clinical/In-residence/adjunct faculty and ladder-rank faculty has risen. Gender diversity initiatives take longer to change

populations such as ladder-rank professors where turnover is low and tenures are long. Postdoctoral scholars and student assistant ratios have remained relatively flat, likely related to the concentrations of those roles in fields that skew male.

UC has greater faculty diversity in terms of women and under-represented minorities than many peers.

5.2.3 Percent of tenure and tenure-track faculty who are female and/or an under-represented group (URG) UC and comparison institutions
Fall 2016



- O Percent Female
- + Percent URG
- ☐ Percent Female URG

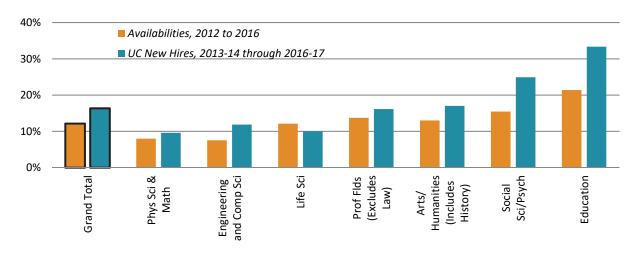
Source: IPEDS. UC includes UC Hastings.

UC's efforts to recruit women and underrepresented (American Indian, African American, and Hispanic/Latino(a)) groups (URGs) into faculty roles puts it near the top among peer research institutions in faculty diversity.

Relative to the "Comparison 8" universities (four public institutions: Illinois, Michigan, University at Buffalo, Virginia; four private institutions: Harvard, MIT, Stanford, Yale), UC has the third highest proportion of women at 33.6 percent. Regarding URG, UC has 10.1 percent overall URG and 4.3 percent female URG, placing it second amongst its peers.

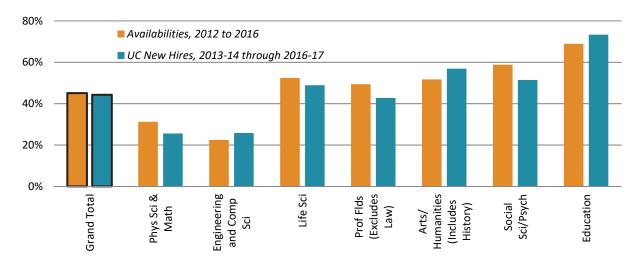
UC's hiring of underrepresented and female faculty overall exceeds or meets the national availability of doctorates, with variation among broad discipline groups.

5.3.1 Underrepresented* new assistant professors compared with national availability by discipline, Universitywide, 2013–14 to 2016–17



^{*} Underrepresented at UC includes those who identify as Black/African American/African, Chicano/Latino/Hispanic, and American Indian/Native American.

5.3.2 Female new assistant professors compared with national availability by discipline, Universitywide 2013–14 to 2016–17



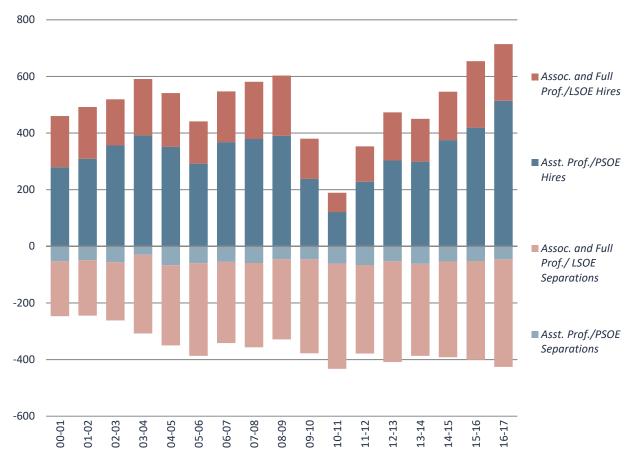
Source: UC Academic Personnel and Program Administration and Survey of Earned Doctorates

UC remains committed to diversifying its faculty and taking full advantage of the available pools of qualified candidates. Between 2012 and 2016, underrepresented groups accounted for 12.2 percent of nationwide new doctoral degree recipients and 16.4 percent of UC's new assistant

professor hires. Between 2012 and 2016, women constituted 45.1 percent of nationwide new doctoral degree recipients and 44.3 percent of UC's new hires. Some disciplines exhibit greater success in outreach, recruitment and hiring efforts at UC than others, relative to the availability pools in their field.

In the past few years, hiring of new faculty has started to rebound from a drop in fiscal years 2010 and 2011 due to state budget cuts.

5.3.3 New hires and separations of ladder-rank and equivalent faculty, Universitywide, 2000-01 to 2016-17



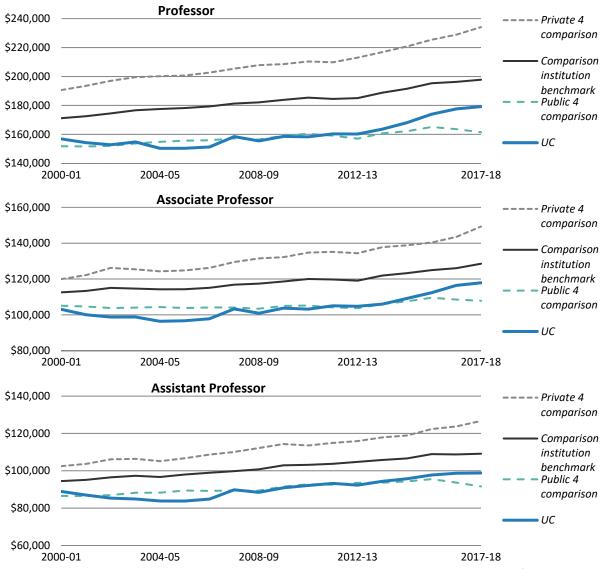
As faculty numbers have grown, hiring has generally outpaced separations. Separations have stayed fairly constant despite shifts in demographics, the economy and state funding.

Source: UC Academic Personnel and Program Administration

UC has partnered with Harvard's Collaborative on Academic Careers in Higher Education (COACHE) on a research project to survey faculty who leave UC for employment at other universities. This Retention and Exit Study, now in its third year, is part of an effort to better understand and improve the experience of UC faculty members, as well as improve recruitment and retention.

UC faculty salaries are below the comparison institution benchmark, affecting the University's efforts to recruit and retain high-quality faculty.

5.3.4 Average ladder-rank general campus faculty salaries by rank, 2000-01 to 2017–18



Source: UC Corporate Personnel System, AAUP faculty salary survey

UC continues to lag the comparison benchmark it uses to assess the competitiveness of its faculty salaries. UC has sets the benchmark using the average salaries of the "Comparison 8" universities (four public - Illinois, Michigan, University at Buffalo, Virginia; four private - Harvard, MIT, Stanford, Yale).

UC's faculty salaries fall significantly below those of the comparison private institutions, and are just recently pulling above the four public institutions. Notably, this comparison does not factor in the cost of living, which is especially high in most of California compared to the public peers assessed here.



1870

After classes begin in 1869 at the original Oakland campus, work begins on the first buildings on the Berkeley campus. Among the first, the agricultural college building, later to be known as South Hall, still stands today.



1943

Sam Hinton arrives at Scripps Institution of Oceanography and serves as the Aquarium director from 1946-1964, a period of large expansion. A singer/songwriter, he is also known for folk music.

STAFF

History

The three-pronged mission of the University of California includes undergraduate, graduate and professional education, research, and public service, none of which is accomplished without the support of staff who organize and facilitate all that is required to do the work of the University.

Many arms of the University are wholly run by staff, including UC Press, founded in 1893. Staff are vital in the creation and running of UC's rich collection of art, history, cultural and wildlife museums and botanical gardens. Anchored by the establishment of The Bancroft Library in 1905, the University of California libraries comprise the largest university research library in the world and is largely managed and run solely by staff.

Overview

Non-academic staff employees constitute about 71 percent of UC's workforce and are responsible for health services, student services, instruction and research support, compliance and general administration. In October 2017, this group included 154,904 individuals, about a third of who are part-time, particularly student workers. Overall, this workforce represented 113,765.8 full-time equivalent (FTE) employees in that month.

Staff groups and workforce diversity

- UC Health employs over half of staff FTE as doctors, nurses, administrators, technicians and allied health professionals. About 97 percent of these employees are supported by non-core funds, typically the revenues generated by hospital services.
- Student workers for the general campus (non-health) are predominately part-time. While their headcount is 34,798, they comprise 8,642.2 FTE. Students often work on campus as part of their financial aid packages or for research experience.
- General campus, non-student staff are the remainder, at 43,712.4 FTE. This includes student services
 employees, librarians, IT specialists, research administration, laboratory staff, food and auxiliary service
 workers, accountants, maintenance and janitorial staff, safety workers and analysts.

UC is dedicated to building a more diverse workforce, particularly including those from under-represented racial and ethnic populations in the U.S. Staff at UC are majority female and increasingly ethnically diverse across all employee groups. However, there are variations among the different employee groups, as more senior positions tend to be less female and more white. A more diverse academic and staff population is an increasingly important measure of a great university.



1944

August Frugé joins UC Press. Over a 32-year career, he would lead the transformation of the small press into one of the largest, most distinguished university presses in the country.



1970

Lawrence Livermore
Elementary School
Science Study of Nature
(LESSON) begins.
Laboratory scientists
visiting classrooms evolves
into teacher-training
programs.

Staff compensation

Over the past decade, UC has relied less on core funds (state funds, tuition and fees, and other general funds) to cover staff. While UC has over 21,000 more staff than ten years ago, over 2,000 fewer overall FTE are paid on core funds. Even as tuition has increased to cover losses in state funding, less than 20 percent of staff are paid using core funds of any type.

General campus career staff salaries have stayed relatively flat compared to inflation for the past 15 years and have increased modestly for some UC Health professionals. Staff salaries tend to lag comparable market positions, and the lack of increases beyond inflation could affect staff satisfaction and turnover. Chancellor and system leader compensation falls on the lower end when compared to peer institutions.

Staff separations and satisfaction

UC's separation rate among career staff is about 9.1 percent, which has been relatively steady for the past decade. About 20 percent of staff separations are due to retirement and reflect the baby boomer generation exiting the workforce. Still, a large portion of separations is due to resignation for various reasons. The 2017 UC Overall Employee Engagement Survey shows some improvement in engagement, communication and performance management from 2015 but that UC is still below the national norm in eight out of nine employee satisfaction categories.

For more information

Employee headcount data: universityofcalifornia.edu/infocenter/uc-employee-headcount

Employee FTE data: universityofcalifornia.edu/infocenter/employee-fte

Workforce diversity data: universityofcalifornia.edu/infocenter/uc-workforce-diversity

Workforce profile: ucop.edu/institutional-research-academic-planning/_files/workforce-profile-dashboard.pdf

Employee trends report: ucop.edu/institutional-research-academic-planning/_files/employee-trends-at-uc.pdf

Chancellors: ucop.edu/institutional-research-academic-planning/_files/uc-salary-compare-system-leaders.pdf

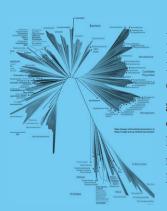
System leaders: ucop.edu/institutional-research-academic-planning/_files/uc-salary-compare-aau-chancellors.pdf

 $\textbf{Staff engagement survey:} \ ucop. edu/human-resources/staff/employee-relations-staff/engagement-survey. html$



1991

Judith Sweet, UC San
Diego athletic director,
becomes the first female
president of the NCAA.
She proved an adept
leader in helping
promote all athletics
at the collegiate level.

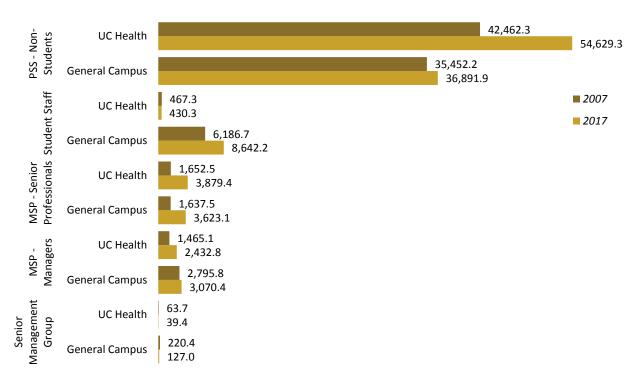


2016

Researchers at UC
Berkeley and UC Santa
Cruz use advances in
genetic sequencing to
create a detailed tree of
life, mapping the
relationship of all known
life forms.

UC Health staff have grown significantly as health services have expanded, while general campus non-student support staff (PSS) grew modestly even as enrollment increased significantly over the past decade.

6.1.1 Staff Full-time Equivalent (FTE)
Universitywide
October 2007* to 2017



Source: UC Corporate Personnel System

UC operates five teaching hospitals as well as schools of medicine, dentistry, nursing and other health sciences education and research programs. Altogether, UC Health accounts for 71.6 percent of non-academic staff growth over the past ten years. The growth has been driven by service expansions such as increases in patient days as well as outpatient/emergency visits. General Campus student employees grew by 2,455.5 FTE, largely related to the additional 58,000 students UC enrolled over this period. Increased enrollment translates to more student employees working on campus as part of their financial aid packages.

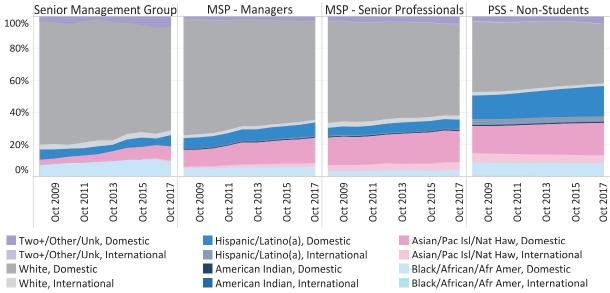
General campus non-student staff has seen the greatest growth amongst Senior Professionals due to both the implementation of Career Tracks and the professionalization of UC's workforce towards higher-skilled analysis and technical capabilities. Career Tracks is a function-specific, market-aligned job classification system that applies consistent interpretations of which positions are Management and Senior Professional (MSP) and which are Professional and Support Staff (PSS). Within PSS, there has been a significant shift away from clerical roles into student services positions and administrative analysis to manage growing campuses and student bodies.

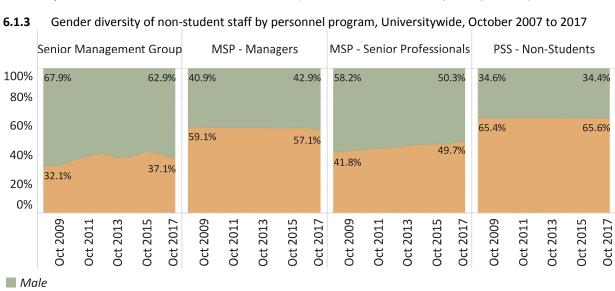
Staff 103

^{*} The Oct 2007 Senior Management FTE includes 81 positions (mostly Deans) that in 2010 were moved under academic employees. Excludes Lawrence Berkeley National Laboratory, Hastings School of the Law and Associated Students UCLA.

Over the past 10 years, the proportion of nonwhite staff has grown modestly at all levels. Female representation has grown at the Senior Management Group and Senior Professional levels, and has stayed high at the Manager and Support Staff levels. Even with growth in both of these populations, UC has more progress to make.

6.1.2 Racial/ethnic diversity of non-student staff by personnel program, Universitywide, October 2007 to 2017





Source: UC Corporate Personnel System

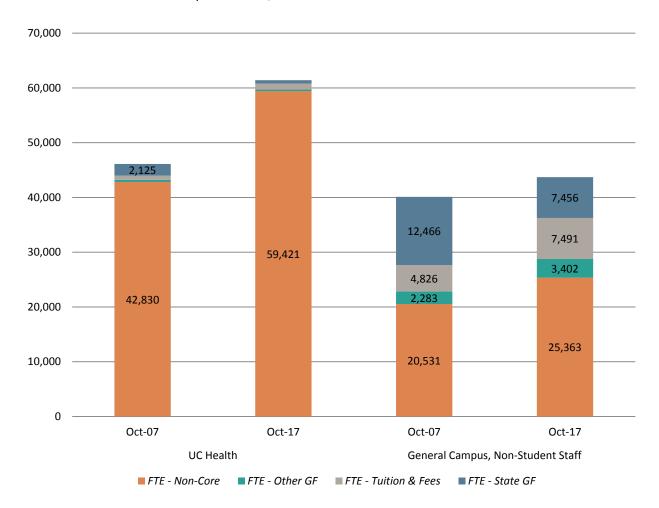
UC has sought to improve representation of historically underrepresented domestic racial/ethnic groups. Diversity has increased over the past 10 years at all staffing levels; however, management and more senior positions are notably less diverse.

UC is overall majority female, with Manager and PSS positions at well over 50 percent female. The percentage of female employees has grown steadily among SMG and has reached near parity for Senior Professionals.

Female

Since 2007, the number of staff supported by core funds has fallen as state funding for the University has decreased. Non-core funds supported all of the UC Health and non-student General Campus increases over the past decade.

6.2.1 Non-student staff FTE by fund source, October 2007 and 2017



Source: UC Corporate Personnel System

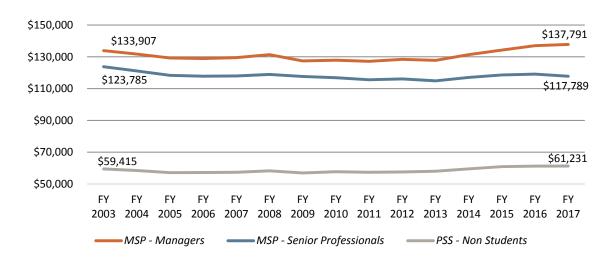
UC Health almost exclusively relies on non-core funds, particularly from hospital revenues, to support its staff. Despite adding more than 15,000 FTE, even fewer FTE today are paid on core funds than ten years ago.

General campus employees are increasingly paid on non-core funds such as research funds, auxiliary revenues and other sources. Though overall general campus staff increased modestly, overall corefunded staff have decreased. This is due to a drop of over 5,000 FTE in state-funded staff, which more than offsets the increases in staff funded by tuition and fees as well as other general funds.

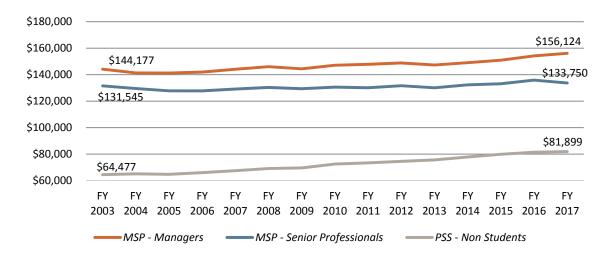
Staff 105

In the past 15 years, inflation-adjusted salaries have been relatively flat for general campus staff, with moderate increases for some UC Health staff.

6.2.2 General campus career staff average inflation-adjusted base salaries by personnel program, FY 02-03 to 16-17



6.2.3 UC Health career staff average inflation-adjusted base salaries by personnel program, FY 02-03 to 16-17



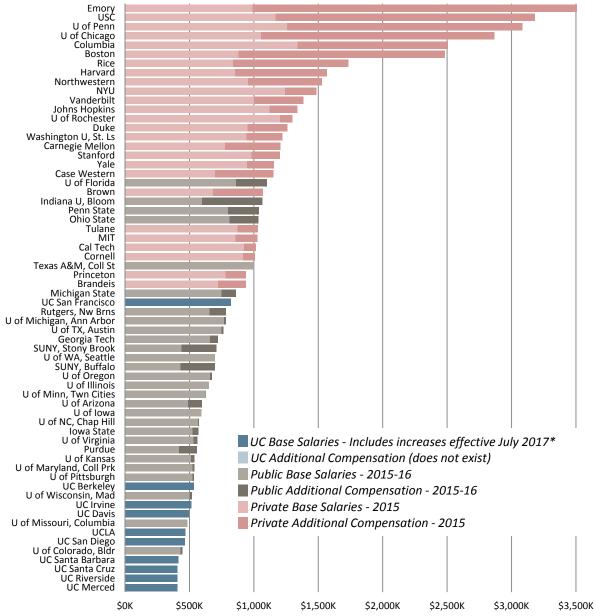
Source: UC Corporate Personnel System; California CPI used for inflation adjustment

Salaries in real dollars have been relatively flat for general campus career staff over the past fifteen years. At the same time, UC employees are contributing more to health care costs and to the UC retirement system, putting downward pressure on the competitiveness of UC's total compensation compared with the regional labor markets where university centers are located.

Salaries among UC Health career staff have been increasing notably in real dollars for Professional and Support Services (PSS) staff. This reflects market trends in wages for hospital staff and growing demand for healthcare professionals. These UC employees are also contributing more to health care costs and to the UC retirement system.

UC chancellors are among the lowest-paid when compared to their Association of American Universities (AAU) peers. The UC president's salary also remains modest compared to public peers.

6.2.4 Base salaries and additional pay for UC and AAU institution leaders



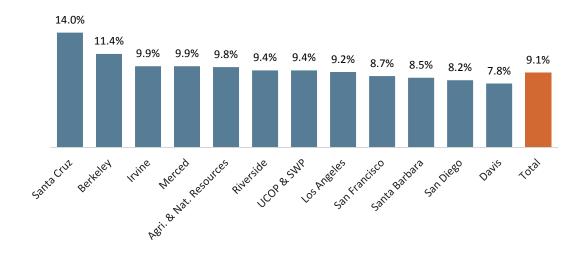
Source: The Chronicle of Higher Education Executive Compensation Report and institutional data sources

UC chancellors continue to place among the lowestpaid university leaders compared with their AAU peers. Nine UC chancellor salaries fall among the lowest quarter in this group. UC San Francisco, an exclusively graduate health science campus, is the only exception. Among public system leaders (a chancellor or president who administers or coordinates multiple campuses), the compensation for UC's president ranked 68th even with a budget twice as large as the next comparators. The UC president's compensation has not increased since September 2013.

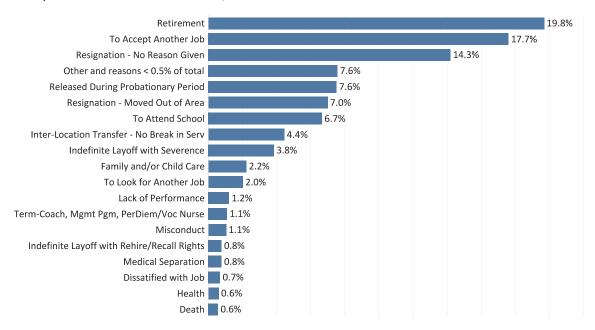
Staff 107

Separation among staff is about 9.1 percent, with significant campus variation. High retirement reflects an aging staff population; however, significant resignations could point to issues with employee satisfaction.

6.3.1 Separation Rates for Career Staff by Campus and Overall, FY 2016-17

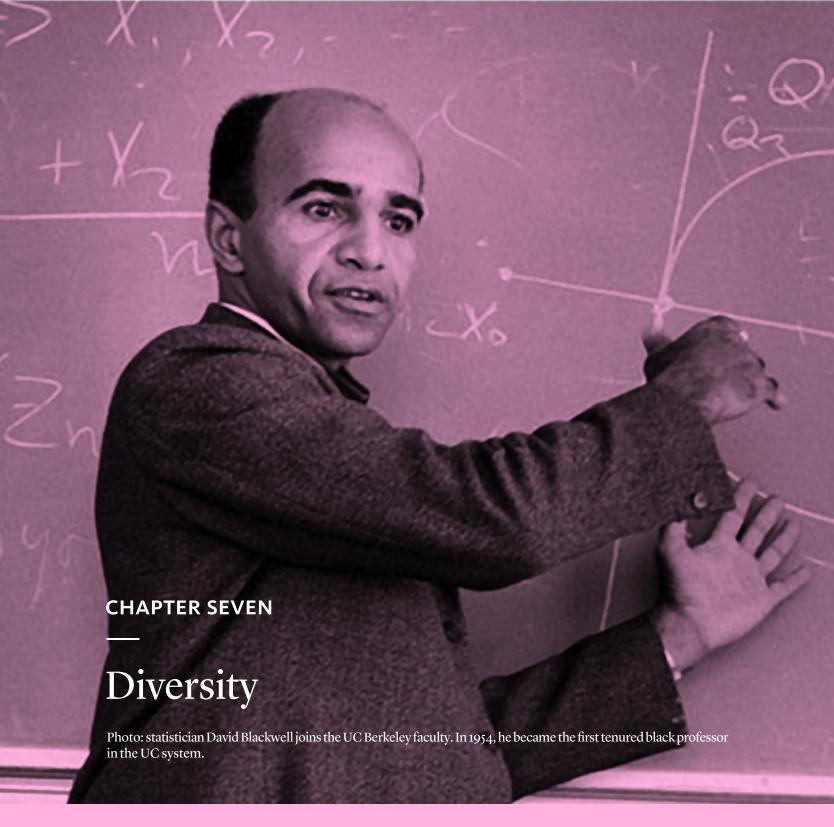


6.3.2 Separation Reasons for Career Staff, FY 2016-17



Campuses experience a wide range of separation rates among their career staff, which may reflect different mixes of employees and different work environments. High turnover is often costly in terms of lost productivity, lost institutional knowledge and replacement costs.

Nearly 20 percent of separations are due to retirement, a result of the aging baby boomer population. However, resignations to accept another job or with no reason given are collectively rather high, suggesting potential dissatisfaction among career employees.





1879

A divorced mother of five, Clara Foltz sued UC Hastings for admission in 1879 and became the first woman lawyer on the West Coast.



1897

Phoebe Apperson Hearst becomes the first woman regent of UC. As a philanthropist she gave scholarships for women and buildings for women to develop socially, intellectually and physically.

DIVERSITY

History

The University of California has a rich history of diversity and inclusion. Since women were admitted to UC equally with men within a year of the University's opening in 1869, it is not surprising that UC would produce California's first licensed female architect, the West Coast's first female lawyer and a first female UC regent before the turn of the twentieth century. In the twentieth and twenty-first centuries, UC produced the first mom in orbital space and the first American woman to walk in space. The first female president of the NCAA was UC San Diego athletic director, Judith Sweet.

UC alum also broke several important color barriers. Jackie Robinson became the first African American in Major League Baseball in 1947 and Ralph Bunche became the first person of color to win a Nobel Prize in 1950—the Nobel Peace Prize.

The policies of the University have created a welcoming environment for students from around the world. In 1930, nearly 10 percent of all international students in the United States attended UC. In 2012, UC Berkeley announced a \$1 million scholarship fund for undocumented students.

UC also places high value on the contributions of students of different abilities, orientations and cultural backgrounds. The Physically Disabled Students program began in 1970 at UC Berkeley and has been a catalyst for other similar programs systemwide. In 2005, UC Riverside was the first public university campus in the nation to offer a gender-neutral housing option. By 2017 and with the inclusion of UC Irvine, UC counts five campuses named as Hispanic-Serving Institutions.

Goals

The University of California strives to foster a diverse and inclusive community for students, faculty and staff. The University has a long history of supporting initiatives that foster an inclusive living, learning and working environment.

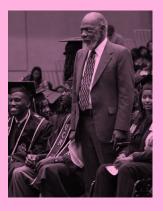
The University's diversity goals are established in Regents Policy 4440: University of California Diversity Statement, which states, in part:

Because the core mission of the University of California is to serve the interests of the State of California, it must seek to achieve diversity among its student bodies and among its employees.



1928

Celeste Turner Wright joins the faculty of University Farm. She was the first woman faculty member with a Ph.D. and the first woman to become a tenured faculty member.



1958

Roy Overstreet was the first African American to receive a degree from UC Riverside. He went on to become the country's first black oceanographer, tracking oil spills and nuclear material in oceans.

The State of California has a compelling interest in making sure that people from all backgrounds perceive that access to the University is possible for talented students, staff and faculty from all groups.

Therefore, the University of California renews its commitment to the full realization of its historic promise to recognize and nurture merit, talent and achievement by supporting diversity and equal opportunity in its education, services, and administration, as well as research and creative activity.

The University particularly acknowledges the acute need to remove barriers to the recruitment, retention, and advancement of talented students, faculty, and staff from historically excluded populations who are currently underrepresented.

Findings

UC is making progress in several key areas related to diversity and inclusion. These include:

- A growing number of Hispanic/Latino(a) undergraduates
- Increasing undergraduate graduation rates across all racial/ethnic groups
- Increasing proportions of female ladder-rank faculty across all discipline groups and a slight increase in the percentage of Hispanic/Latino(a) faculty
- Slow but steady progress in the percentage of underrepresented graduate academic students
- An increasingly diverse workforce of career staff

At the same time, challenges include:

- Low enrollment of African American and American Indian undergraduate students
- Low proportion of female and underrepresented faculty, compared to availability pools in most disciplines (presented in Chapter 5)
- Undergraduates of historically underrepresented groups reporting not feeling respected on campus
- Employee satisfaction issues from the staff engagement survey (presented in Chapter 6 of this report)
- The graduation gap between underrepresented undergraduates and White and Asian undergraduates (presented in Chapter 3 of this report)

Evaluating diversity

UC evaluates its diversity in a variety of ways: current demographic characteristics and trends of its students, faculty and staff; analysis of the academic pipeline from entry to exit; and survey data that reveal perceptions of campus climate and respect.



1968

In the wake of the assassination of Dr. Martin Luther King, African Americans at UCSF organized into a Black Caucus to further equality on campus. Caucus co-founder Joanne Lewis.



19/0

A group of UC Berkeley students with disabilities founded the Physically Disabled Students Program, offering comprehensive services designed and provided by people with disabilities. Chapters 1, 2, 3 and 4, present an overview of trends for undergraduate, graduate academic and graduate professional students, faculty and staff. This feeds into an overview of the University by race/ethnicity and gender.

As shown in indicator 7.3.1, trend data illustrate growing proportions of underrepresented and international students in the undergraduate population. Over the last 15 years, the proportion of Hispanic/Latino(a) undergraduates has grown tremendously, reflecting the growing number of Hispanic/Latino(a) students in California and improved high school graduation rates. Five UC campuses (Irvine, Merced, Riverside, Santa Cruz and Santa Barbara) are designated by the federal government as Hispanic-Serving Institutions (HSIs). A sixth institution, UC Davis, recently applied for HSI status, and UCLA and UC San Diego have seen significant growth in their Hispanic student populations as well.

Chapter 4, indicator 4.1.2, shows that among graduate academic students, underrepresented populations show steady increases across disciplines, with growth in international students, primarily in physical science and engineering. Female students are the majority in all disciplines except for physical science and engineering. Graduate professional degree programs show similar patterns for underrepresented and international students, with variation by discipline. Education programs have a larger proportion of underrepresented students, and business and other professional degree programs have growing international populations. The proportion of female students in graduate professional degree programs is trending slightly downward but remains around 50 percent or higher for all disciplines except business.

The proportion of women and underrepresented groups in the faculty continues to grow at a modest pace. Younger faculty cohorts are noticeably more diverse than older cohorts. Compared to ladder-rank faculty, many other academic positions are more ethnically diverse and gender balanced because they experience more rapid turnover. Still, comparing UC's faculty diversity to peer research institutions, UC places 3rd in terms of female faculty and 2nd in terms of underrepresented faculty.

For staff, the proportions of nonwhite and female Managers and Senior Professional (MSP) and Senior Management Group (SMG) positions are smaller than their proportions in Professional and Support Staff (PSS) positions. The proportion of females among ladder-rank faculty is lower than proportions among other academic employees, as shown in Chapter 5.

Pipeline analysis

UC diversity is also assessed by examining the various steps along the academic pipeline to determine gaps in access or attainment.

In the undergraduate pipeline from high school graduation to the end of the first year at UC, about 6 in 10 California public high school 12th-graders come from historically underrepresented groups. However, only about 4 in 10 of these 12th-graders who enrolled in UC and persisted past their first year came from underrepresented



1974

Author, social critic and civil rights leader James Baldwin delivers a series of lectures on the Berkeley campus as part of the Regents Lectureship Program.



1987

Rosemary Schraer named UC Riverside chancellor, becoming the first female chancellor in the UC system.

ethnic groups. This is a strong indication UC is not keeping pace with the diversity of California high school graduates.

Surveying students about diversity on campus

This chapter presents responses to the UC Undergraduate Experience Survey (UCUES), given every two years to all undergraduates. The University's goal is to ensure that all students are respected on campus, regardless of race/ethnicity, religious affiliation, gender, sexual orientation or political beliefs.

University of California Undergraduate Experience Survey (UCUES) data show most undergraduates feel students of their race/ethnicity are respected on campus, but the proportion of African American respondents sharing this perspective is lower than other groups. Among religious identifications, Muslim and Jewish students are less likely to feel respected. LGBQ students are also less likely to feel respected, as are students identifying as conservative politically.

Looking forward — diversity initiatives

Through its college preparation outreach programs, UC devotes considerable resources to college preparation support for more than 100,000 K–12 and community college students each year. This effort results in a greater number of students who are qualified for UC. Of the high schools served by UC, roughly 70 percent are consistently among the lowest-performing schools in the state. Participants in these programs have higher rates of enrollment in California public college segments, and those who are accepted to UC enroll at higher rates than their peers.

UC's college preparation programs help remove obstacles to attending UC, encouraging participants to apply and enroll at UC at higher rates than those for California public high school graduates overall. The most recent data for fall 2017 show the enrollee yield — the ratio of students admitted to UC who enroll — for participants in UC academic preparation programs is higher (60.9 percent) than for all California public high school graduates (54.3 percent.)

African American participants in a UC college preparation program were also more likely to enroll at a UC campus than were their peers who did not participate (62.2 percent compared to 54.3 percent).

In addition to funding UC's college preparation programs, the 2016–17 state budget for UC included \$20 million in one-time funding for support services for "low-income students and students from underrepresented minority groups." This included students enrolled in high schools eligible for supplemental funding under the Local Control Funding Formula (LCFF) due to their large populations of low-income or educationally disadvantaged students. UC campuses used this funding primarily to increase the application, admission and enrollment of students from these schools, and to provide academic support services to educationally disadvantaged students who enrolled. Outcomes from this initiative were reported to the legislature in fall 2017.



1993

UC Riverside opens its LGBT Resource Center. It is the first of its kind on a California campus and serves as a model that has since been replicated across the UC system.



1996

Following the passage of Proposition 209 that ended affirmative action for university admissions, students at several UC campuses protest and rally to demand the university resist the new law. In October 2015, the Office of the President launched the President's Diversity Pipeline Initiative (DPI) to expand the academic pipeline to the University of California for undergraduate students, graduate students and faculty who remain persistently underrepresented at UC. This Initiative builds on existing University resources, including admissions policies and practices, academic preparation (outreach) programs and community partnerships. Outcomes from the DPI include:

- Admissions of African American freshmen in fall 2017 were up by 30.6 percent from fall 2015
- 3.8 percent of fall 2018 California freshman applicants were from underrepresented group (URG) backgrounds
- 38.4 percent of new freshmen from California public high schools in fall 2017 were from URG backgrounds
- UC college-prep programs saw a 17.4 percent increase in African American student enrollment from 2012–13 to 2016–17

The UC-HBCU Initiative improves diversity and strengthens graduate programs by strengthening relationships between UC campuses and Historically Black Colleges and Universities (HBCUs). Since its inaugural year (2012), more than 315 HBCU scholars have participated in the program, which offers faculty-led summer research opportunities and year-round mentoring. Twenty-seven Ph.D. students and two M.A. students from HBCUs are currently enrolled at UC, and three M.A. students have already graduated from UC as a direct result of the program.

The President's Postdoctoral Fellowship Program (PPFP) is a keystone program at the University of California supporting diversity within UC's faculty. The PPFP includes financial support and career development training for postdoctoral scholars with the potential to become successful faculty within the UC system. Fellows must have a demonstrated record of commitment to diversity in their research, teaching and/or outreach. The application process is highly competitive, with more than 500 applicants annually for 20 fellowships. Over 850 postdocs applied in 2017-18. The President's Postdoctoral Fellowship Program and related Chancellors' Fellowship Programs at individual campuses have accounted for 11.5 percent of new underrepresented faculty hired at UC in the last ten years, with 165 PPFP fellows alone hired into UC tenure-track positions since 2004.



2000

UCSF radically redesigns its core curriculum to promote integration of disciplines, bringing cultural, social and behavioral factors into the teaching of biomedical and clinical issues.



2005

UC Riverside becomes the first public university campus in the nation to offer a gender-neutral housing option, Stonewall Hall.

For more information

May 2016 UC Annual Accountability sub-report to the Regents on diversity: regents.universityofcalifornia.edu/regmeet/may16/e3.pdf

March 2014 UC campus climate Regents item: regents.universityofcalifornia.edu/regmeet/mar14/e2.pdf

UC workforce diversity: universityofcalifornia.edu/infocenter/uc-workforce-diversity

Undergraduate admissions data: university of california.edu/infocenter/admissions-residency-and-ethnicity

Graduate admissions data: universityofcalifornia.edu/infocenter/graduate-admissions

Degrees awarded data: universityofcalifornia.edu/infocenter/degrees-awarded-data



2009

UC provides honorary degrees to Japanese Americans and Japanese nationals whose educations were interrupted when they were sent to internment camps during World War II.

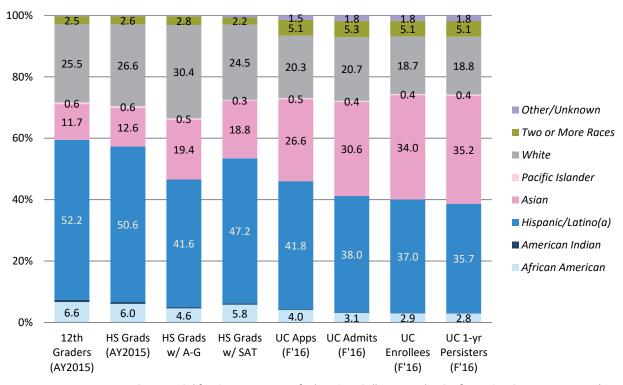


2015

UC Santa Barbara is named a Hispanic-Serving Institution, making it the first member of the Association of American Universities (and fourth of now five) UC campuses to earn the designation.

UC is not keeping pace with the ethnic diversity of California high school graduates.

7.1.1 Racial/ethnic distribution of the UC undergraduate pipeline Universitywide
Fall 2016 new freshman cohort from California public high schools



Sources: California Department of Education; College Board; UC Information Center Data Warehouse

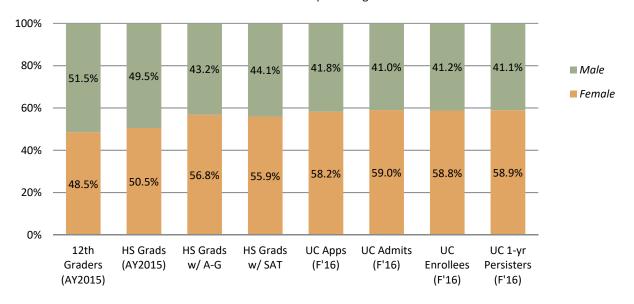
In 2015-16, about 6 in 10 California public high school 12th-graders were from historically underrepresented ethnic groups (American Indian, African American, Hispanic/Latino(a)). However, only about 4 in 10 of these 12th-graders who enrolled in UC and persisted past their first year were from underrepresented ethnic groups. As shown in the chart above, students from underrepresented ethnic groups make up the following share of students along the academic pipeline:

- 59 percent of 12 graders and 57 percent of high school graduates
- 47 percent to 53 percent of the potentially college eligible pool as measured by the percentage who completed the sequence of "a-g" high school required for admission, and by those who took the SAT or ACT
- 46 percent of UC freshman applicants
- 41 percent of UC freshman admits
- 40 percent of UC freshman enrollees
- 39 percent of UC freshmen who persisted past their first year

Diversity 117

UC enrolls a greater share of women undergraduates, compared to California high school graduates.

7.1.2 Gender distribution of the UC undergraduate pipeline
Universitywide
Fall 2016 new freshman cohort from California public high schools



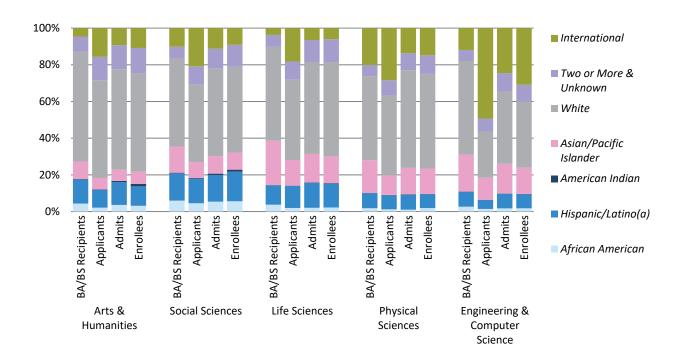
Sources: California Department of Education; College Board; UC Information Center Data Warehouse

In 2015-16, about half of California public high school 12th-graders were female. However, 60 percent of these 12th-graders who enrolled in UC and persisted past their first year were female. As shown in the chart above, female students make up the following share of students along the academic pipeline:

- 49 percent of 12th graders and 50 percent of high school graduates
- 56 percent to 57 percent of the potentially college eligible pool as measured by the percentage who completed the sequence of "a-g" high school required for admission, and by those who took the SAT or ACT
- 58 percent of UC freshman applicants
- 59 percent of UC freshman admits, enrollees, and those who persisted past their first year

In graduate academic doctoral fields, UC is keeping pace with the racial/ethnic diversity in the U.S.

7.2.1 Racial/ethnic distribution of U.S. BA/BS degree recipients from US institutions compared to UC doctoral applicants, admits and enrollees from U.S. institutions Universitywide 2015-16



Sources: Integrated Postsecondary Educational Data System; UC Information Center Data Warehouse

In 2015-16, the proportion of UC doctoral applicants, admits and enrollees from underrepresented ethnic groups (African American, Hispanic/Latino(a), and American Indian) closely matched the pool of Bachelor degree recipients from U.S. colleges/universities, in most fields.

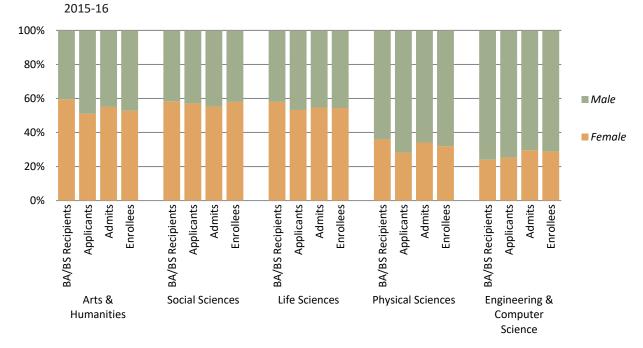
UC's graduate programs draw students from across the nation and around the world, including its own undergraduate students, who make up about onetenth of UC's graduate students. As a result, UC's efforts to diversify its undergraduate students also help to diversify its graduate academic population.

Because recent Ph.D. recipients create the talent pool for new faculty, a critical means for increasing the diversity of the faculty is to increase the diversity of doctoral degree recipients.

Diversity 119

In graduate academic doctoral programs, UC is approaching parity with the gender diversity of U.S. institutions, in most fields.

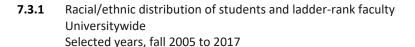
7.2.2 Gender distribution of US BA/BS degree recipients from US institutions compared to UC doctoral applicants, admits and enrollees from US institutions Universitywide

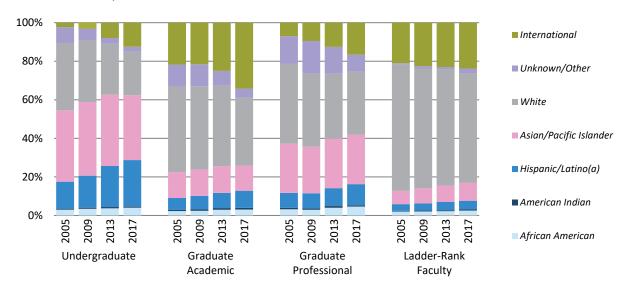


Sources: Integrated Postsecondary Educational Data System; UC Information Center Data Warehouse

Female representation among UC doctoral enrollees from U.S. colleges and universities is within 5 percentage points of the female representation among all U.S. Bachelor's degree recipients in all fields except Engineering & Computer Science, where the representation of women is higher than that of U.S. BA recipients. However, female students make up less than half of the U.S. Bachelor degree recipients and UC doctoral students in Physical Sciences and Engineering & Computer Science.

Undergraduates have the highest proportion of underrepresented students. Graduate professional and academic populations vary in their share of international students. Ladder-rank faculty are less diverse overall.





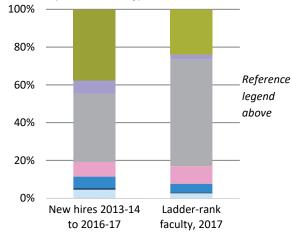
Source: UC Information Center Data Warehouse. Undergraduates include approximately 300 postbaccalaureate teaching credential students. "Two or more" are included in unknown/other.

Twenty-nine percent of undergraduate students are from underrepresented (Hispanic/Latino(a), American Indian, and African American) groups. About 13 percent of graduate academic and 16 percent of graduate professional students are from underrepresented groups. International students represent 34 percent of graduate academic and 17 percent of graduate professional students.

A comparison to ladder-rank faculty is presented because these faculty have the primary responsibility for the delivery of instruction and the supervision of research. They are also responsible for admissions and curriculum. Compared to the student population, a higher proportion of faculty identify as white or are international citizens. More information on faculty diversity is available in chapter five.

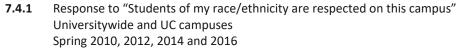
The graph below compares recent assistant professor (tenure-track) hires to all ladder-rank faculty. Information on availabilities compared to hires by discipline group is presented in chapter 5.

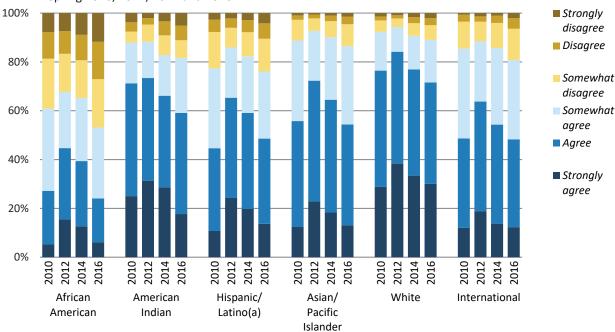
7.3.2 Assistant professor hires compared to ladder-rank faculty 2013-14 to 2016-17 (hires) and fall 2017 (current faculty)



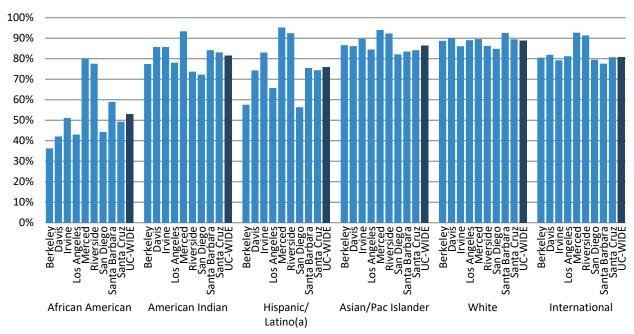
Diversity 121

The share of students who felt their race/ethnicity group was respected declined for all groups between 2014 and 2016.



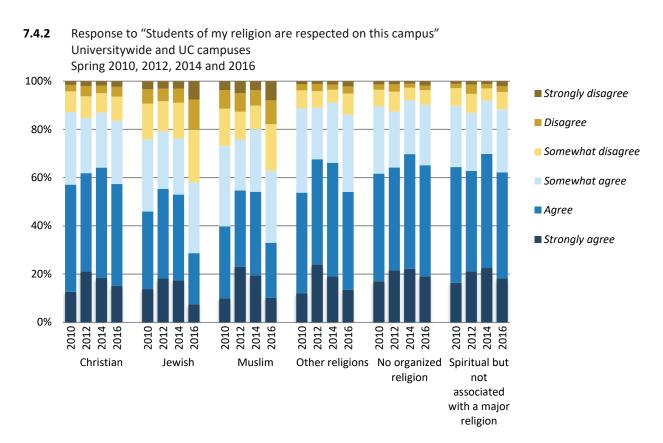


Percent that somewhat agree, agree or strongly agree, 2016

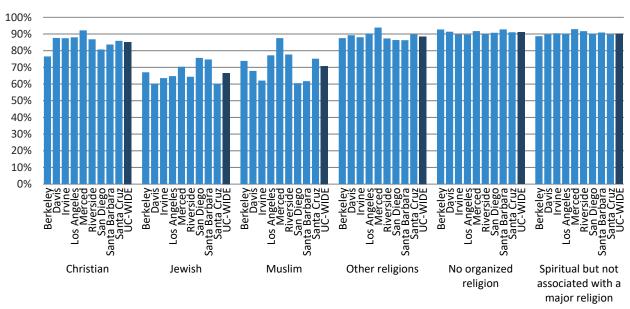


Source: UCUES

The share of students who felt their religion was respected declined between 2014 and 2016, particularly for Jewish and Muslim students.



Percent that somewhat agree, agree or strongly agree, (2014 and 2016 combined)

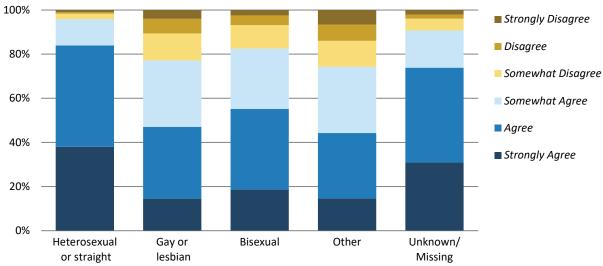


Source: UCUES. 2014 and 2016 are combined due to small cell sizes. The religion grouping is in the appendix.

Diversity 123

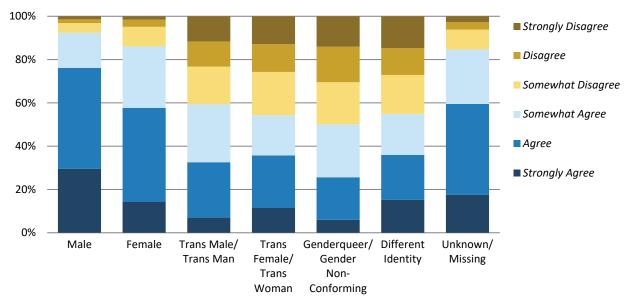
Undergraduates who identify as LGBQ and those who identify as other than male or female are less likely to feel respected on campus than those who do not.





Source: UCUES. Only one year is shown because the response options changed in 2016. Campus data not shown due to small group sizes.

7.4.4 Response to "Students of my gender are respected on this campus" Universitywide, Spring 2016

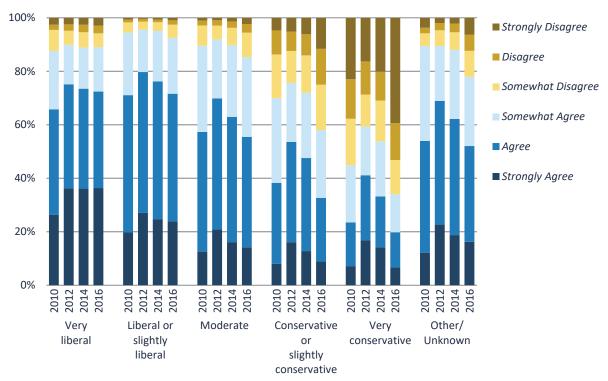


Source: UCUES. Only one year is shown because the response options changed in 2016. Campus data not shown due to small group sizes.

Data of counts and shares by gender and sexual orientation are available on the last tab of university of california. edu/infocenter/ucues-data-tables-2016.

Conservative undergraduates are less likely to feel that students of their political affiliation are respected on campus than those with liberal or moderate political opinions.

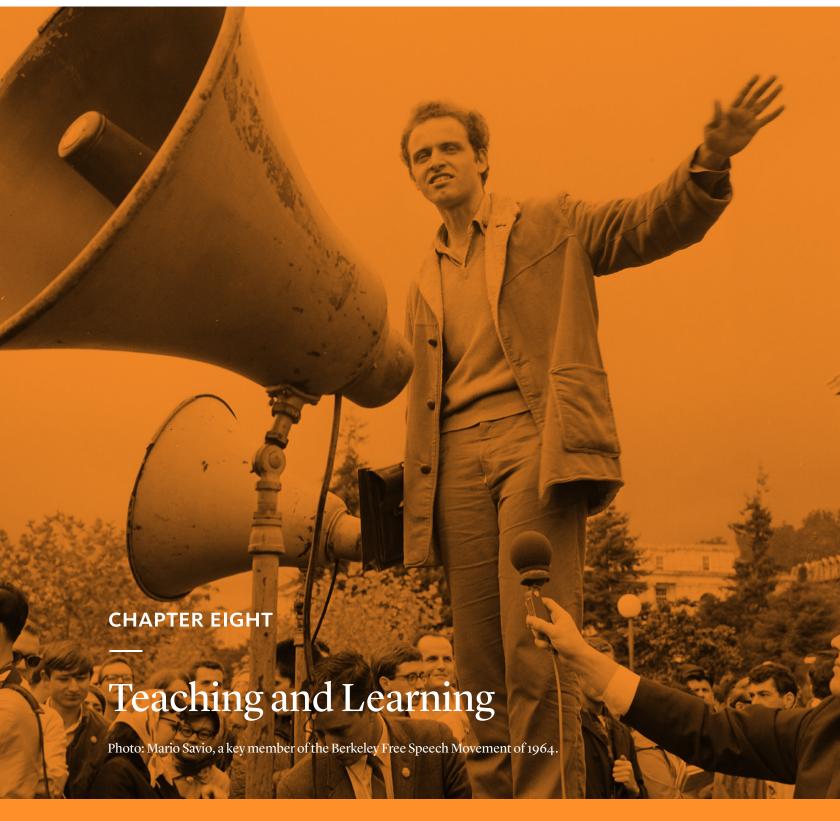
7.4.5 Response to "Students of my political beliefs are respected on this campus" Universitywide Spring 2010, 2012, 2014 and 2016



Source: UCUES

Data of counts and shares by political orientation are available on the last tab of university of california. edu/infocenter/ucues-data-tables-2016.

Research 125



1877 —

Henry D. Bacon donates his private library and art collection to the university, along with \$25,000 to be matched with state funds for a library building. By the time of its opening in 1881, the library collection at Bacon Hall holds 17,000 volumes.



1891

UC Extension begins, offering its first class away from the main campus. In 1893, the Regents adopt an extramural instruction plan that formally establishes the University Extension program.

TEACHING AND LEARNING

History

With the founding of The University of California in 1868, the University commenced fulfilling its primary mission of educating Californians in 1869. In its first act of pursuing educational equity, women were admitted to UC equally with men in 1870. With any new institution there will be firsts in all areas; within the first thirty years and still during the 19th century, UC opened schools or departments in pharmacy, medicine, chemistry, dentistry, agriculture, viticulture, mining, literature, history, economics, political science, jurisprudence, physical education, botany, civil engineering and commerce, as well as others. In 1891, the first extension course was offered and UC Extension opened in 1893 to offer classes to Californians away from the main campus.

With the 20th century came more firsts and educational innovations: from the first linguistics department in the Western Hemisphere in 1901, through the start of the UC Education Abroad Program in 1962, to the opening of the Preuss School on a UC campus for low-income, highly motivated middle and high school students in 1999.

At the beginning of the 20th century, UC had two campuses — Berkeley and San Francisco. Two more campuses would expand the reach of on-campus learning, Davis (1905) and Los Angeles (1919), before the Regents made a first of its kind formal proclamation in 1937 of the multicampus "One University" concept. Five more campuses would add to this vision before the turn of the 21st century: Santa Barbara (1944), Riverside (1954), San Diego (1960), Santa Cruz (1965) and Irvine (1965). Merced opened in 2005 to better serve the growing population in the Central Valley.

Overview

The University of California provides its students with a rich learning environment created by faculty actively engaged in both teaching and academic research. Student learning at UC involves classes, seminars and lab sections enhanced by collaboration with experienced faculty and researchers on research projects. Through these activities, faculty and students engage in a learning process that helps students develop critical thinking, communication and problem-solving skills, as well as discipline-specific knowledge.

Educating students and the public

UC's faculty are principally responsible for maintaining UC's academic excellence and promoting student success. Student retention, graduation rates and measures of effectiveness are presented in Chapter 3. This chapter focuses on the learning experience of UC's undergraduate and graduate students, reporting what skills they have learned, their engagement with faculty and their peers, and satisfaction with their UC experience. A majority of



1905

UC purchases the book and manuscript collections of the eminent historian Hubert Howe Bancroft, laying the foundation for one of the nation's most widely used special research libraries.



1937

The Regents make a formal proclamation of the multicampus "One University" concept — the first of its kind.

both undergraduate and graduate students report improvement in academic skills. This chapter also reports on the composition and workload of instructional staff across different academic disciplines and professional programs.

Expanding learning opportunities beyond students on campus demonstrates the connection between the teaching and the public service missions of the University. UC Extension offers adult professional and continuing education programs to Californians and people around the world. University Extension enrolls hundreds of thousands of Californians in its programs each year.

Promoting educational effectiveness

UC is committed to continuous improvement of instruction and employs a range of pedagogical and assessment strategies to enhance and support student learning. Campuses offer pedagogical development and training for faculty and teaching assistants to promote the use of evidence-based teaching practices and improve the quality of teaching and learning. UC's teaching and learning centers and offices of instructional development train hundreds of instructors each year, improving the quality of education for students in all disciplines across all ten campuses.

UC promotes educational effectiveness by supporting assessment of student learning. Assessment strategies include the development of program-level student learning outcomes and integration of evidence of student learning into academic program reviews. Programs across UC are undertaking curriculum redesign and improvement as a result of assessment work. Much of this aligns with the expectations of regional accrediting agencies, in particular the WASC Senior College and University Commission (WSCUC). As part of WSCUC accreditation, UC campuses assess five main core competencies of student learning: writing, oral communication, quantitative reasoning, information literacy and critical thinking. Each UC campus posts its WSCUC accreditation reports online.

Innovative instructional offerings

UC faculty develop and teach an ever-expanding catalog of online courses and programs, expanding learning opportunities for UC and non-UC undergraduates, graduates and professional students. Through the UC cross-campus enrollment system (crossenroll.universityofcalifornia.edu), UC provides undergraduates access to high-demand courses offered at other UC campuses, increasing flexibility and opportunities to complete one's degree.

For non-UC students considering matriculation at a four-year university or resuming their studies, UC offers for-credit online courses that may transfer to other colleges and universities. UC Online (http://www.uconline.edu) provides courses that span a wide range of disciplines. UC Extension offers online continuing education courses, professional certificates and post-baccalaureate programs for those seeking to advance their education and to enhance their professional skills.



1962

The UC Education Abroad Program starts by sending 80 UC students to the University of Bordeaux in France.



1969

Berkeley students and the Third World Liberation Front strike for scholarly programs focusing on understudied histories, this leads to the creation of an ethnic studies department.

In addition to online courses, UC leverages instructional technologies to enhance instruction and promote success. UC continues to develop and refine hybrid courses using multimedia resources, videos, podcasts, e-books, and other technology-based tools. UC follows best instructional practices to embed innovative technologies into course design and focuses on creating online and face-to-face learning experiences that encourage collaboration and maximize faculty-student and peer-to-peer interactions. Increasingly, UC courses utilize a flipped model of instruction, where lectures and other traditional classroom content are provided online, and classroom time is dedicated to group discussions and problem-solving activities, and other experiential exercises.

Ongoing assessment and data-driven approaches to teaching and learning are integral parts of UC's use of technology. Several UC campuses have adopted assessment systems that use online conceptual models and adaptive learning tools to determine students' knowledge quickly and accurately. Based on responses to questions, the software determines concepts or topics where each student needs to focus. Assessment and LEarning in Knowledge Spaces (ALEKS) uses web-based adaptive tools to provide students with individualized feedback and learning pathways in entry-level math and chemistry courses. As part of the 2015 state budget framework agreement, three UC campuses engaged in a pilot study of the impact of adaptive learning technologies on student success and as a mechanism to strengthen instruction. The primary finding of the study was that when students use adaptive learning technology as intended, results are positive in relation to a student's overall performance in the course to which it is applied.

UC is enhancing student learning opportunities and success by expanding summer course offerings (in-person and online) to reduce students' time to degree and enrich their academic experience. Offering bridge experiences and orientation during summer also helps incoming students transition to campus life and prepare them for the rigorous courses at the undergraduate level.

For more information

Campus websites: universityofcalifornia.edu/uc-system/parts-of-uc

 ${\bf Summer\ enrollment:}\ university of california. edu/infocenter/summer-enrollment$

UC Education Abroad Program: university of california.edu/infocenter/uc-eap

 $\label{lem:undergraduate} \textbf{Undergraduate research experiences:} \ university of california. edu/infocenter/uc-undergraduate-student-research$

Adaptive Learning Technology Pilot report: ucop.edu/institutional-research-academic-planning/_files/BFI-Adaptive-Learning-Technology-Report.pdf



1999

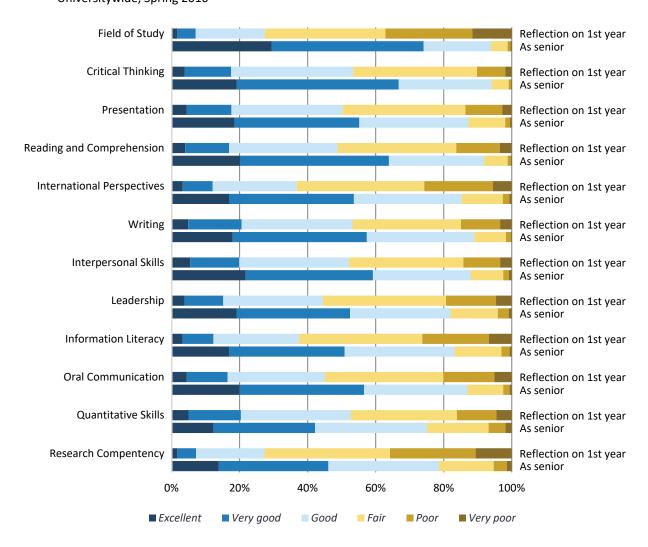
The Preuss School at UC San Diego for low-income, highly motivated students who strive to become the first in their families to graduate from college opens with 150 enrolled in grades 6-8.



2013

The Arthur C. Clark Center for Imagination is established at UCSD to study the phenomenon of the imagination, focusing on engagement in the arts, literature, science, medicine and technology. UC undergraduates experienced significant improvement between their freshman and senior years in multiple areas, including reading and comprehension, critical thinking, research competency, and understanding of their chosen field of study.

8.1.1 Self-reported skill levels from first year to senior year Seniors who entered as freshmen Universitywide, Spring 2016



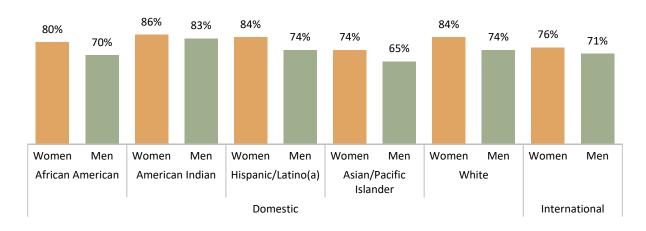
Source: UCUES

The University of California Undergraduate Experience Survey (UCUES), which is conducted every two years, provides a valuable source of information on how UC undergraduates view their educational experience. These indicators also show student perception of how much they have developed core competencies of student learning. In UCUES, students are asked to reflect on their skill

levels between their freshman and senior years. During this period, UC students self-reported significant improvements in all areas, including reading and comprehension, critical thinking, research competency, understanding international perspectives and understanding of their chosen field of study.

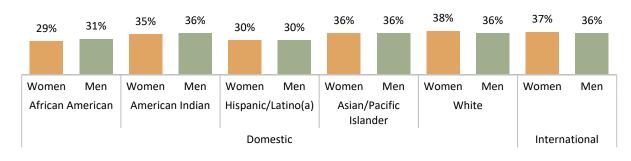
Research participation is high among UC's seniors across racial/ethnic and gender groups.

8.1.2 Students completing a research project or research paper as part of their coursework Universitywide seniors Spring 2016



Source: UCUES

8.1.3 Students assisting faculty in conducting research Universitywide seniors Spring 2016



Source: UCUES

One of the distinct benefits of attending an academic research university is the opportunity for undergraduates to conduct research, both through class research projects and by assisting faculty with their ongoing research.

Overall, a high percentage of undergraduates reported that they participated in research. Women

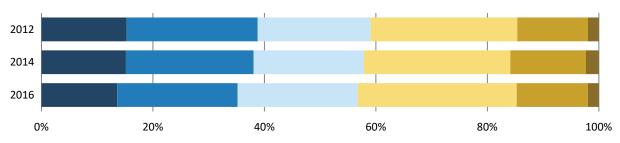
were more likely than men to indicate completing a research project or paper as part of their coursework. However, there was no difference in the proportion of women and men who reported having assisted faculty with research. Both of these findings held across racial/ethnic groups.

Teaching and Learning 131

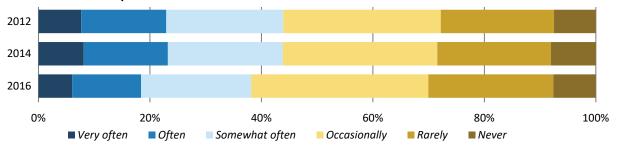
More than half of students contributed to a class discussion, and more than a third found a course so interesting that they did more work than required. More than one third of students worked with a faculty member on an activity other than coursework at least once.

8.1.4 Student responses to questions about areas of engagement Universitywide Spring 2012 to 2016

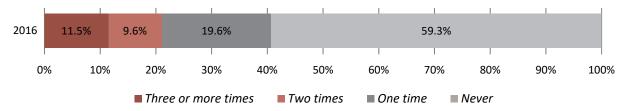
During this academic year, how often have you contributed to a class discussion?



During this academic year, how often have you found a course so interesting that you did more work than was required?



During this academic year, how often have you worked with a faculty member on an activity other than coursework?



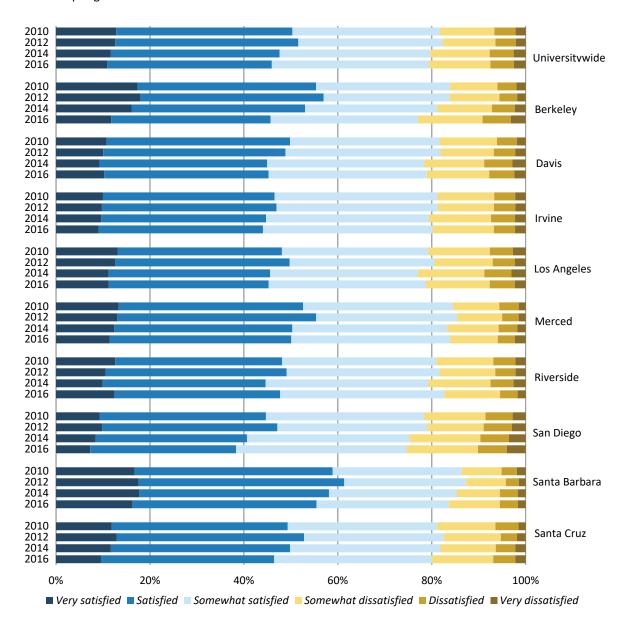
Source: UCUES. 2014 and 2012 data are not presented in the last item because the response scale changed in 2016.

More than half of students reported that they contributed to class discussions at least somewhat often, and more than a third at least somewhat often went beyond required coursework in a class

they found interesting. Forty-one percent worked with a faculty member on an activity other than coursework, such as research or creative projects, at least once.

Survey data suggest that student satisfaction with their overall academic experience has remained high over the last four UCUES survey administrations.

8.1.5 Student satisfaction with overall academic experience Universitywide and UC campuses Spring 2010 to 2016



Source: UCUES. Note that unlike previous Accountability reports, which were limited to seniors, this data includes all UCUES respondents.

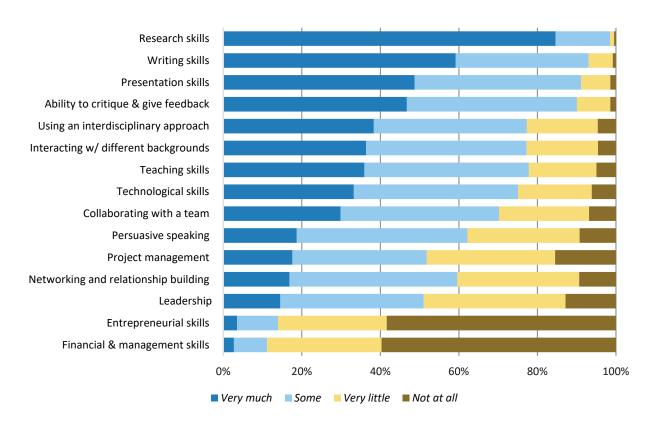
For the UC system overall and for most campuses, the percent of students who were satisfied (somewhat through very satisfied) has remained as high as about 80 percent.

However, student satisfaction dropped slightly since 2012. Specifically, fewer students indicated that they were "satisfied" or "very satisfied" with their overall academic experience.

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UC doctoral students credit their doctoral program with having strengthened multiple skill sets, including research, writing and presentation skills.

8.2.1 Self-reported skill levels after completion of doctoral program Universitywide Spring 2018



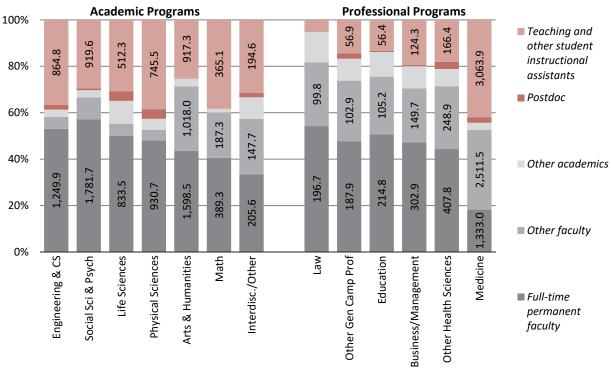
Source: UC 2017 Ph.D. Career Pathways Alumni Survey

In 2017, the Ph.D. Career Pathways Alumni Survey was sent to all University of California PhD degree recipients—in all disciplines—who graduated during the 2001-02, 2008-09 and 2013-14 academic years. Similar to UCUES, it is a valuable source of information on how students viewed their educational experience. Among other questions, the survey asked for perceptions on how much students' doctoral programs helped them acquire or develop core competencies of student learning.

PhD degree recipients self-reported learning improvements in multiple areas, including research, writing, presentation skills, and the ability to critique and give feedback. Specifically, graduates pointed to their programs' strength in developing the ability to critically analyze and evaluate findings and research and to apply research methodologies, tools and techniques appropriately. They also identified areas for improvement among doctoral programs, such as developing leadership, entrepreneurial, and financial and management skills.

The composition of the instructional workforce varies considerably by discipline, with full-time, permanent faculty representing the majority of general campus instruction.

8.3.1 Instructional workforce FTE composition, by employee type and discipline Universitywide 2016–17



Source: UC Corporate Personnel System¹

Across all general campus disciplines at UC, full-time, permanent faculty constitute 40 percent of the total instructional workforce. Fields where full-time permanent faculty represent 50 percent or more include Engineering & Computer Science, Social Science & Psychology, Life Sciences, Law and Education. Medicine relies heavily on faculty who also have clinical roles, thus the percent of full-time permanent faculty in Medicine is 18 percent.

"Other faculty" in this indicator includes clinical faculty, most lecturers, adjunct faculty, faculty in residence and visiting faculty. "Student instructional assistants" refers to students acting in supporting

roles, such as teaching assistants, readers and tutors. They typically lead labs and discussion sections for large lecture courses. The "Other academics" category includes administrators and researchers who have instruction functions.

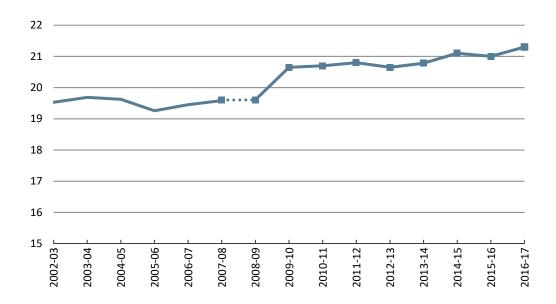
Because full-time permanent faculty have scholarship and research experience, their instruction is a valuable part of a student's learning experience. When faculty incorporate their early research results into their courses, UC students gain access to insights and discoveries even before they are available to the wider research community.

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¹ Academic support staff, such as clerical staff, administration and advisers, including students working in these titles, are excluded. Data are for full-time-equivalent number of academic employees paid with instructional funds.

The student-faculty ratio increases when faculty hiring does not keep pace with increases in student enrollment.

8.3.2 General campus student-faculty ratio Universitywide 2002–03 to 2015–16*



*A revised methodology for calculating the student-faculty ratio is used beginning in 2008–09. Previously, UC calculated this ratio by including only faculty supported by core funds (comprising state general funds, UC general funds, and tuition and fees). Starting with 2008–09, the ratio calculation includes faculty paid through all fund sources (other than self-supporting program fees). This change in methodology better reflects recent increased flexibility in the use of fund sources to pay faculty.

Source: UC Information Center Data Warehouse

One widely used measure of academic quality is the student-faculty ratio. The student-faculty ratio reflects resources available for instruction and the average availability of faculty members to every student. Thus, lower ratios are preferable for students in terms of focused resources for instruction.

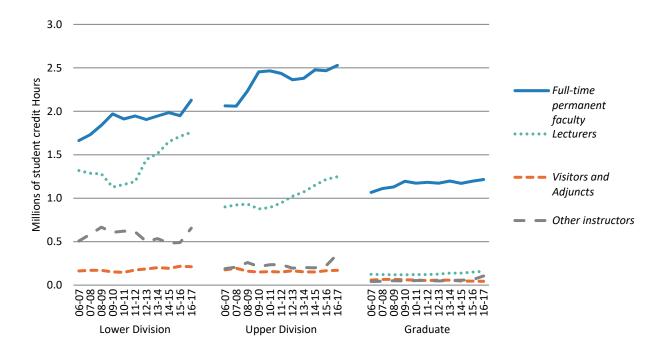
Because the student-faculty ratio varies considerably by degree, major and instructional level (lower-division, upper-division and graduate), student experiences will vary as well. Indicator 8.1.3 on student credit hours (SCH) provides additional insight into the student experience.

The student-faculty ratio has increased at various times in the University's history and particularly in the last decade. During the most recent recession, campuses responded to uncertainty in state funding by delaying faculty hiring, or deciding not to fill vacant faculty positions on a permanent basis.

Despite increasing the size of the faculty by 336 in 2016-17, UC's student-faculty ratio worsened to an all-time high of 21.3 in 2016-17, due primarily to the one-year increase of 12,424 in total enrollment.

At the undergraduate level, lecturers are teaching increasing numbers of student credit hours, although the role of full-time permanent faculty remains strong, especially in upper division courses.

8.3.3 Student credit hours, by instructional staff and class type Universitywide 2006–07 to 2016–17



Source: UC Faculty Instructional Activities dataset¹

Student credit hours (SCH) represent the number of student enrollments in a course multiplied by the number of credits earned from that course. For example, a 4-credit class with 50 students generates 200 SCH; a 2-credit class of 15 students generates 30 SCH. This measure gives an indication of the relative teaching load across different types of instructors at different levels of instruction.

Over time, the full-time permanent faculty at UC have increased their teaching load and maintained contact with more undergraduate and graduate students. In 2016-17, full-time permanent faculty taught 178,000 more lower-division SCH than in

2015-16, whereas lecturers taught 45,000 more lower-division SCH in 2016-17 compared to 2015-16. Overall, a larger number of student credit hours offered by full-time permanent faculty means students have additional opportunities to be taught by leading scholars.

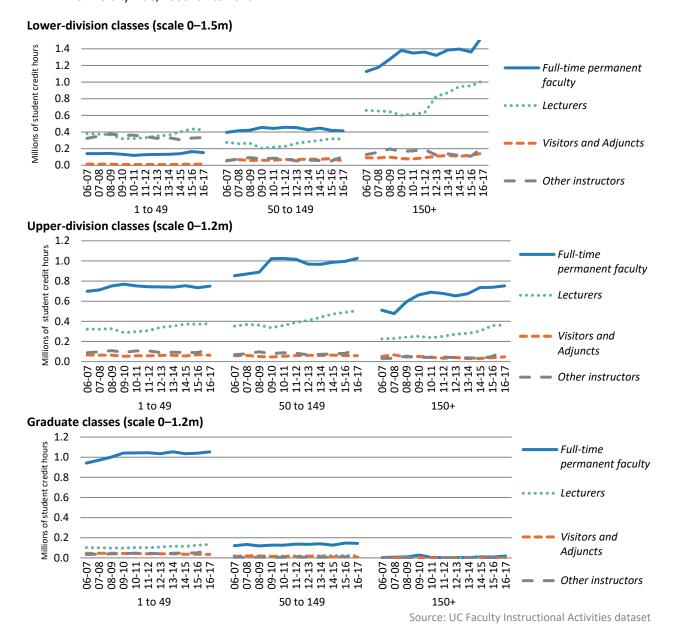
Lower-division courses, such as writing, language and other required courses, are most often taught by lecturers; introductory courses to the major are most often taught by full-time permanent faculty. Upper-division courses, which are core to the student's major, are more likely taught by full-time permanent faculty, as are graduate courses.

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¹ Data are for general campus courses only. These data are submitted annually by UC campuses and contain information on all general campus courses taught in that year.

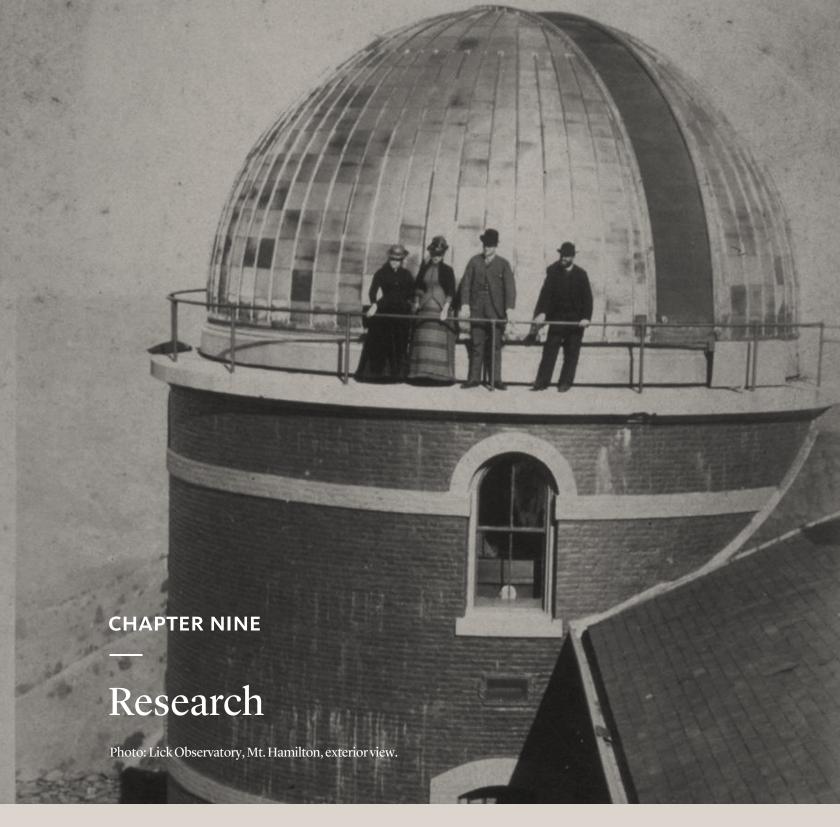
As students progress through their academic careers and enroll in upper-division and graduate classes, they receive more consistent exposure to full-time permanent faculty and smaller classes.

8.3.4 Student credit hours, by instructional staff and class type and class size Universitywide, 2006–07 to 2016–17



In the lower division, full-time permanent faculty generally teach large lecture classes; nonpermanent faculty, such as lecturers, generally teach lecture sections and smaller classes. In the upper-division, student contact with full-time permanent faculty is fairly evenly distributed across classes of all sizes.

Graduate academic students are almost uniformly taught by full-time permanent faculty in classes with fewer than 50 students. The large enrollment increases on 2016-17 resulted in a significant uptick in SCH being offered in lower-division large lecture classes.





1887

The Hatch Act dedicated federal funds for agricultural research for two main purposes: creating agricultural experiment stations, and disseminating new information about soil and plant growth.

1888

Lick Observatory is accepted by the Regents as the Lick Astronomical Department of the University of California, becoming the first permanently occupied mountain-top observatory in the world. The 91-centimeter (36-inch) refracting telescope is first used on January 3, 1888 and remains the world's largest of its kind.

RESEARCH

History

Nineteen years after the University of California was chartered in 1868 as California's land-grant institution under the Morrill Act, the Hatch Act of 1887 linked research and public service to instruction as inseparable elements of the University's mission. It allocated federal funds to land-grant colleges for research at agricultural experiment stations and making the latest agricultural methods publically available. The Hatch Act, after many reauthorizations and expansions, still provides UC funding for agricultural research and cooperative extension.

Federal research funding in the early part of the 20th century focused on agriculture and later, aeronautics, with other fields supported by industrialists, philanthropists and the University's own funds. This changed in the lead-up to World War II, when President Roosevelt recognized the military importance of science and technology research, funding initiatives such as the Manhattan Project. This wartime effort drew upon the talents and research findings of UC scientists and engineers, including teams from UC Berkeley's Radiation Laboratory, founded in 1931 by physicist Ernest O. Lawrence, a UC Nobel Prize Laureate.

The early post-war years saw the creation of the grants program at the National Institutes of Health and the formation of the National Science Foundation. These federal agencies are UC's two largest single sources of sponsored project funding, providing about 44 percent of the roughly \$5 billion in research support UC received from external sources in 2016-17. Thanks in major part to the long history of federal funding, the University of California system has grown into the world's largest and most prominent university research system, with more than 800 research centers, institutes, laboratories and programs that span ten campuses, five medical centers, three national energy laboratories and numerous research facilities.

Evaluating the research enterprise

This chapter presents a largely quantitative description of UC's research activities. The sources of research funding influence the nature of the research. Federal support initiated UC's research mission and currently provides more than half of all research funding (9.1.1). Most research funds pay the salaries and benefits of UC's research community, of which faculty are only a small proportion (9.1.2). While UC's research spans many disciplines, medical research is the largest expenditure component, and its share has grown over the last two decades (9.1.3).

UC performs nearly one-tenth of the nation's academic research (9.1.4). Compared to other research universities, UC has a higher rate of research expenditures per ladder-rank faculty (9.1.5), especially at UC campuses with medical schools (9.1.6). Three National Energy Laboratories are affiliated with the University of California, conducting research that is vital to the nation's security and energy future.



1910

UC establishes the Imperial Valley Experiment Farm (also known as the Meloland field station), an agricultural research station in the parched desert near the Mexican border.



1933

Prohibition ends, allowing the gradual resumption of research and instruction in wine making at Davis.

The viticulture program had been shut down since the start of prohibition in 1919.

This chapter considers the impact of this research on society. One of the goals of research is the dissemination of its findings; the global distribution of downloads from UC's eScholarship Repository (9.2.1) indicates how eagerly this knowledge is sought. The frequency at which UC research is cited is another indicator of its quality and importance (9.2.2). UC research advances the economy and technology through licenses and startups resulting from UC's patents (9.2.4, 9.2.5).

These measures, however, do not capture the wide range of curiosity-driven research at UC. Quantitative measures emphasize fields that receive sizable funding and produce large numbers of publications, such as medicine, physical and material sciences, and engineering. These measures underrepresent research achievements in the arts, humanities, social sciences and theoretical sciences, where work leaves less of a financial footprint, and where results are disseminated in books or performances rather than journal articles.

Quantitative measures cannot capture how UC research contributes indirectly and over time to the state and to the nation through discoveries that improve health, technology and the quality of life; how involvement in research, and hearing about discoveries from the world's foremost researchers enhances the learning experiences of UC's graduate and undergraduate students; or how thoughtful work in the arts and humanities furthers our understanding of ourselves as one species among many on this planet.

The size and scope of UC's research programs

Over the course of a century and a half, breadth of vision has been a virtue of UC's research. All forms of intellectual inquiry are represented in the research enterprise: the architecture of atoms and the structure of the universe; the study of human cognition and the development of machine learning; the study of human pathogens and the creation of disease-resistant crops. The diversity of this vision contributes to society in ways often hard to predict at the outset. Research represents the creation of new knowledge that can be communicated and curated to benefit society.

While research expenditures track only some of this activity, they can indicate how research changes in scope and focus over time, and can provide some relative sense of how research institutions compare to one another. During 2016-17, direct expenditures for research at UC totaled over \$4.5 billion, with federal funds providing about half. Private sources account for about 17 percent — 11 percent from nonprofit organizations and 6 percent from corporate sponsors. About one-quarter represented the University's own funds derived from gifts, endowments, general funds and other sources. Nearly two-thirds of research expenditures in 2016–17 went to salaries and benefits. Of this, about one-quarter went to faculty; the majority supported staff researchers, and about one-fifth went to students and postdoctoral scholars.

Budgets for externally funded research include both a direct cost component — the actual amount spent on salaries, benefits, equipment and materials directly linked to the project — plus a percentage to cover the facilities



1952

UC Berkeley establishes the Lawrence Livermore National Laboratory, an extension of the UC Radiation Laboratory at Berkeley and a complement to the Los Alamos lab in New Mexico.



1957

UC's Air Pollution
Research Center is
organized as a part of the
Citrus Experiment Station
at Riverside. In 1961, it is
made into a universitywide
center to support pollution
research across UC.

and administration required to support the research project, including debt service, maintenance and libraries. These facilities and administration costs are called "indirect costs."

In 2016–17, UC's indirect cost recovery was just over \$1 billion, with the great majority from research activities. (Other forms of sponsored projects, such as service and training grants, also include indirect cost components.) The true indirect costs of research, however, are typically higher than the rate that research sponsors are willing to pay. Rates negotiated with federal agencies range from 53 to 57 percent across UC campuses, but this is still 18 to 20 percentage points below the true indirect costs. Non-federal research sponsors, including corporations, nonprofits and the state of California, have policies that limit indirect cost rates to well below federal rates. The true costs of UC research exceed recovered amounts by hundreds of millions of dollars annually, which must be made up from other sources.

The research community

Research funds principally pay for people's time. Of the roughly 155,000 full-time equivalent (FTE) employees at the University, nearly 27,500, or about 18 percent, were paid with research funds.

UC's Research Workforce, 2016-2017, FTE

Grand total	27,466.2	100%
Faculty	3,068.4	11%
Other academics	4,546.6	17%
Other staff	11,203.0	41%
Postdoctoral researchers	4,337.6	16%
Students	4,310.6	16%

While faculty serve as Principal Investigators for research projects, submitting proposals and managing the research, they make up only 11 percent of the research community, as measured in terms of compensated time. However, this figure, principally representing projects with research grants, underrepresents the time faculty spend on research. Virtually every faculty member at UC engages in research, often involving no expenditures other than the faculty member's time. As in all research universities, career advancement at UC (including tenure), requires a significant body of scholarly or creative work. The research community includes over 4,300 FTE postdoctoral researchers, representing about 6,400 individuals (many post-docs either teach or are less than full-time). As shown in Indicator 5.1.4 of this report, postdoctoral scholars are most prominent in medical research and life science fields.



1968

Scripps Institution of
Oceanography establishes
the Deep Sea Drilling
Program, recovering
ocean cores for research
into the dynamics of
continental drift, earthquakes and volcanism.



1975

The UC Santa Cruz Predatory Bird Research Group forms when only two nesting pairs of peregrine falcons remain in California. The falcon is removed from the endangered species list in 1999.

Research results — enhancing instruction

UC's research enhances the student experience. Faculty incorporate their research into their courses, providing students with access to insights and discoveries, sometimes before they are published. Postdoctoral scholars, representing one-sixth of the research workforce, contribute to instruction by working with graduate students while on their own instructional journey towards becoming the next generation of faculty and researchers. Students make up another one-sixth of the research workforce, mostly graduate students. In 2015–16, of UC's 56,000 graduate students, about 15,000 were employed as paid research assistants. UC undergraduate students also participate in the research community; the 2016 UC Undergraduate Experience Survey found over 40 percent of UC students had been involved in faculty-directed activity other than coursework, such as research or creative projects.

Research results — spurring the economy

Many businesses in California are based on technology developed at UC or rely on the skills of UC graduates. Over the past two decades, UC has secured more licensable patents than any other U.S. research university. Since 1976, over 1,000 startup companies have been founded around UC inventions, with about 85 percent based in California. UC researchers submit nearly five new inventions a day in areas spanning from agriculture, technology, biotech and clean energy. The discoveries made through research become public knowledge through publications and the patent process. These innovations enhance industries, stimulate economies and improve health and well-being.

Research results — communicating and curating knowledge

Publications are perhaps the most visible results of research. Between 2012 and 2017, UC campuses produced about one-twelfth of the nation's research publications. This chapter compares the volume and impact of UC research publications to nationwide averages and to the output of peer AAU institutions.

The books, periodicals and journals in which research findings are published are costly and beyond the reach of many researchers, students and journalists, especially in developing regions. To ensure that research findings become public, UC has adopted Open Access (OA) policies that are the most comprehensive of any academic institution in the United States. All UC employees must now deposit their research papers, upon publication, in the eScholarship repository operated by UC's California Digital Library (CDL) and grant a non-exclusive license to UC to make those materials openly available.

The UC academic community leads the country in advocating for an open scholarly communication environment that emphasizes immediacy, sustainability and expansive access to research. Their advocacy sends the message that the academic community wants to own/control its own work, resist the skyrocketing costs of journal subscriptions, and ensure global access to research findings. These policies sit within a broader effort at UC to



1983

UCSF clinicians and researchers start the country's first outpatient AIDS clinic and inpatient ward at SF General Hospital and mount a multidisciplinary effort to fight the disease.



1990

The U.S. Department of Education establishes the National Center for Research on Cultural Diversity and Second Language Learning at UC Santa Cruz.

reconceive the scholarly publishing environment and restructure its economics to better support open dissemination. CDL is further advancing this effort systemwide by negotiating agreements that reduce or eliminate the costs of publishing OA with publishers, developing models to transition subscription journals to open access, and supporting tools and services to disseminate research.

UC also disseminates its research directly. In 2018, UC is celebrating the 125th anniversary of the founding of the UC Press. In 1893, the University's governing board funded a non-profit publishing program, establishing the UC Press. Today, the UC Press is among the six largest university publishers in the United States, and publishes approximately 200 books and 40 multi-issue journals annually. Of the nation's top university presses, UC press is the only one associated with a public university.

Research results — improving health

Clinical research projects are another example of cultivating new knowledge to benefit society. During 2016–17, UC began more than 1,000 new clinical trial research projects in addition to the 2,500 already underway. These projects represent a crucial stage in the journey from a scientific discovery to an effective treatment. Of the research dollars that came to UC from businesses during 2016-17, 57 percent was directed toward clinical trials.

Research results — assessing climate change and charting the energy future

UC is a national and global leader in research on climate science, including monitoring atmospheric changes and global temperature rise, as well as assessing the impacts of climate change on marine and land-based ecosystems and the built environment. UC scholars and students carry out some of these studies at UC's 39 Natural Reserve System (NRS) sites around California. Most of UC's climate science work is funded by federal agencies. Each year, the University, together with the UC-affiliated Lawrence Berkeley and Lawrence Livermore National Laboratories, receives an average of \$218 million in federal funding to pursue climate research.

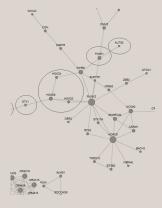
UC National Laboratories – science in the national interest

The three University of California-affiliated National Laboratories — Lawrence Berkeley (LBNL), Lawrence Livermore (LLNL) and Los Alamos (LANL) — are among the nation's premiere multi-disciplinary research and development (R&D) laboratories for energy and national security. The University has played a public service role as a manager of these three Department of Energy (DOE) national laboratories, with annual budgets of over \$5 billion and a combined workforce of more than 22,000. The Laboratories also support UC's educational mission. At LBNL, 23 percent of employees are student assistants, graduate research assistants or postdoctoral scholars. At LLNL, three percent of the workforce are postdocs and, at LANL, almost 16 percent are postdocs or student assistants.



2003

A University Affiliated Research Center (UARC) at NASA Ames is initiated at UC Santa Cruz, established to increase the safety, effectiveness and scientific impact of NASA's missions.



2005

The Autism Research and Training Center at UCSB receives \$2.35-million to provide enhanced facilities for one of the nation's leading centers for the diagnosis, evaluation and treatment of autism.

Looking forward –uncertainties in federal research funding

With federal funding supporting more than half of UC's research, the vitality of UC's research enterprise is dependent on agencies whose funding is reviewed annually. The current federal budget, passed in March 2018, calls for increased support for academic research through the current fiscal year. This boost to federal funding contrasts with the President's Budget Proposal, which would have drastically reduced all agency appropriations for research, including a cut of over 21 percent at the National Institutes of Health, UC's largest single source of research funding. Given this difference, the long-term prospects for federal sponsorship, particularly for climate and environmental science, but including fundamental medical research, are uncertain.

Whatever changes in priorities are embodied in the federal budget, one certainty is that the competition for federal funding is becoming increasingly competitive. At the National Institutes of Health, only one proposal is funded for every five received, compared to about 32 percent fifteen years ago, even though total appropriations for research have increased. UC is competitive in garnering these awards, but this comes at a cost. The administrative effort of drafting, reviewing, submitting and tracking proposals is one of the less-visible costs of conducting research — costs that are not fully recovered from federal sponsors.

For more information

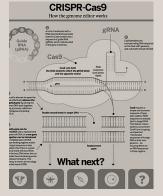
UC's Budget for Current Operations 2017–18: ucop.edu/operating-budget/_files/rbudget/2017-18budgetforcurrentoperations.pdf

UC's office of Research and Graduate Studies: ucop.edu/research-graduate-studies

A map of the economic impact of UC research activity in California: ucop.edu/institutional-research-academic-planning/_files/UC-research-impacts-in-california.pdf

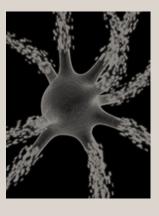
More information about UC's research enterprise, including quarterly updates on UC's research funding: ucop.edu/institutional-research-academic-planning/content-analysis/research/index.html

An interactive data visualization showing UC's research award history since 2001: universityofcalifornia.edu/infocenter/awards-and-proposals



2012

The discovery of the century: the revolutionary gene-editing tool known as CRISPR-Cas9, is discovered by UCB biochemist Jennifer Doudna and researcher Emmanuelle Charpentier.

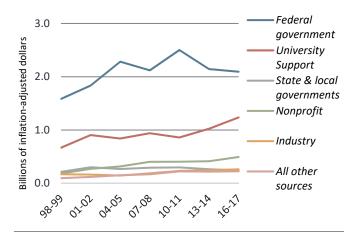


2017

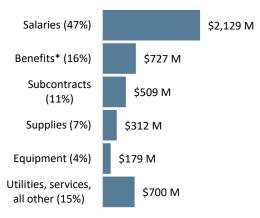
Researchers at UC
Riverside devise a method
to selectively erase specific
fear memories by weakening the connections
between the nerve cells
(neurons) involved in
forming these memories.

Federal funds support most of the research work done at UC. Salaries and benefits represent more than half of all research expenditures.

9.1.1 Direct research expenditures by source Universitywide 1997–98 to 2016–17



9.1.2 Total research expenditures by type
Universitywide
2016–17



Source: UC Corporate Financial System¹
*Does not Include post-employment benefit accruals

UC's direct research expenditures during 2016–17 were about \$4.5 billion. Of this, 46 percent came directly from federal agencies. This is the same percentage as last year, lower than any other time in the previous 16 years. A further seven percent represents federal flow-through funds that came to UC as sub-awards from the state, corporations, nonprofit organizations or other universities.

Together, about 53 percent of UC's research expenditures started as federal funds. About three-quarters of UC's federal research support was provided by two agencies: the National Institutes of Health and the National Science Foundation.

University support accounted for almost 27 percent of 2016–17 research expenditures. These funds derive from a variety of sources, including UC and state general funds, endowment income and gifts. When over \$1 billion in recovered indirect costs are included, UC's research expenditures during 2016–17 amounted to about \$5.5 billion, representing almost one-fifth of UC's total expenditures.

Fluctuations in federal appropriations have a major impact on UC's research. Cutbacks at federal agencies starting in 2006 ended a long period of growth. This downturn was temporarily reversed during 2009–10 by the American Recovery and Reinvestment Act, which provided over \$1 billion in research funds to UC. Federal appropriations have been relatively stable for the last three years, but this may change with the current administration.

The majority of research expenditures pay for the salaries and benefits of UC's research workforce. About a quarter of research salaries went to faculty, as shown below.

Research salary distribution (\$ millions)

Total	2,129	100%
Students	198	9%
Postdoctoral researchers	269	13%
Other staff	773	36%
Academic researchers	317	15%
Faculty	573	27%

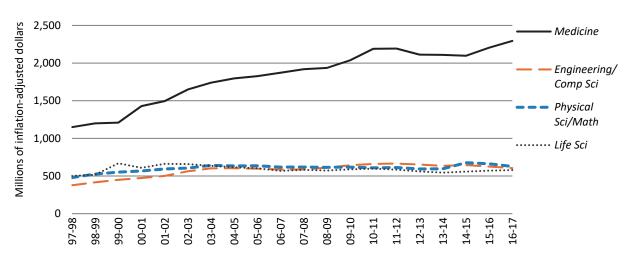
¹ Direct amounts have been adjusted for inflation and do not include accrual funds for postemployment retirement benefits or indirect cost recovery funds.

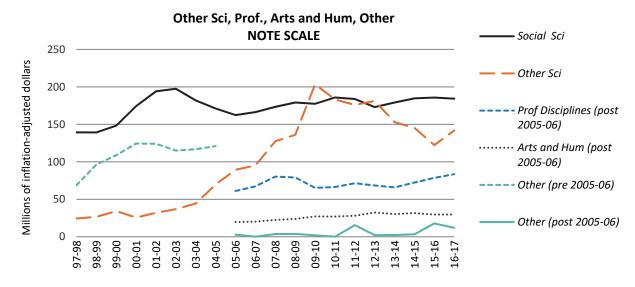
Research 147

Inflation-adjusted expenditures for research in the medical fields have doubled since 1997–98, compared to an average of 42 percent for all other disciplines.

9.1.3 Direct research expenditures by discipline Universitywide 1997–98 to 2016–17

Medicine, Eng/CS, Phys Sci/Math, Life Sci



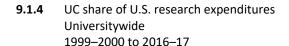


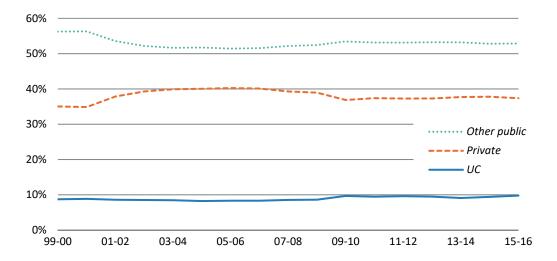
Prior to 2005–06, "Other" included professional and arts and humanities. Source: UC Corporate Financial System

Research expenditures in all STEM (Science, Technology, Engineering and Mathematics) and medical fields represented over 90 percent of total research expenditures each year during the past decade. This reflects the availability of funding and parallels the nationwide pattern.

Measures based on expenditures substantially underrepresent research activity in the arts and humanities, social sciences and professional disciplines, which make important contributions to scholarship and the quality of life, yet have relatively little access to external funding.

The University of California performs nearly one-tenth of all the academic research and development conducted in the United States.





Source: IPEDS

Universities have been responsible for much of the innovative research activity that has led to the nation's global leadership in science, technology, and the arts and humanities. The scale of the US academic research enterprise has expanded greatly in recent years, increasing from about \$36 billion at the turn of the millennium to nearly \$56 billion in 2015-16, after adjusting for inflation. More than half of the nation's funding for research comes from the federal government.

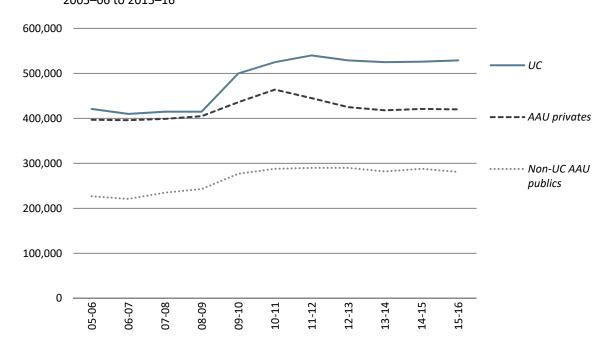
The University of California is the world's largest academic research system, and over the last decade has consistently performed between nine and ten percent of the academic research and development activity in the United States.

This reflects both UC's continuing competitiveness in securing federal awards and UC's ongoing successful relationships with the private sector. UC is the largest single recipient of funding from the two federal agencies principally responsible for academic research: the National Institutes of Health and the National Science Foundation. UC generally receives 5 to 6 percent of NIH's annual appropriations for research and 7 to 8 percent of NSF's annual appropriations.

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Average research expenditures per ladder-rank faculty are higher at UC than its comparison peers.

9.1.5 Average inflation-adjusted research expenditures per ladder-rank faculty UC and AAU comparison universities 2005–06 to 2015–16



Source: IPEDS

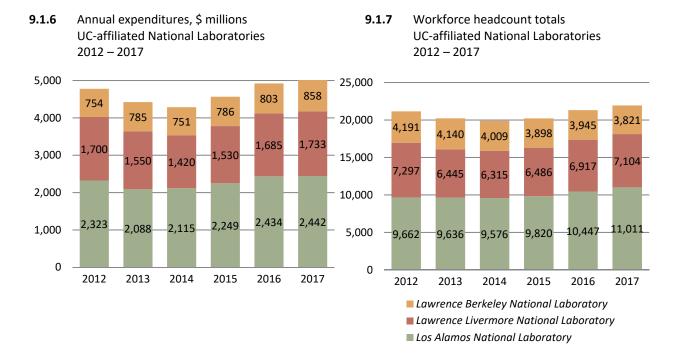
UC faculty are extremely successful at attracting research support from both government and private sponsors. On average, UC annually conducts \$529,000 in research per tenured and tenure-track faculty member, which surpasses the average of \$420,000 per faculty member for Association of American Universities (AAU) private institutions, and \$281,000 for AAU public institutions.

The largest single source of research sponsorship is the National Institutes of Health, and campuses with medical schools and hospitals are in the best position to compete for these funds. UC's secondlargest source of research support is the National Science Foundation.

	Research expenditures per
UC Location	ladder-rank faculty
San Francisco*	\$3,368,000
San Diego	\$713,000
UC AVERAGE	\$529,000
Los Angeles	\$515,000
Berkeley	\$488,000
Davis	\$451,000
Irvine	\$280,000
Santa Barbara	\$255,000
Santa Cruz	\$257,000
Riverside	\$206,000
Merced	\$168,000

^{*}UC San Francisco is an exclusively health sciences campus, where many non-ladder rank (clinical) faculty conduct significant research.

The three UC-affiliated DOE National Laboratories conduct critical research on national nuclear security, alternative energy, conservation technologies and climate science.



Source: UC National Laboratories, US DOE

Of the 17 National Laboratories funded by the US Department of Energy, three are managed by the University of California. Lawrence Berkeley National Laboratory conducts unclassified research across a wide range of disciplines, including new energy systems, quantitative biology, nanoscience environmental solutions and integrated computing as a tool for scientific discovery.

Lawrence Livermore and Los Alamos National Laboratories are national security laboratories, working to ensure the safety, security and reliability of the nation's nuclear deterrence, to reduce global threats and to solve emerging energy challenges.

Together, the three labs operate annual budgets of over \$5 billion with a combined workforce of nearly 22,000.

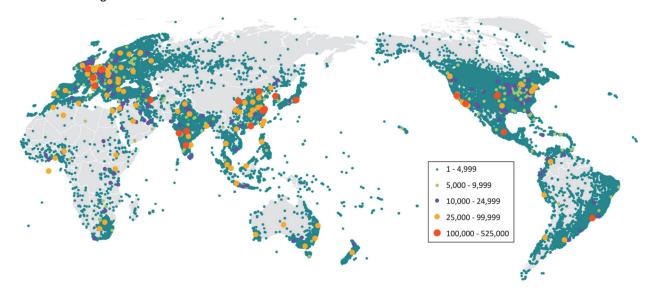
The National Laboratories also offer specialized research facilities accessible to UC faculty and the broader academic community. They provide researchers with some of the nation's most advanced tools of modern science, including cutting-edge, high-performance computing platforms for scientific research, advanced light sources and neutron sources. The three UC-affiliated National Laboratories offer nearly forty such facilities, including LBNL's National Energy Research Scientific Computing Center, LLNL's National Ignition Facility, and the Los Alamos Neutron Science Center.¹

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¹ https://energy.gov/technologytransitions/technologytransitions-facilities-database

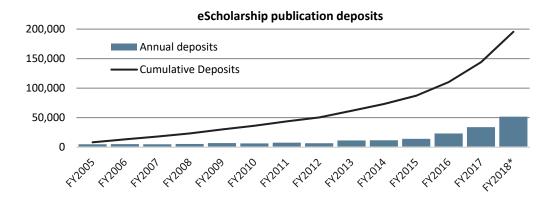
UC's Open Access policies continue to add to a growing body of freely available research publications in eScholarship, UC's open-access repository and publishing platform, expanding the global reach of UC's research findings.

9.2.1 eScholarship downloads and deposits Universitywide Through March 2018



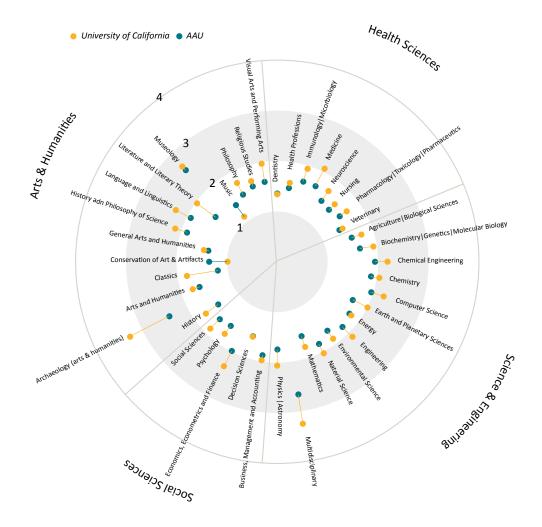
This map shows the geographic distribution and concentration of article views for scholarly materials deposited in eScholarship, UC's open access (OA) repository managed by the California Digital Library. Since 2002, UC research in eScholarship has been viewed and/or downloaded over 40 million times by readers around the world. The repository contains nearly 200,000 individual items, including many articles, research reports, working papers, and the over 70 OA journals that are published on the platform.

Deposits to eScholarship have increased exponentially since the adoption of the UC Academic Senate's Open Access Policy in 2013, with faculty submitting nearly 12,000 articles under the policy in 2016-17 alone. The success of this policy has also helped encourage deposit of over 20,000 additional (non-policy related) scholarly materials in that same period - making even more UC scholarship publicly accessible to the world.



The University of California is a major research presence at both the state and national levels, producing about nine percent of the nation's research publications.

9.2.2 UC research publication performance, by Field-Weighted Citation Impact (FWCI) and discipline group Universitywide 2012 to 2017



Source: SciVal [®] database, Elsevier B.V., http://www.scival.com (downloaded April 19, 2017)

As a premier research university, UC creates and disseminates new knowledge. From intellectual exploration in the classroom and laboratory to pushing research findings out into the world through academic journals and other venues, the publication of UC's research findings creates an ever-growing foundation for scientific discovery and social impact.

Publication databases can be analyzed to develop measures of the output and impact of UC researchers. Using Elsevier's SciVal® tool, we can establish quantitative metrics that assess the University's research performance. SciVal's data analytics capabilities are built on Elsevier's Scopus® database, which contains 38 million publication records from over 20,000 journals and 5,000

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publishers worldwide. It provides metrics and data visualizations on the University's research publications, citations, and usage data, enabling the University to identify research strengths, benchmark progress over time, and to identify and analyze opportunities for collaboration both across UC and with other institutions throughout the world.

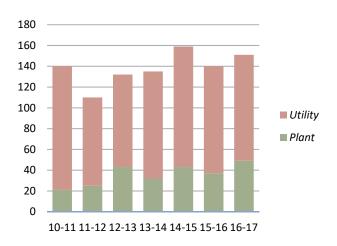
The quality and impact of UC research publications can be measured as well. One particularly useful metric is the Field-Weighted Citation Impact (FWCI), which takes into account the differences in research behavior across disciplines and normalizes publication impact against a global baseline. The FWCI can be used to benchmark the impact of individual or groups of publications regardless of differences in publication length, discipline, age and type. In any given disciplinary area, the global average FWCI is equal to 1.00; publications with FWCI greater than 1.00 have been cited more

frequently than would be expected based on the world average for similar publications, while publications with FWCI less than 1.00 have been cited less that would be expected based on the world average for similar publications. UC's average FWCI across the nearly 320,000 publications produced by its research workforce between 2012-17 is 2.02, or 102 percent greater than the global average.

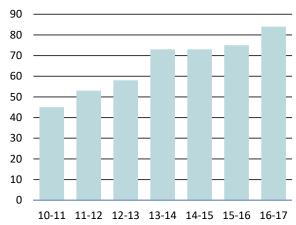
UC's publication impact is particularly high in the fields of arts and humanities, economics, computer science, engineering and medicine. Additionally, UC's multidisciplinary publications have a relatively high FWCI of 3.18, which indicates that UC research is at the forefront of discovery in emerging fields related to multiple traditional disciplines.

Licenses issued in California contribute to successful businesses. The number of active plant and utility licenses in California is growing.

9.2.3 New licenses for UC technology issued to California businesses2010–11 through 2016–17



9.2.4 UC startups formed per year in California 2010–11 through 2016–17



Source: UC Office of Innovation & Entrepreneurship

Research is part of UC's mission, and much of this research is basic, foundational research. Some UC research leads directly to new inventions and innovations; bringing them from the lab to the marketplace is part of UC's public service mission. Innovations from UC take two paths to the marketplace: they may be licensed to an existing company or they may become the cornerstone of a new startup. Both ultimately benefit the economy.

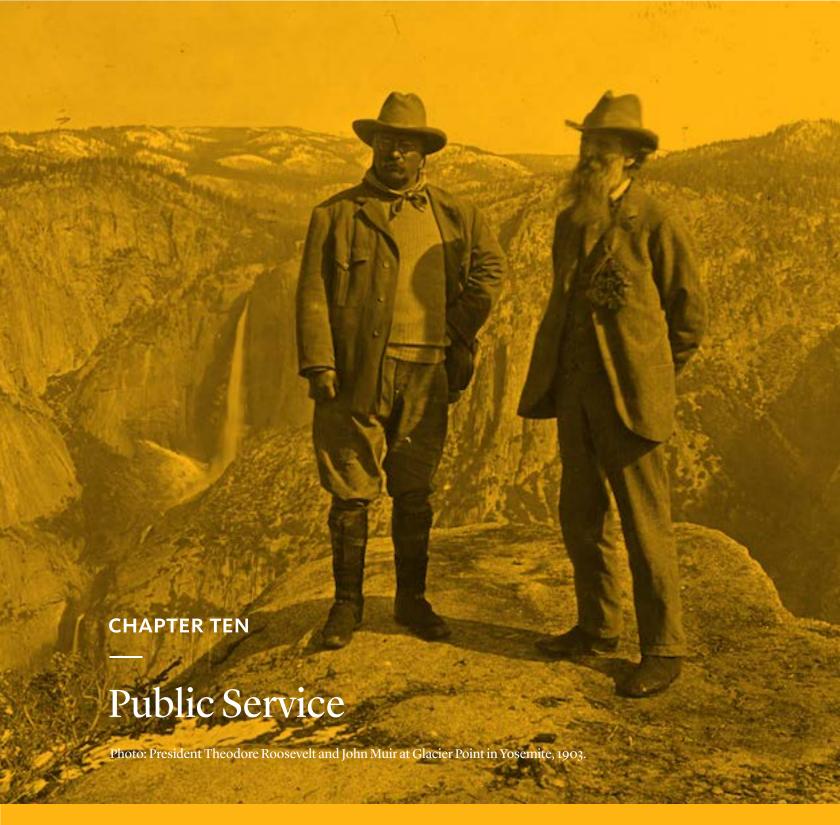
University inventions are classified as utility licenses or plant licenses. Utility licenses cover inventions protected by utility patents, such as processes, machines, manufactured items or compositions of matter. Utility licenses are often issued exclusively to the licensee. Plant licenses cover plant varietals, and are often licensed via nonexclusive licenses to nurseries and distribution centers. From the high-tech centers of San Diego and Silicon Valley to the agriculture of the Central Valley, UC technology is licensed throughout California. As of 2017, UC's license portfolio in California included 1,333 utility and plant licenses to 635 separate companies.

UC technology licenses active in California, 2017

	Utility	Plant	Total
Active licenses	739	594	1,333
Number of licensees	484	151	635

UC startups are independently operating companies that were formed to commercialize a UC technology. The number of startups formed annually in California increased to 84 companies in 2017.

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1862

Signed by President Abraham Lincoln, the Agricultural College Land Grant Act (a.k.a. the Morrill Act) enabled California to combine federal, state, and private funds and efforts to create the University of California with its land grant mission in 1868.



1896

UC Berkeley's "Labor Day." 800 students join a labor crew to work at campus landscaping and road-building, in part to show that the university's students are not afraid of manual labor.

PUBLIC SERVICE

History

UC contributes to the well-being of the state's population and economic growth through its public service mission—a fundamental feature of UC through its history. UC's impact goes well beyond its on-campus activities, and through a wide range of programs and services UC has a significant presence in nearly every community throughout California.

With the creation of Cooperative Extension (CE) in 1914, the University began community-based education, helping farmers grow more nutritious food. In the 1920s, 4-H clubs coalesced out of UC's agricultural clubs. UC campuses have long served underprivileged youth throughout the state by founding summer camps, like UniCamp from UCLA in the 1930s, and Cal Aggie Camp from UC Davis in 1961.

UC's Agricultural Extension Service provided emergency assistance when the St. Francis Dam break flooded parts of Ventura and Los Angeles counties in 1929 and again when drought struck Southern California in 1934, assisting ranchers by purchasing livestock on behalf of the government.

Educational outreach forms a crucial part of UC's service to the state. In the 1970s, Lawrence Livermore Elementary School Science Study of Nature (LESSON) began in response to a request by an Oakland elementary school teacher for help in teaching science. UCSF has expanded its educational outreach by establishing the UCSF Fresno Medical Education Program, providing an opportunity for students and residents to train in the Central Valley and support local health care needs. UC manages an extensive network of world-class museums, libraries, herbaria and other facilities that are open to the public. The University hosts a range of performances and events that attract audiences from all parts of the state.

The University has a steadfast commitment to public service and exhibits it, in part, through support of sustainable agriculture, environmental stewardship, healthy families and education at all levels. The Division of Agriculture and Natural Resources (ANR), the UC Natural Reserve System, and the community-based programs of the Division of Diversity and Engagement and all ten campuses are highlighted in this chapter.

UC Agriculture and Natural Resources

UC's land-grant history

The Morrill Land-Grant Acts emphasized that the role of the University is to develop "useful and practical information ... and to promote scientific investigations and experiments" to address the needs of society through objective research and education.



1913

Humboldt County becomes the first UC Cooperative Extension site in California, with Andrew Hansen Christiansen as the state's first farm advisor.



1914

The Smith-Lever Act created Cooperative Extension, a nationwide system of community -based education. County farm advisors' outreach helped many families achieve better livelihoods.

The Morrill Acts created a federal-state partnership for agricultural research and technology transfer. The partners are the U.S. Department of Agriculture (USDA) and every state and territory's land-grant college. The University of California was chartered as California's land-grant university. Subsequently, the Hatch Act of 1887 established state agricultural experiment stations, providing annual federal funding to the state land-grant institutions for agricultural research. In 1914, Congress passed the Smith-Lever Act, establishing Cooperative Extension services to extend university research through outreach and education and providing annual federal funding to the state land-grant institutions. UC's Division of Agriculture and Natural Resources is UC's land grant arm. State legislation enabled county governments to become the third legal partner, such that today UC ANR represents a three-way partnership with federal, state and county governments.

UC ANR personnel and programs connect and deliver resources from the UC system to Californians—even if there is no campus nearby. UC ANR forms integrated teams, across UC and beyond, to develop innovative, multidisciplinary, science-based solutions to complex issues. CE is also the education and outreach arm, serving the public in all 58 California counties by bringing UC research to local communities. UC ANR's mission is to engage UC with the people of California to achieve innovation in research and education that supports:

- sustainable, safe, and nutritious food production and delivery
- economic success in a global economy
- a sustainable, healthy and productive environment
- science literacy and youth development programs

UC ANR Statewide Network

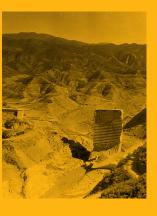
UC ANR operates a statewide network of researchers and educators dedicated to the development and application of knowledge to address local agricultural, environmental, and health issues. This network of local Cooperative Extension sites and Research and Extension Centers (RECs) is often the face of the University to Californians with no other connection to the University. As of January 2018, 170 Cooperative Extension Advisors were conducting research, outreach and education from locally-based CE offices. Nine statewide RECs provide educational opportunities for the public and places for researchers to conduct field experiments. Approximately 580 affiliated Agricultural Experiment Station researchers are located at three campuses and about 115 CE Specialists are located at five campuses, RECs and county offices. UC ANR maintains and enhances connections that engage UC with the people of California through 3,079 local partnership programs (10.1.1).

In 2017, AES and CE combined published over 1,700 publications, 260 popular articles and 125 manuals/other print materials, and developed 22 patents. Locally based CE programs, including volunteers, had over one million educational exchanges with adults and youth across the state. CE academics and volunteers disseminated science-based information through over 250,000 community-based classes, and over 2,000 workshops, demonstrations and field days offered across the state.



1928

Agriculture clubs, started by UC's agricultural offices, officially become 4-H Clubs for youth work. Today over 250,000 young people participate in 4-H programs around California.



1929

UC Agricultural
Extension Service workers
provide emergency
assistance when a break
in the St. Francis Dam
floods portions of Ventura
and Los Angeles counties.

UC ANR's statewide California Naturalist Program uses a hands-on science curriculum and citizen science to foster a diverse cadre of volunteers, working with 40 organizations. The program has over 65 active instructors who taught the California Naturalist course more than 130 times in eight of the state's ten bioregions. At the end of 2017, over 2,300 participants were trained and recorded over 99,000 hours of volunteer environmental stewardship service, with an estimated value of \$2.7 million for the state.

UC ANR's statewide UC Master Gardener Program extends research-based information about home horticulture, pest management, and sustainable landscape practices to the public. There are approximately 6,000 UC Master Gardener volunteers in 50 California counties. In 2017, they donated close to 400,000 public service hours. Since the program's inception in 1981, Master Gardener volunteers have donated more than five million hours, with an estimated value of more than \$137 million.

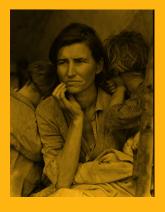
UC ANR's statewide 4-H Youth Development Program is part of the national land-grant 4-H program, which uses a positive youth development framework and experiential, inquiry-based science learning. Approximately 100,000 youth participated in the UC 4-H program during 2017. Youth who participate in 4-H programs have been shown to be 25 percent more likely to see themselves going to college, and more likely to contribute to their communities. In 2015 the UC 4-H program launched the Latino Initiative, adapting programming to better reach and serve California's growing demographic of Latino children. Latino youth participants reported increases in confidence in their science and engineering abilities and increased knowledge of and skills to engage with the government system. In addition, the UC program has become an International Advisor for 4-H in Mexico.

UC ANR manages two statewide nutrition education programs: the California Expanded Food and Nutrition Program (EFNEP) in 24 counties and the UC CalFresh Program in 31 counties. EFNEP delivers research-based nutrition education to limited-resource families with young children to improve healthy lifestyle choices. In 2017, EFNEP reached over 7,800 adults and 36,000 youth. Evaluations of adult participants indicate 91 percent improved at least one nutrition practice, and 87 percent improved one or more skills for managing their food budget. The UC CalFresh Program is a joint agreement involving the USDA, California Department of Social Services and UC Cooperative Extension. The program serves persons eligible for the federal Supplemental Nutrition Assistance Program (SNAP-Ed) and in 2017, in-person education was provided to 162,220 participants. Evaluation findings showed gains in healthy eating behaviors and organizations reported policy, system or environmental improvements, e.g. in school lunchrooms, farm-to-school programs and school gardens.

The scope of UC ANR impact

UC ANR strives to have a positive impact on the life of each of Californian's 40 million residents, and contributes to environmental, health and economic condition changes throughout the state.

California is a national and global leader in food production and agricultural exports, all of which are affected by social, regulatory, economic and environmental challenges. UC ANR lives and works in communities,



1934

UC Berkeley professor Paul Taylor and his wife, photographer Dorothea Lange, publish five reports on the conditions of migrant workers, including farmers displaced by the Dust Bowl.



1935

UniCamp, a UCLA student-run summer program for underprivileged and physically challenged youth, is founded. UniCamp has served over 60,000 campers. communicating research findings through demonstrations and educational programs to improve food quality, quantity, safety and access. UC ANR creates practical solutions and informs policy and as a result, Californians have increased access to abundant, affordable, safe and healthy food thanks to UC ANR research, outreach and education, growers are changing their practices, resulting in increased yield and efficiency as well as reduced inputs, and individuals and households are improving financial management practices.

Research shows that proper management of our natural resources is necessary for safe and healthy environments. UC ANR translates research into actionable management strategies to protect the environment and increase the long-term viability of farming, ranching and forestry in California. Through outreach and education, UC ANR recommends practices for grazing and rangeland management, water conservation and preserving water quality, and sustainable use of forest and wildland resources. Increased ecological sustainability of agriculture, landscapes and forestry helps California realize the many benefits of the state's rich and diverse natural resources.

California's rapid population growth increases pressure on community resources, presenting challenges to health and safety. UC ANR produces tools, programs and policy-relevant research that result in healthy living for individuals and communities. Program participants adopt healthier lifestyles and communities gain improved access to green spaces and healthy foods. Benefits also include safe drinking water, clean air and reduced exposure to pesticides. Collectively, these efforts contribute to a healthier California, improving public health and reducing healthcare costs.

UC Natural Reserve System

UC's environmental stewardship portfolio includes projects beyond the scope of ANR. The University of California directly manages lands for research, teaching and public service. The UC Natural Reserve System (NRS) is a network of protected natural areas throughout California. Its 39 reserves, covering more than 756,000 acres, make it the largest university-administered reserve system in the world (10.2.1). These lands provide undisturbed environments to conduct research, enhance students' educational experiences and provide sites for public service programs. The latest addition is the Merced Vernal Pools and Grasslands reserve, next to UC Merced.

Most major state ecosystems are represented within the NRS, from coastal tidepools to inland deserts, oak savannas to offshore islands, and wetlands to Sierra Nevada forests. Reserves also serve as gateways to more than a million acres of public lands. NRS reserves include lands purchased by the University, donated by private landowners, and made available to the reserve system via partnerships with state and national parks, land trusts and government agencies. Reserve amenities such as classrooms, lodging, laboratories and internet access attract tens of thousands of users each year. These include researchers, students in university courses, schoolchildren and the general public.

Those who seek to understand the workings of natural California come to the NRS to take classes, develop field skills and conduct research. More than 150 undergraduate courses across the UC system include visits to NRS



1961

The Associated Students of UC Davis (ASUCD) founds Cal Aggie Camp to provide underprivileged and inner-city youth an opportunity to experience the outdoors.



1965

The UC Natural Reserve System is founded. Seven university-owned sites become the first reserves. The system grows to include 39 reserves spanning 750,000 acres. reserves each year. Topics of study range from botany to zoology, archaeology to environmental planning, public health to the performing and visual arts. Among these is the NRS's California Ecology and Conservation course, which brings undergraduates from each of UC's general campuses to reserves for seven weeks.

Scientists flock to reserves because reserve lands are protected in perpetuity. They feel comfortable launching long-term studies within reserve boundaries. Work at reserves produced more than 862 peer-reviewed papers, book chapters and books between 2011 and 2014.

As one of four trustee agencies recognized under the California Environmental Quality Act, the University of California holds reserve natural resources in trust for the people of the State of California. The NRS serves the public good by protecting these natural resources and preserving biodiversity. The care of reserve lands and resources is central to the mission of the NRS. Reserve managers protect endangered plants and animals, restore native habitats and control invasive species to ensure the health of these ecological oases.

Reserves also serve the public by holding lecture series, guided hikes and other community events; lending scientific expertise to conservation initiatives, and hosting tens of thousands of California schoolchildren on field trips.

More than fifty years after its inception, the need for the NRS has never been greater. Climate change, pollution, extinctions and invasive species are fraying the fabric upon which life on Earth depends. By supporting university-level teaching, research and public service, the NRS contributes to the understanding and wise stewardship of the Earth.

Educational partnerships

For more than 40 years, the University of California's Student Academic Preparation and Educational Partnerships (SAPEP) programs have helped prepare California students for higher education (10.3.1). Program activities are centered on student academic preparation, community college articulation support, school and community partnerships, and online and technology-assisted services. Collectively, SAPEP programs served nearly 160,000 K-12 students at more than 1,100 public schools in 2015–16.

The goal of these programs is to promote student achievement by supporting academic preparation and college readiness. Programs include the Early Academic Outreach Program (EAOP), which focuses on "a–g" course completion (a pre-requisite for admission to UC and CSU); K-20 Regional Intersegmental Alliances (aka P-20), creating ties between campuses, schools, local communities and business organizations; The Puente Project, focusing on college-preparatory English skill development; Transfer Prep, focusing on community college transfer support; and Mathematics, Engineering, Science Achievement (MESA), focusing on STEM (science, technology, engineering and mathematics) skills development.



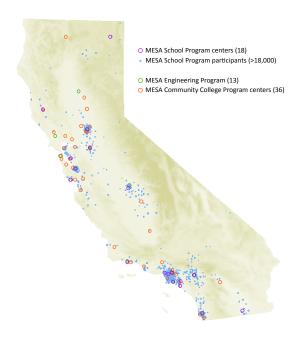
1969

The Expanded Food and Nutrition Education Program (EFNEP) develops to reach low-income families and improve their dietary practices.



1970

MESA provides underserved students and their families with the essential skills and resources to achieve success in school, career, life and STEM-related disciplines.



The Mathematics, Engineering, Science Achievement (MESA) program integrates UC's core missions of teaching and public service by focusing on the academic preparation of students at K-12 schools, community colleges and four-year universities. Through its three components — the MESA Schools Program (MSP), the MESA Community College Program (MCCP) and the MESA Engineering Program (MEP) — MESA serves more than 25,000 California students annually.

MESA Schools Program (MSP) centers are housed in 18 locations and serve more than 18,000 students at about 400 K-12 schools. Centers offer classes before, during and after school on activities that reinforce math and science content standards. MESA activities include workshops aimed at strengthening students' study skills and monitoring students' progress.

The MESA Community College Program (MCCP) manages 36 centers at community colleges, serving around 4,000 students annually. These centers provide academic excellence workshops, orientation courses, academic advising and counseling activities dedicated to helping community college students develop multi-year plans to transfer to a four-year university in a timely manner.

The MESA Engineering Program (MEP) operates 13 centers located in public (UC and CSU) and private universities across the state. Serving about 3,000 students annually, these centers assist college students in attaining four-year degrees in engineering and computer science by providing tutoring and academic skills workshops. In partnership with local industry leaders, MEP centers also provide career and professional development opportunities for students.

In addition to the activities UC undertakes to strengthen K-12 and community college students academically, UC plays an important role in preparing California's teacher workforce. UC's Teacher Education Programs prepare teacher candidates to engage students in rigorous, relevant and inquiry-based educational experience. Located at eight UC campuses, Teacher Education Programs recruit, prepare and support educators who are committed to academic excellence, equity and integrity, and to cultivating the highest levels of achievement and opportunity for all students.

UC also provides ongoing support to educators already in the workforce through professional development programs. For example, the California Subject Matter Project (CSMP) is a network of nine discipline-based



1975

UCSF expands educational outreach: The UCSF Fresno Medical Education Program provides opportunities to train in the Central Valley and support local health care needs.



1980

The UC Master Gardener program starts. By 2010, nearly 5,000 UC Master Gardener volunteers in 44 California counties provide 258,000 hours of service to California communities.

statewide projects, providing more than 2,000 professional development programs for educators at more than 10,000 schools each year. CSMP professional learning opportunities are aligned with state-adopted standards and are collaboratively designed by K-12 and university educators to enhance learning for all students (10.3.2).

Social and economic impact

Including the programs of ANR, the Natural Reserve System and UC's educational partnerships mentioned above, the University of California administers more than 20,000 community-based programs across the state. Because the well-being of every California citizen and community is important, all campuses sponsor and manage programs far from their locations. For example, UC San Diego, near the southern border of California, runs clinical internship sites in Crescent City and other communities near the northern border of California; UC Davis, in the Central Valley, runs the Oiled Wildlife Care Network in Morro Beach on the central coast; and UC Santa Barbara, on the California Coast runs the Outdoor Science Education Program in several locations on the east side of the Sierra Nevada range. All of UC's community-based programs may be discovered and explored at: ucal.us/maps.

UC's social impact

Through community and social services programs and cultural resources and arts programs, UC administers internship and field study programs that connect students and alumni with their communities; volunteer centers working on issues such as domestic violence, fair housing advocacy and employment training; arts education and outreach programs that teach art, dance, drama, music and digital arts in the community (10.4.1).

UC's economic impact

Through business and economic development programs and public policy programs, UC facilitates internships offered in partnership with local companies, where students gain both UC credits and professional experience. Other programs bring local high-tech and green-tech companies together with motivated individuals to foster student participation in community economic development (10.4.1).

As California's economy becomes increasingly dependent on highly educated workers, the role of the University of California in training the state's future workforce becomes more vital. Industries relying on skilled workers in the STEM fields represent a major component of California's economy. UC awards half of the state's bachelor's degrees in STEM fields.

More than 1.2 million UC alumni live and work in California (10.4.2). They are leaders, volunteers and contributors to the vitality of its communities, businesses and culture. UC's operations also add significantly to the state's economy. With approximately 210,000 employees, UC is one of California's largest employers (10.4.3). With expenditures of about \$29.5 billion, much in the form of salaries, wages and benefits, UC annually generates more than \$46 billion in economic activity in California. UC contributes more than \$32 billion to the gross state product and attracts over \$8 billion in annual funding from outside the state.



1986

After sustained student protests and demonstrations at UC Berkeley, UCLA and UC Santa Cruz, UC Regents vote to divest from South Africa investments by the end of 1990.



1998

UC Cooperative Extension scientists find new ways to stabilize the soil and reduce airborne dust in Southern California's Antelope Valley amid increasing pollution concerns.

True to its land-grant mission, the UC system touches many aspects of life in California. The UC public service mission has evolved in tandem with the changing needs of our state and local communities, and has developed programs and partnerships that improve the lives of all Californians.

For more information

UC in California interactive map, includes California counties, regions, campuses, UC system and California elected representative districts: ucal.us/maps

Division of Agriculture and Natural Resources: ucanr.edu

Natural Reserve System: ucnrs.org

MESA Programs: mesa.ucop.edu

CalTeach: calteach.universityofcalifornia.edu

Early Academic Outreach Program (EAOP): eaop.org

The Puente Project: puente.berkeley.edu

California Subject Matter Project: csmp.ucop.edu



1999

Gear Up gets its start. The program's goal is to develop and sustain the organizational capacity of middle schools to prepare all students for high school and higher education.

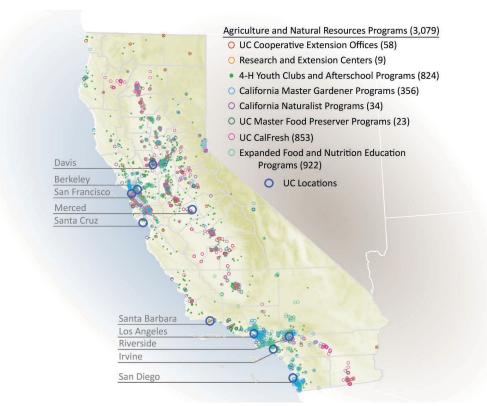


2014

UC launches the Global Food Initiative, a program that harnesses the collective power of UC to help put the world on a path to sustainably and nutritiously feed itself.

UC Agriculture and Natural Resources brings the power of UC research and education to local communities across California.

10.1.1 UC Division of Agriculture and Natural Resources programs



Source: UC campuses

UC's land-grant arm, Agriculture and Natural Resources (ANR), operates several of California's most important agriculture and nutrition awareness and education programs, including Cooperative Extension, Research and Extension Centers, 4-H Youth Development Statewide Program, the California Master Gardener Program, the California Naturalist program, the UC Master Food Preservers program, UC CalFresh and Expanded Food and Nutrition Education programs.

Public Service 165

The UC Natural Reserve System covers more than 750,000 acres and represents most of California's major ecosystems.

10.2.1 UC Natural Reserve System



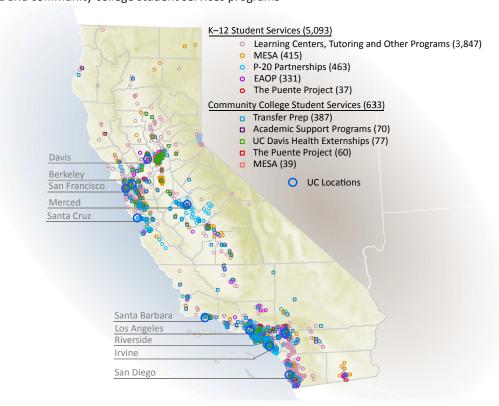
Source: UC campuses

As a major component of UC's environmental stewardship role, the UC Natural Reserve System (NRS) manages a network of protected natural areas throughout California. Its 39 sites include more than 756,000 acres, making it the largest university-administered reserve system in the world.

These lands provide undisturbed environments to conduct research; enhance students' educational experiences; and provide sites for public service programs. The latest addition is the Merced Vernal Pools and Grasslands reserve, next to UC Merced.

UC programs improve academic skills of K-12 and community college students across California.

10.3.1 UC K–12 and community college student services programs



Source: UC campuses

SAPEP programs such as the Early Academic Outreach Program (EAOP), Mathematics, Engineering, Science Achievement (MESA) and The Puente Project are designed to increase completion of college preparatory ("a-g") courses, support enrollment directly from high school into four-year institutions, and support preparedness to transfer from community colleges to four-year institutions.

Students who participate in SAPEP programs are more likely to complete "a–g" courses (80 percent of Student Academic Preparation and Educational Partnerships (SAPEP) participants vs. 43 percent of California public high school graduates in 2015–16)

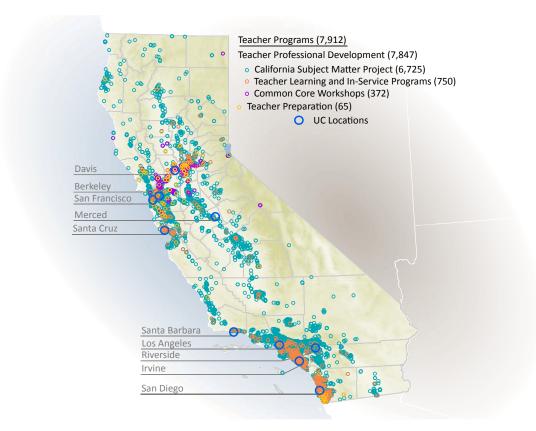
and attend California public two- and four-year universities (64 percent of SAPEP participants vs. 41 percent of California public high school graduates).

In 2015–16, SAPEP programs served nearly 160,000 K–12 students at more than 1,100 public schools, and over 25,000 community college students at all 113 community colleges. In addition, over 52,000 parents/guardians of K–12 students and over 13,000 teachers, counselors and school administrators also participated in SAPEP programs.

Public Service 167

UC helps prepare California's teacher workforce and strengthens the skills of teachers throughout their career.

10.3.2 UC teacher professional development and teacher preparation programs



Source: UC campuses

The University of California plays an important role in preparing teachers for their careers and providing them professional development. UC manages more than 7,800 teacher professional development programs and 65 teacher preparation programs.

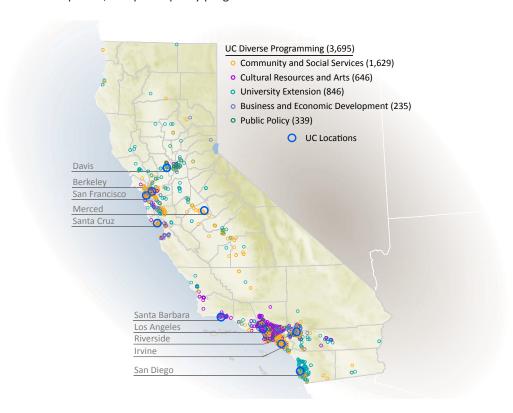
The California Subject Matter Project, for example, creates sustainable teacher learning communities throughout California. Its network of nine discipline-based projects supports professional development to improve instructional practices and student achievement.

Teacher professional development activities include teacher workshops related to Common Core State Standards, writing, mathematics and in-service teacher training.

Teacher preparation programs include CalTeach, a component of the Science and Mathematics Initiative (SMI). Through this program, UC recruits and prepares its undergraduates majoring in mathematics and science for teaching careers, and provides special coursework and field experiences in K–12 schools. Since its inception in 2005, CalTeach has served more than 10,000 UC undergraduates, many of them now credentialed STEM educators in California public schools.

UC is involved in communities across California through a wide range of local-level service programs.

10.4.1 UC community and social services, cultural resources and arts, university extension, business and economic development, and public policy programs



Source: UC campuses

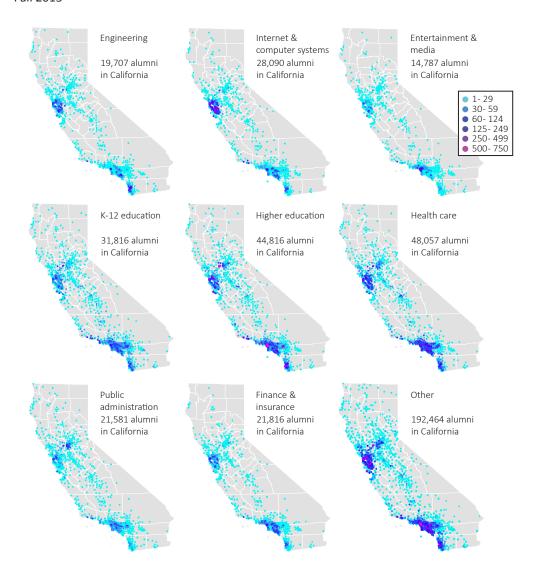
UC administers around 1,630 programs providing community and social services throughout the state and about 650 arts education and outreach programs that expose students and community members to art and culture through performing arts, theater, cultural events and other activities. The University operates 235 business-related programs statewide.

Serving about 500,000 course registrants, about 850 UC University Extension programs offering some 17,000 different courses encourage lifelong learning for all Californians. Additionally, about 340 public policy programs engage the community and raise awareness on public policy issues.

Public Service 169

Of UC's more than 2 million living alumni, many reside within California.

10.4.2 Location and industry of employment of UC alumni, in California Fall 2015



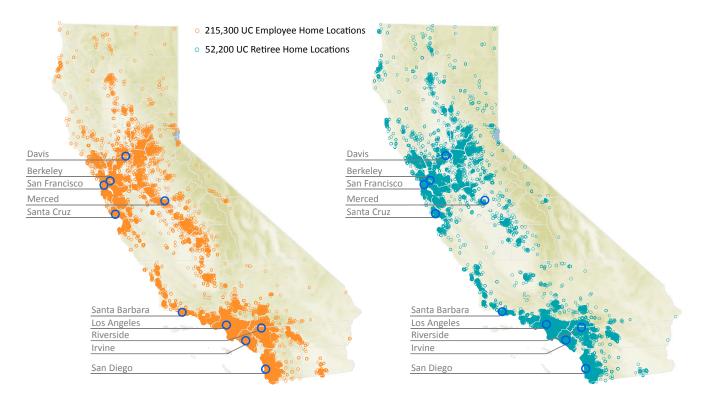
Source: UC campuses, EDD; Other includes industries such as retail & wholesale, manufacturing, transportation, construction, legal services and others.

More than 510,000 recent graduates of the University of California (since 2000) were employed in California in 2015, according to California's Employment Development Department (EDD).

Campus alumni offices maintain recent residential address information for more than 85 percent of those alumni. These maps display the distribution across California of UC graduates in each of 8 different industries, as reported by EDD. The industry with the largest employment of young UC graduates is health care, employing about 12 percent of these alumni, followed by higher education.

UC is one of California's largest employers, with close to 200,000 employees.

10.4.3 Faculty, academics and staff employees; retirees, in California Faculty, academics and staff, 2016; retirees, 2017

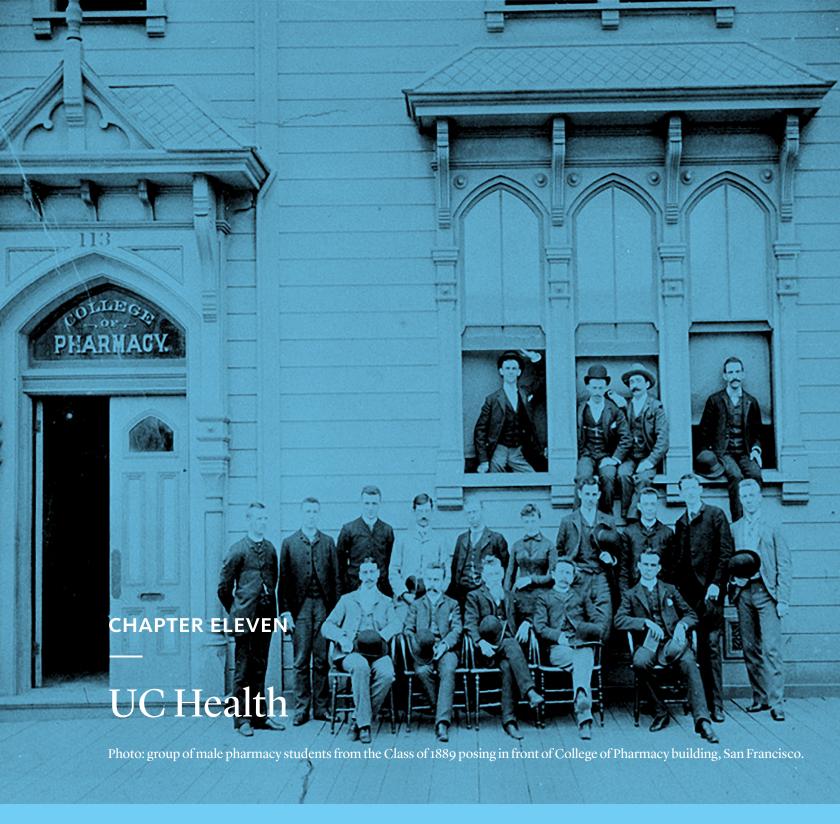


Source: UC Information Center Data Warehouse

The University of California employs approximately 210,000 faculty, academics and staff, making it one of the largest employers in California. With its employees residing throughout the state, UC's economic impact goes well beyond its ten campus locations. Members of its workforce purchase goods and contribute to local economies across the state.

All told, the ripple effect of UC's operations generates more than \$46 billion in economic activity statewide. In addition to the current employees shown on this map, 53,000 of UC's retirees reside in California, and their UC pension benefits also contribute to the communities in which they reside.

Public Service 171



1873

Trustees of Toland Medical College in San Francisco transfer the institution to the Regents, thereby forming the Medical Department of the UC, the university's first professional school.



1881

UC establishes the first dental school west of the Mississippi River. The dental school would become one of the three Affiliated Colleges in the UC school of medicine, and later, part of UCSF.

UC HEALTH

History

When state assemblyman John Dwinelle prepared the charter for the University of California in 1868, he had the foresight to call for the formation of a college of medicine "and other like professional colleges." In 1873 the Toland Medical College of San Francisco joined the University and became the University's first professional school. In 1881, UC established the first dental school west of the Mississippi River. UC continued its expansion of medical and health professional schools through the end of the nineteenth century, all of the twentieth century and into the twenty-first century with the recent addition of a School of Nursing at Irvine in 2017.

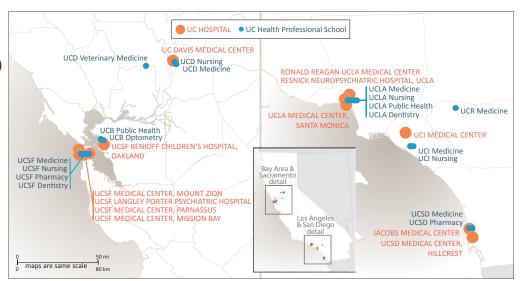
The scope of UC Health

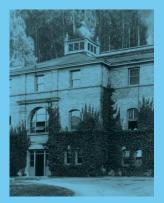
Today, the University's 18 health sciences schools and five academic medical centers—organized as UC Health—are international leaders in the education of health professionals, in research that develops new cures and treatments, and in public service that provides health care for all Californians regardless of ability to pay.

In June 2017, the first students graduated from UC Riverside Medical School, the sixth medical school in the system.

UC's health sciences schools are:

- Dentistry (UCSF, UCLA)
- Medicine (UCD, UCSF, UCLA, UCR, UCI, UCSD)
- Nursing (UCD, UCSF, UCLA, UCI)
- Optometry (UCB)
- Pharmacy (UCSF, UCSD)
- Public Health (UCB, UCLA)
- Veterinary Medicine (UCD)





1913

The Hooper Foundation for Medical Research is established in San Francisco, the first U.S. medical research foundation to be incorporated into a university.



1955

Ten years after the UCLA School of Medicine is founded, the UCLA Medical Center opens, admitting its first patients on July 7. UC's health science schools are among the best in the nation, according to U.S. News & World Report 2019 rankings.

US News & World Report's "Best of" Rankings as of 2019:

	UCSF	UCLA	UCSD	UCD	UCI	UCB	UCR
Best Medical Schools – Research	5	8	22	39	46		93
Best Medical Schools – Primary Care	2	4	17	10	77		
Best Nursing Schools – Masters	11	20		46	66		
Best Graduate Public Health		10				9	
Best Pharmacy Schools	3		25				
Best Veterinary Medicine Schools				1			

Note: USN&WR does not rank dental or optometry programs.

All across the state, each of UC Health's academic medical centers has earned a place among U.S. News & World Report's "Best Hospital" rankings, as shown in the table below:

Best Hospitals - Nationally	#5 UCSF	#7 UCLA			
Best Hospitals - California	#1 UCSF	#2 UCLA	#5 UCD	#7 UCSD	#11 UCI

Residency programs — increasingly funded without federal support

Graduate Medical Education (residency) programs provide in-depth training in specialties of medicine after graduation from medical school. All of UC's academic medical centers provide residency programs and fund an increasing number of them without traditional federal support. In the 1960s, Medicare began paying for a substantial portion of the cost of residency programs. In 1997, it limited the number of residencies that would be funded, and the 'cap' has not been revised upward despite a 30 percent increase nationally in the number of medical students and an aging population that needs more practitioners. As a result, UC medical centers began absorbing costs for residency training slots. In FY 2017–18, UC Health trained 5,540 residents through UC-sponsored and long-standing UC-affiliated family medicine programs—or approximately half of California's total. This includes 594 positions for which UC received no federal General Medical Education support and covered roughly \$59 million in unreimbursed costs.

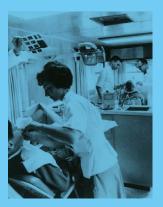
Medical Centers — clinical operations are self-supporting

UC Health's medical centers receive no state general funds. Clinical operations at the five academic medical centers—UC Davis Health, UCSF Health, UC Irvine Health, UCLA Health and UC San Diego Health—are supported by insurance reimbursements from governmental and commercial payers. Additionally, the medical centers provide financial support to UC Health Schools of Medicine to fund operating activities, clinical research, faculty practice plans and other programs. In FY 2017, the support was \$457 million.



1956

The first open-heart surgery in the western United States is performed at UCLA Medical Center one year after the medical center opens.



1965

Up-to-date medical facilities and techniques are made available to rural areas with the mobile clinic constructed and operated by UC Medical Center faculty and students in San Francisco.

Inpatient days by coverage type, FY 16-17



*San Francisco data includes UCSF Medical Center, Children's Hospital & Research Center Oakland (CHRCO), and the activities of UCSF Medical Group.

Source: UC Health

As shown above, coverage types for inpatient days across the system are 36 percent Medi-Cal, 30 percent Medicare and 32 percent commercial contracts, with the remainder uninsured or self-pay. Medi-Cal reimbursement covers an estimated 50 to 60 percent of the cost of care per patient, while Medicare covers 90 percent. Higher commercial insurance reimbursements help fill the funding gap.

Medi-Cal – the commitment to all Californians

UC Health hospitals provide primary care to managed Medi-Cal beneficiaries and provide for specialty services, reflecting the system's traditional strength in tertiary and quaternary care. Almost one-third of Californians are now covered by Medi-Cal. UC Health values the significant role Medi-Cal plays in preserving and improving the health of the state. UC Health hospitals comprise less than six percent of the licensed general acute care staffed hospital beds in California, yet are the third largest provider of inpatient days for Medi-Cal beneficiaries.

UC has less than 6% of the acute care beds in California but is the third largest provider of Medi-Cal inpatient care.

Non-UC bed

UC bed

Source: American Hospital Directory cites 74,925 non-federal, short-term, acute care staffed hospital beds in CA.



1968

Surgeons at the UC San Diego Medical Center perform the region's first kidney transplant. The Center for Transplantation has saved over 2,500 lives with successful organ transplants since 1968.



1983

UCSF's Jay Levy, MD becomes the third independent discoverer of the Human Immunodeficiency Virus (HIV), the virus that causes AIDS. For outpatient care, UC Health's clinics are the fourth-largest provider of care in the state for Medi-Cal beneficiaries, with more than 750,000 visits per year.

The expansion of Medi-Cal in 2014 through the Patient Protection and Affordable Care Act (ACA) increased enrollment by nearly 60 percent. Expansion costs initially were borne almost entirely by the federal government, but by 2020, ten percent will be borne by the state. As financial responsibilities shift to California, this will present a financial challenge to the state and all safety net hospitals, including UC Health.

In FY 2017, UC Health provided more than \$250 million in charity care and an additional estimated \$914 million in uncompensated care for patients in publicly sponsored programs.

Growing affiliations — extending clinical care beyond UC's facilities

UC Health campuses are expanding their delivery networks through clinical affiliations with hospital systems or Federally Qualified Health Centers (FQHC). These efforts create opportunities to enhance clinical quality, provide direct patient care and advance the system's educational missions outside the walls of UC-owned facilities. UC residents at these facilities provide care to Medi-Cal, Medicare and commercially insured patients. Agreements for clinical coordination may include primary care and obstetrical services or specialized services such as oncology care, neurosurgery and liver transplantation.

The future — strategic plan and system integration

Health care is rapidly changing. To meet this challenge, the campus and system leadership of UC Health crafted a multi-year strategic plan (2017–2022) to advance the tripartite missions of public service clinical care, research and education. Integral to the plan is a recognition that the future requires collaboration across locations.

The world-class expertise at each campus—when connected to like-minded colleagues at other sites—holds great promise for Californians and people around the world. Some examples include:

More than \$700 million in savings & counting—Leveraging Scale for Value

UC Health has a fiduciary responsibility to the state and system to manage scarce resources wisely. One of the earliest systemwide collaborations is the Leveraging Scale for Value initiative (LSfV), which works on supply chain, revenue cycle and information technology improvements. This project saved \$182.5 million in FY 2015, \$261 million in FY 2016, and \$286 million in FY 2017 for cumulative savings of more than \$729. The LSfV strategy also taps into site-specific expertise for the benefit of the system. For example, the information technology team at UCSD extended the same instance of EPIC electronic medical records (EMR) at UC Irvine Health.

Clinical & Research Collaboration—power of scale

While cost reduction is important in any organization, UC Health views its principal objective as leveraging the collective scientific acumen and learnings across the UC system to develop the clinical care standard for the future.



1989

J. Michael Bishop and Harold Varmus of UCSF are awarded the Nobel Prize in physiology or medicine for discovering the cellular origin of retroviral oncogenes, the cells that lead to cancer.



1992

UCLA pioneers the country's first Alternative Heart Transplant Program and performs the first bypass surgery in the U.S. on a donor heart prior to transplantation.

Below are a few examples.

UC BRAID—all UC clinical trials in one place

The University of California Biomedical Research Acceleration, Integration and Development program (UC BRAID) is recognized by the National Institutes for Health (NIH) as a cutting-edge consortium for conducting clinical and translational research. Its accomplishments include creating a master database of all Institutional Review Board (IRB)-approved clinical trials in the consortium, creating an easier way for patients and physicians to find trials regardless of location. UC BRAID also built a research exchange, UC ReX, to simplify access to more than 15 million de-identified patient records across the system, and streamlined approvals of multi-site biomedical research programs.

Cancer Center Consortium—five NCI-designated centers with a shared goal

In fall 2017, the cancer centers within UC Health joined forces in a consortium to accelerate research and improve patient outcomes. There are approximately 1,500 cancer centers in the U.S., but only 49 have achieved the highest designation—Comprehensive Cancer Center—meaning they demonstrate scientific leadership, provide early phase innovative clinical trials, operate substantial research programs and are a source of expertise. UC Health is the only health system in the nation with five NCI-designated comprehensive cancer centers.

Each year, more than 170,000 Californians are diagnosed with cancer. Nearly 60,000 annually die from it. UC's Cancer Consortium is taking a leadership role by providing clinical trials using the latest experimental drugs, matching drugs to cancer subtypes and rare tumors, developing precision medicine technology, harnessing big data and working to reduce socioeconomic disparities in access to care.

Cardiothoracic Surgery—improving heart, lung and esophagus care

More than eight million Californians have some form of heart disease. The fourth leading cause of death in the state is lung disease. These and other medical conditions in the chest are tackled by cardiothoracic surgeons.

UC Health's cardiothoracic surgeons began a collaboration in 2012 to improve outcomes, reduce practice and outcome variability across the five medical centers, and reduce overall cost and cost variability at each center. Through performance dashboards, national benchmarking, best practice identification and data standardization and analysis with UC's Center for Health Quality and Innovation (CHQI), the results have begun to pay off. Post-surgical readmissions have decreased, blood utilization has improved and length of stays have decreased.



1998

Led by Dennis Slamon, UCLA researchers develop the revolutionary breast cancer drug Herceptin.



2011

UC San Diego Medical Center performs the West Coast's first implant of the world's only FDA-approved total artificial heart.

Looking ahead — a dynamic, competitive environment and moving forward through uncertainty

Actions at the federal level will reduce the number of people who have health insurance, placing an additional financial strain on the limited resources of public hospitals. Essential programs are under review at federal and state levels, potentially scaling back their scope or redirecting badly needed funds away from safety net hospitals.

At the same time, California's population continues to climb. Yet UC's ability to meet the state's growing health care needs is hampered. Federal caps on the number of Graduate Medical Education residencies are a bottleneck to growing the number of physicians. Similarly, the ability to train tomorrow's nurses, optometrists, dentists, pharmacists, public health professionals and veterinarians is constrained by limited state support.

In August 2017, UC President Janet Napolitano, president of the UC system, and Lloyd Dean, president and CEO of Dignity Health, began co-chairing the California Future Health Workforce Commission to bring together policymakers, health care providers, educators and state and community leaders to develop recommendations for legislative and regulatory consideration. For the people of UC Health our three missions continue: educate and train the next generation of caregivers, develop new treatments and cures, and provide a public service to the people of California.

For more information

UC Budget for current operations: ucop.edu/operating-budget/_files/rbudget/2018-19budgetforcurrentoperations.pdf

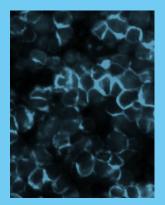
UC Information Center: universityofcalifornia.edu/infocenter

Medical Centers Annual Financial Report: finreports.universityofcalifornia.edu/index.php?file=med_ctr/16-17/Med-Centers-16-17-report.pdf

UC Health: health.universityofcalifornia.edu

UC Health: At a Glance: ucop.edu/uc-health/ files/uchealth-at-a-glance.pdf

UC Health Topic Brief: ucop.edu/institutional-research-academic-planning/_files/UCHealth-a-century-of-health.pdf



2017

UCLA researchers create a new system to produce human T cells, the white blood cells that fight against disease-causing intruders in the body, using an artificial thymus developed at UCLA.



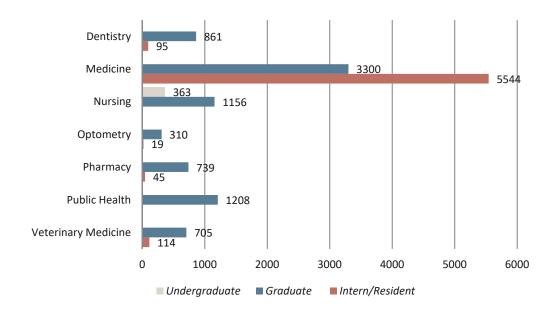
2017

A first: researchers at UCSF Benioff Children's Hospital Oakland administer gene editing therapy in a human body. The treatment is part of a clinical trial of genome editing therapy.

11.1 HEALTH SCIENCES STUDENTS

UC trains large numbers of health care professionals.

11.1.1 Health sciences students by discipline



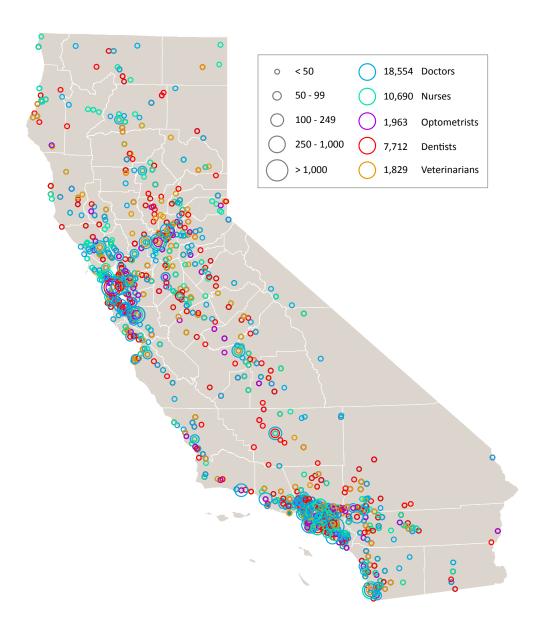
Source: UC Information Center Data Warehouse

Nearly 15,000 students are enrolled in UC Health's health sciences schools or residency programs. This next generation of caregivers is an important part of California's future as its population grows, ages and becomes more diverse.

UC Health 179

UC-trained health sciences professionals remain in California in high numbers.

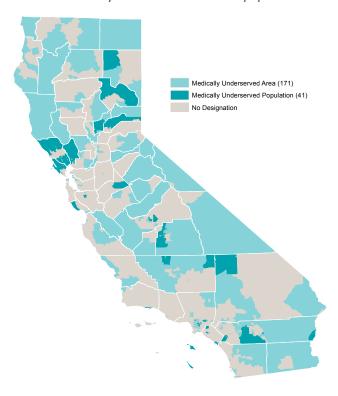
11.1.2 Location of doctors, nurses, dentists, optometrists and veterinarians trained by UC since 1999 and currently licensed in California.



Approximately 86 percent of UC health sciences students and 77 percent of UC medical residents are expected to remain in the state after completing training or education, based on historical patterns. This high rate of retention makes UC Health one of the principal sources for the training of health professionals for California.

UC is addressing medical needs in California's underserved communities.

11.2.1 Medically underserved areas and populations



Source: OSHPD, Workforce Development Division, 2018

UC is filling gaps in underserved communities.
California is a vast state, and physician distribution is uneven. The state averages 72 primary care¹ physicians per 100,000 population overall, but some regions such as the San Joaquin Valley and Inland Empire have much lower ratios: 39 and 35 respectively². As many providers age, and the state's population expands, the potential for a primary care physician shortage intensifies. All of UC Health's schools emphasize public service and caring for the underserved. These programs include:

PRIME: In 2004, UC launched a systemwide medical

education program intended to address state needs. Referred to as "Programs in Medical Education," or PRIME, the program includes innovative training programs focused on meeting the health needs of California's underserved populations, by combining specialized coursework and clinical training experiences designed to prepare future clinician experts, leaders and advocates for the communities they will serve. As of 2017–18, UC Health enrolled 361 medical students in PRIME, with more than 60 percent coming from underrepresented groups in medicine.

UC Riverside: Persistent shortages also led to the creation of a different kind of medical school at UC Riverside in 2013. It focuses on medical specialties with significant shortages. Rather than relying on an academic medical center, UC Riverside embeds its students and residents in community based health organizations. Additionally, the school uses funds from foundations and individual donors to waive tuition and fees for graduates who agree to practice medicine in the area for five years.

UCLA International Medical Graduate (IMG)

program: The pre-residency training program is for U.S. citizens and permanent residents who received medical education in Latin America and who are fluent in Spanish and English. These graduates undergo intensive, standardized professional instruction and clinical clerkships. In return, they agree to serve for 24-to-36 months in medically underserved communities in California after completing their Family Medicine residencies. This is the only program of its kind in the nation.

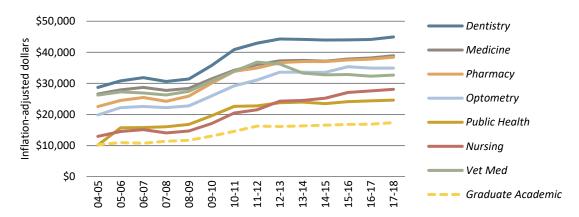
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¹ https://www.ucop.edu/uc-health/_files/uc-sjv-final-report-april-2018.pdf

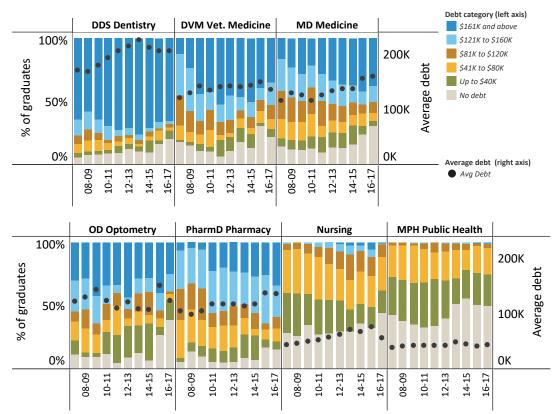
² https://www.chcf.org/wp-content/uploads/2017/12/PDF-CaliforniaPhysiciansWhoThevAre2017.pdf

Health science professional degree fees have leveled off after incurring sharp increases during years of declining state support. Average debt levels are increasing.

11.3.1 Average total charges for health professional degree students, Universitywide, 2005–06 to 2017–18



11.3.2 Health sciences professional degree students debt at graduation, Universitywide, 2007–08 to 2016–17

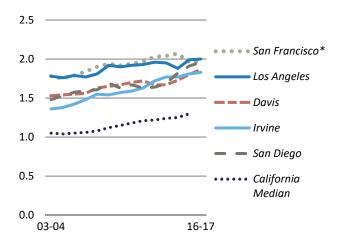


Over the years, the rising cost of graduate education has not been matched by increases in state support. In fact, state support for UC health sciences schools declined significantly during recurring state fiscal crises, which caused the University to increase tuition, campus-based fees and professional degree

supplemental tuition. This cost-shifting has caused students to take on increasing amounts of debt. At least one-third of the revenue raised from professional school fees is used to provide financial aid to current students.

As academic medical centers and safety net hospitals, UC Health hospitals are destinations for some of the most critically ill patients in the state.

11.4.1 Patient complexity (Case Mix Index)

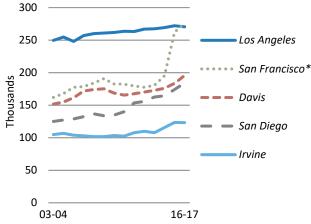


*San Francisco data includes UCSF Medical Center, Children's Hospital & Research Center Oakland (CHRCO), and the activities of UCSF Medical Group.

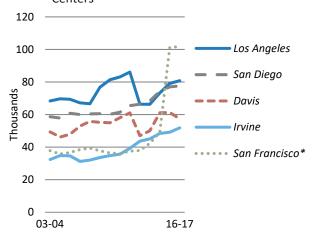
One way to understand the health needs of hospitalized patients is the Case Mix Index (CMI). Indexes above 1.0 indicate increasingly poor health. In most acute care hospitals in California CMIs are between 1.1 and 1.5. The CMI at UC Health hospitals ranged from 1.83 - 2.00 in 2017. Case mix index is calculated at the patient level and is not determinable systemwide.

UC Health operates twelve hospitals across five academic medical centers totaling 3,912 beds. UC Health hospitals admitted 171,447 patients in FY 2017, an increase of 3.9 percent compared to FY 2015. The average length of stay was 6.1 days. Supplementing its inpatient capacity, UC Health provides robust outpatient services. In FY 2017, the hospitals had 5.1 million outpatient visits, an increase of 13.2 percent compared to FY 2015. Emergency department visits added another 369,502 encounters, a 3.7 percent increase from FY 2015.

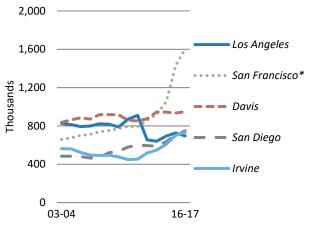
11.4.2 Hospital Inpatient Days, UC Medical Centers



11.4.3 Outpatient Emergency Visits, UC Medical Centers



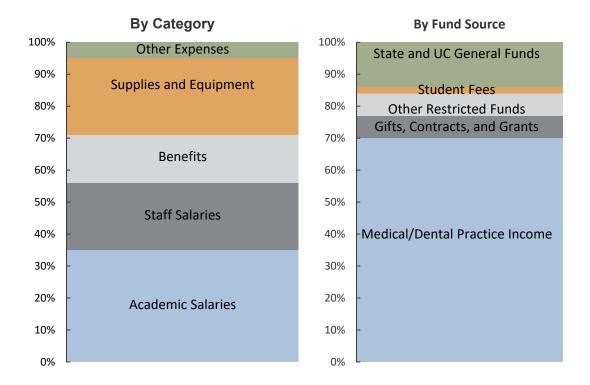
11.4.4 Outpatient Visits: hospital clinics, primary care network, home health and hospice



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Medical and dental practice income supported over half of the instructional expenditures in the health sciences in 2016–17.

11.5.1 Health sciences instructional expenditures by fund source, 2016–17



Source: UC Budget for Current Operations

Although part of the University of California, only a small portion of UC Health's funding comes from the state's General Fund. The overwhelming majority comes from reimbursements and payments for clinical services.

More than half of the instructional expenditures at the health sciences schools are supported by medical and dental practice income. State and UC general funds only provide about 15 percent of revenue.



1867

Governor Frederick Low proposes that the existing College of California be merged with the state's Agriculture, Mining and Mechanical Arts College, making the case to trustees that they would be stronger together.

"You have here in your scholarship, organization, enthusiasm and reputation, but not money. We, in undertaking the state institution, have none of these things, but we have money. What a pity they could not be joined together."

INSTITUTIONAL PERFORMANCE

History

In 1867, the trustees of the College of California donated 160 acres of land with "An earnest hope and confident expectation that the State of California will forthwith organize...upon this site a University of California which shall include a College of Mines, a College of Agriculture and an Academical College, all of the same grade and with courses of instruction equal to those of Eastern Colleges."

The results of the 1916 Chicago International Livestock Show offered a glimpse into the importance of the University in the realm of animal husbandry when livestock from the University Farm swept the championships.

In 1996, UC Irvine and UC Davis joined UC Berkeley, UCLA, UC San Diego and UC Santa Barbara as members of the prestigious Association of American Universities, a group of 62 leading public and private research institutions in the United States and Canada. AAU members are consistently recognized for excellence in academic research and scholarship. UC is the only university system in the nation with more than one AAU member.

Overview

UC requires significant resources and planning to support its instruction, research and public service missions. Several indicators can provide insight into the financial health of the University, the state of capital and space resource, and the environmental sustainability of campus operations and growth.

Financial trends

The University's revenues, totaling over \$32 billion in 2016–17 (excluding the Department of Energy Laboratories), fund its core mission and a wide range of support activities. Nearly one-third of that total directly funds the five UC medical centers, which have collectively nearly doubled in size in the past decade. Contracts and grants are the next largest source of funds and help sustain UC's research mission.

State general funds, tuition and fees as well as UC general funds make up the core revenues for the University's instructional mission. State funds used to be the largest single source of support for instruction; however, cuts in state funding over the past decade reduced this resource significantly. Today, state educational appropriations are still lower in inflation-adjusted dollars than they were in 2006–07, and over \$1 billion lower than what they were in 2000–01, despite significant enrollment growth that occurred during that same period. The decline in state support has been offset in part by additional revenues from student tuition and fees from both enrollment growth and increased rates. Importantly, financial aid increases over this period offset the tuition and fee increases for many UC students. Improvements in the California economy since 2012, combined with the passage of Proposition 30, have brought some stability to the state budget and thus to the University's core budget. Modest increases in state funds have allowed for greater stability in tuition and fees and better planning for enrollment growth.



1879

The new Constitution gives the Regents "full powers of organization and government, subject only to such Legislative control ... to insure compliance with the terms of the endowments of the University ..."



1956

The university "seems to me more and more to be California's highest, most articulate idea of itself, the most coherent perhaps the only coherent expression of the California possibility."

— Joan Didion, UCB, '56

As core revenues per student have declined, the University has sought to increase revenues from other sources. Gift funds have become increasingly important. Private giving has increased significantly over the past decade; however, almost 99 percent of these funds are for restricted purposes. The largest areas of gifts are for research, departmental support and capital projects. The small amounts for instruction and student support cannot offset needs created by enrollment growth that has far outpaced growth in the core revenues. Private giving varies by campus and relates to the campus's age, number of alumni and the presence of health science programs.

Salaries, wages and benefits for academic and support staff are the largest areas of expenditures, which is typical for public and private universities. Chronic shortfalls in priority areas—graduate student support, faculty salaries, the ratio of students to faculty, capital renewal, the need to upgrade outdated information systems and a focus on sustainability—present ongoing financial challenges.

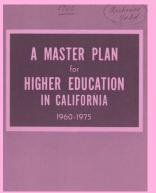
Capital program and funding

The University maintains approximately 6,000 buildings enclosing 143 million gross square feet on approximately 30,000 acres across its ten campuses, five medical centers, nine agricultural research and extension centers, and the Lawrence Berkeley National Laboratory. With such a substantial infrastructure, the University strives to be a good steward of the capital resources entrusted to its care.

UC's capital program is funded by a combination of state and non-state funds. Historically, the majority of UC's core academic capital projects were funded by the state. With state funds playing a declining role in the University's capital program over the past decade, the University has been forced to rely on other resources to fund capital projects. In the past decade, non-state funds, including external financing that utilizes non-state sources to service the debt, have accounted for 86 percent of UC's capital program funding.

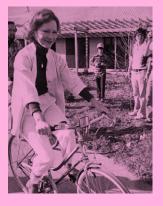
During fiscal year 2016–17, UC approved capital project budgets totaling \$3.6 billion, close to triple the value of project approvals in 2015–16. This dramatic increase is due to the approvals of: the Merced 2020 project, which builds out the second phase of the campus; projects related to the President's Housing Initiative to increase the supply of on-campus beds for students; and expansion of research space. Approximately 57 percent of the cost of capital projects in 2016–17 was met through debt financing. The remaining capital projects were funded by non-state sources, including the public-private partnership in support of the Merced 2020 project.

In the recent past, the majority of capital projects were aimed at growing core academic programs and replacing aging facilities. In 2016–17, there was a dramatic increase of projects that addressed enrollment growth as well as program improvements. UC must maintain and upgrade its facilities, more than half of which are at least 35 years old, and many of which are in need of seismic upgrades.



1960

The Master Plan for Higher Education was revolutionary. With its passage, California became the first place in the world to promise a spot in higher education to anyone who wanted it.



1966

UC Davis bans almost all motor vehicle use from its central core roadways after Chancellor Emil Mrak asked UC Davis campus architects to "plan for a bicycle-riding, tree-lined campus."

UC sustainability

The University of California is a national leader in sustainability. The University affirmed its leadership position in 2007 when all ten Chancellors signed the American College & University Presidents' Climate Commitment. Furthering this leadership, in November 2013, UC announced an initiative to achieve carbon neutrality by 2025. This initiative will make UC the first major research university system to achieve carbon neutrality.

The initiative builds on UC's work on climate and carbon neutrality research and furthers its leadership in sustainable business practices. Even as the campuses expand, overall greenhouse gas emissions have continued to drop due to improvements in energy efficiency, developing new sources of renewable energy and enacting a range of related strategies to cut carbon emissions.

Upfront investments in energy efficiency are often costly, but Energy Efficiency Partnership projects across the system have so far netted over \$220 million in cumulative avoided energy costs. Moreover, UC's policy requiring that all new construction projects and major renovations receive LEED® (Leadership in Energy and Environmental Design) certification helps assure that campus growth does not increase energy costs and climate pollution as much as it would otherwise. As of 2017, UC has 276 LEED certifications, the most of any higher education institution in the country.

The University's Sustainable Practices Policy, updated in 2017, has multiple areas of focus: Climate Action, Green Building, Clean Energy, Transportation, Zero Waste, Sustainable Procurement, Sustainable Food Services and Water, demonstrating the University's commitment to wise stewardship of its resources and the environment.

For more information

UC's Operating Budget: ucop.edu/operating-budget/budgets-and-reports/index.html

Annual Financial Reports: reportingtransparency.universityofcalifornia.edu

Annual reports on University private support: ucop.edu/institutional-advancement

UC's capital programs: ucop.edu/capital-resources-management/index.html

Annual Major Capital Projects Report: ucop.edu/design-services/resources/major-capital-projects-implementation-reports/index.html

Ten-Year Capital Financial Plan: ucop.edu/capital-planning/resources/index.html

Information on UC's sustainability: ucop.edu/sustainability



2014

The University of California announces that it will make the largest solar energy purchase by any U.S. higher education institution to help power its campuses and medical centers more sustainably.

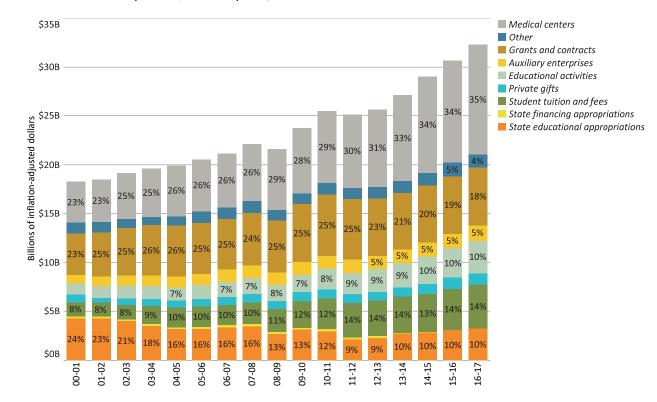


2016

UC Merced launches the 2020 Project to roughly double the physical capacity of campus with 13 new buildings, all of which will achieve at least a LEED Gold sustainability certification.

Over time, different sources of UC revenue have grown at different rates.

12.1.1 Revenues by source, Universitywide, 2000–01 to 2016–17



Source: UC Revenues and Expense Trend Report. Amounts do not include Department of Energy Laboratories.

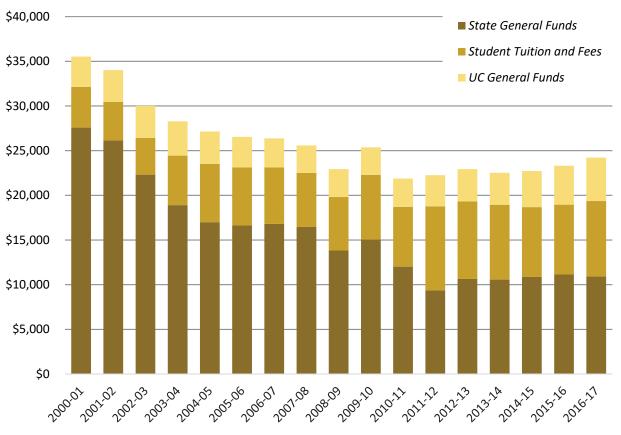
Two major trends are reflected in the University's revenue sources over time. First, revenues associated with the University's medical centers and related activities have grown substantially since 2000–01. Medical center revenues now represent 35 percent of all UC revenues. On top of this category, a significant portion of revenues shown as "Educational activities" above is also related to health services.

Second, among the University's core fund revenues, state appropriations now contribute less to the University's operating budget than student tuition and fees. UC used to receive 8.1 percent of all state general funds in 1966–67, while today it receives only 2.5 percent of those funds.

Historically, state funding had been the largest single source of support for the University's core budget. State educational appropriations are for educational and other specific operating purposes, whereas state financing appropriations provide principal and interest payments for lease-purchase agreements.

Since 2000–01, available core revenues per student have declined by 31.8 percent.

12.1.2 Per-student average inflation-adjusted core revenues, Universitywide, 2000–01 to 2016–17



Source: UC Budget Office

Since 2000–01, average inflation-adjusted revenues per student have declined 31.8 percent. During the same period, the state general fund portion has fallen even more steeply, by nearly 61 percent.

In some years, the University increased student tuition and fee levels to partly offset the long-term decline in state support. Financial aid increases have covered some or all of these cost increases for families with financial need. These increases in student fee revenue have not, however, fully offset the reduction in state funding per student.

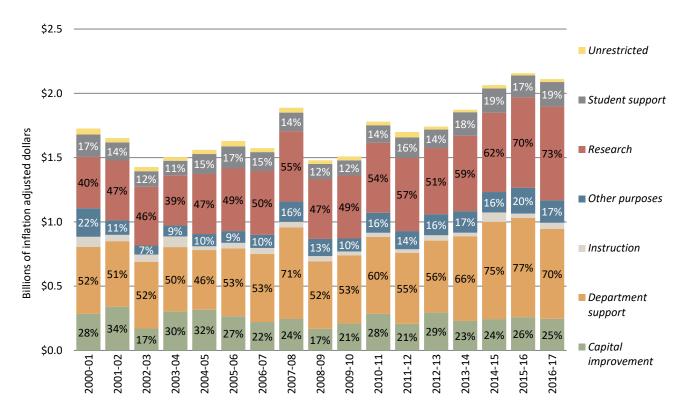
UC general funds are composed mostly of nonresident supplemental tuition revenue and indirect cost recovery from research contracts and grants.

Overall, less core revenue per student has put downward pressure on the spending per student, as seen in indicator 12.1.5. Ultimately, this pullback may affect the quality of instruction and the student experience.

Institutional Performance 191

Virtually all gift funds (99 percent) are restricted by donors in how they may be used.

12.1.3 Current giving by purpose, Universitywide, 2000–01 to 2016–17



Source: UC Institutional Advancement

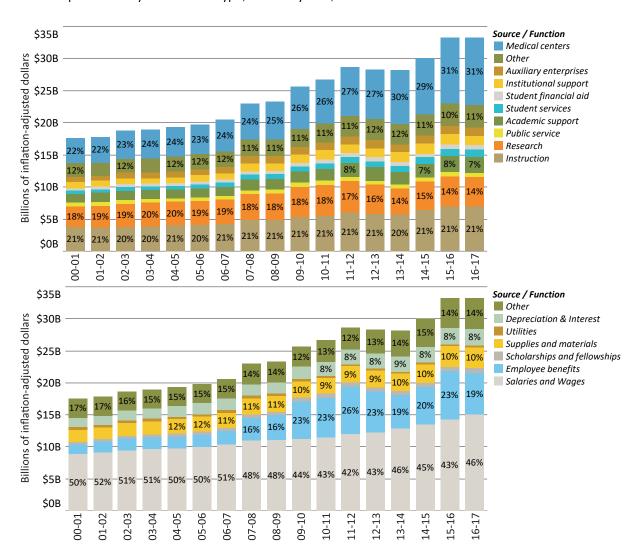
The University is energetically pursuing increased philanthropic giving as a means to help address budget shortfalls and expand student financial aid.

In 2016–17, new gifts to the University totaled about \$2.1 billion. Virtually all of these funds are restricted for specific purposes and are not available to support general operating costs. In addition, approximately \$434 million was designated for endowment, so only the income/payout is available for expenditure. Gifts designated for department support are only eligible for use by a specific department or academic division.

The University's remarkable achievement in obtaining private funding in recent years—even during state and national economic downturns—is a testament to UC's distinction as a leader among the nation's public colleges and universities in generating philanthropic funds. These gifts reflect the high regard in which the University is held by its alumni, corporations, foundations and other supporters.

Personnel costs and medical centers are an increasing portion of UC expenditures.

12.1.4 Expenditures by function and type, Universitywide, 2000–01 to 2016–17



Source: UC Revenue and Expense Trends Report. Dollars are inflation-adjusted dollars using CCPI-W. Amounts do not include Department of Energy Laboratories.

When viewed by function, the combination of instruction, research and public service accounted for 36.8 percent of total expenditures during 2016–17, while medical centers (UC's teaching hospitals) accounted for 31 percent. Other expenses by function is comprised of interest, depreciation, and miscellaneous expenditures.

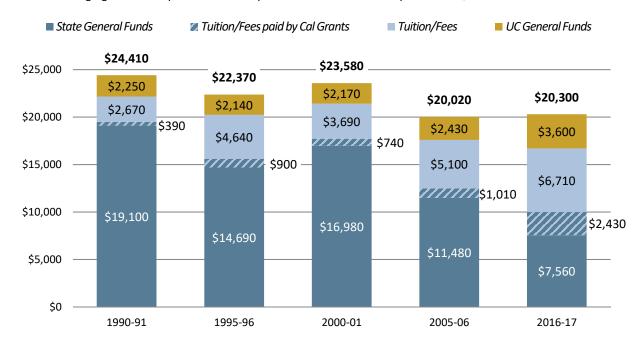
Looking at expenditure types, nearly 65 percent are dedicated to personnel costs since higher education,

health care delivery and research are inherently labor-intensive enterprises. Salary costs have increased both due to higher average salaries and increased full-time equivalent (FTE) employees, particularly at the medical centers. These increases also affect employee benefits; however, benefits costs also fluctuate due to variations in investment returns on the pension and the discount rate for retiree health.

Institutional Performance 193

Since 1990–91, total instructional expenditures per UC student have declined by 17 percent, yet students and their families bear a greater share of that cost.

12.1.5 Average general campus core fund expenditures for instruction per student, 1990–91 to 2016–17



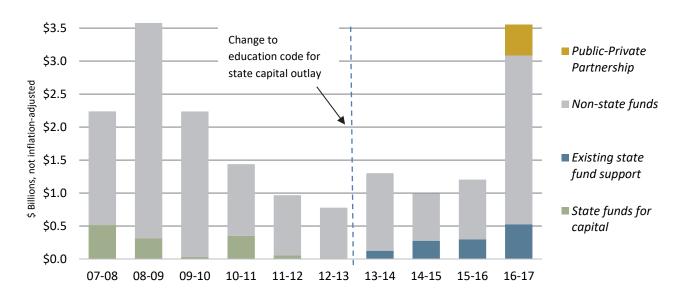
Source: UC Budget Office, inflation-adjusted amounts.

Since 1990–91, average expenditures for instruction per student from core funds have declined by 17 percent in inflation-adjusted dollars. Of this amount, the share provided by state support for the University's budget declined from 78 percent in 1990–91 to only 37 percent of the total in 2016–17. In contrast, the contribution from tuition and fees has increased from 13 percent to 45 percent during the same period.

The state's Cal Grant program has covered tuition and fee increases for many California resident undergraduate students. However, even after taking Cal Grants into account, state funding covered only 49 percent of instructional expenditures from core funds in 2016–17 compared to 80 percent in 1990–91.

The majority of UC's capital project funding over the last ten years continues to be derived from non-state fund sources. The last year UC received state support of any appreciable amount for its capital program was in 2011–12; starting in 2013–14, changes to the California Education Code allowed UC to direct a portion of its existing state fund support to capital.

12.2.1 Sources of capital project funding by year of approval Universitywide 2007–08 to 2016–17



Source: UC Capital Asset Strategies

UC's capital program is funded by a combination of state and non-state funds. State funds were historically the primary source of funding for core academic facilities and seismic compliance for acute care hospitals. Non-state sources fund self-supporting enterprises, such as housing, parking, athletics and medical enterprises, which are generally not eligible for state funding.

As illustrated in indicator 12.2.1, the dominant source for capital is non-state resources. UC used to receive state funds specially designated for capital projects; however, the last state General Obligation (GO) bond benefitting UC was in 2006, and the last State Lease Revenue (SLR) bond funds for capital was in 2011.

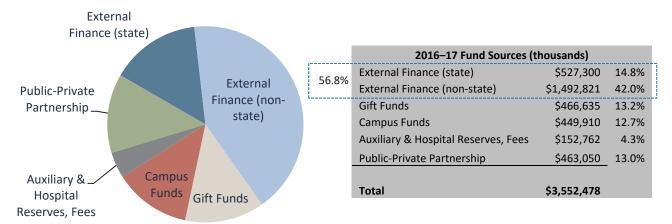
Legislation in 2013–14 and 2016–17 enacted a major change in how UC could fund its debt service, availability payments and expenditures for capital outlay. Instead of receiving dedicated capital funding from the state, UC can direct a portion of its state General Fund appropriations to fund debt service for state-eligible capital projects. The portion of General Funds that is directed to capital does not represent new state funding and is made up of funds that historically would have been used for operations.

In the past decade, non-state resources have accounted for the majority of UC's capital projects funding. To the extent that non-state funds are used to support core academic capital needs, less funding is available to support other high priority needs such as deferred maintenance, seismic and enrollment growth.

Institutional Performance 195

Approximately \$2 billion of external financing supports UC's 2016-17 capital program.

12.2.2 Sources of capital spending detail, Universitywide, Project budgets approved in 2016–17



Source: UC Capital Asset Strategies

Financial challenges require each campus to carefully consider how to deploy resources to optimize the benefits to academic programs and the campus mission as a whole.

With state funding playing a declining role in the University's capital program over the past decade, the University has been forced to rely on other means to fund capital projects. As noted in indicator 12.2.2, almost 15 percent of capital funding for the 2016–17 capital program utilized external financing covered by state General Funds¹ that could have been used to support operations.

In addition, in the absence of new state funding for capital, campuses have decided to fund critical projects that cannot be delayed. In these cases, campuses redirect non-state funds to projects that otherwise would have been funded with state resources.

External financing that utilizes non-state sources to service the debt continued to play a central role in funding capital needs. In 2016–17, non-State financing supported student housing projects as well

UC is expanding its use of public private partnerships (P3) to implement its capital program. The P3 funding shown above supports the Merced 2020 project.

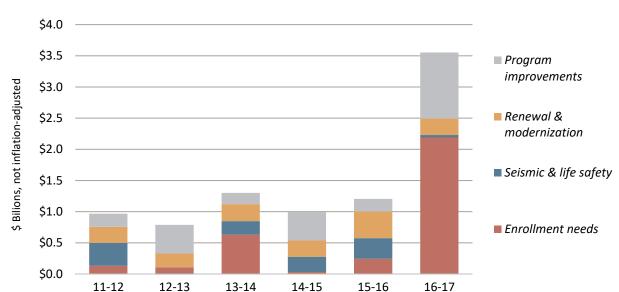
Gift funds comprise a significant portion of the 2016–17 capital program. UCLA received large gifts to support the graduate art program, education, and to expand facilities for the Anderson School of Management. San Francisco received gifts to support research at the Mission Bay campus.

The remainder of UC's capital program is funded by campus funds and other non-state sources. These campus funds are derived from a variety of sources including indirect cost recovery and investment earnings.

as research projects related to program improvements in the sciences. About 42 percent of capital project funding in 2016–17 came from non-state external financing. Together with external financing using state general funds, about 57 percent of project funding relies on external financing.

¹This external financing was approved by the Regents in March of 2016 and supports the 2016–17 Budget for State Capital

The majority of capital funds approved for expenditure in 2016–17 supported projects addressing core academic programs and aging facilities.



12.2.3 Types of capital projects, based on budgets approved by year, Universitywide, 2011–12 to 2016–17

Source: UC Capital Asset Strategies

Capital projects may address several objectives. Continuing enrollment growth has largely driven the University's requirement for new teaching laboratories, classrooms, student housing and recreational facilities. In 2016-17 alone, UC approved almost \$2.2 billion for projects that address enrollment needs, far greater than any recent year. At \$1.3 billion, the Merced 2020 project builds out (approximately 790,000 square feet)—an entire second phase of the campus. In addition, the President's Student Housing Initiative to provide affordable housing supports enrollment as well. Lastly, the campuses must expand teaching laboratories and classrooms to meet the increases in enrollment. Nearly all of these projects occurred without dedicated state funding.

Program improvements are another large area of capital investment. Modern program initiatives require state-of-the-art space, often necessitating the repurposing of existing facilities or new construction. In 2016–17, UC devoted over \$1 billion

to program improvements to address academic, research and clinical priorities. This is more than double the amount spent on these sorts of projects in any recent year. This increase is attributable to the expanded research space at UCSF's Mission Bay Campus.

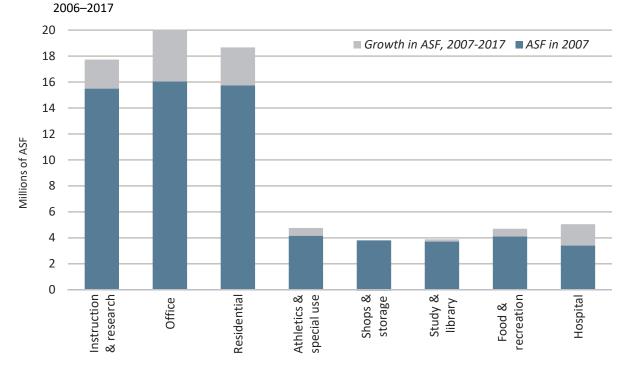
Campus facilities age and must be renewed and modernized to ensure safety, extend the useful life of the buildings and improve energy efficiency. Building systems, elevators and roofs need periodic replacement and renewal during the lifespan of a building. In the past five years, UC approved \$1.45 billion for these types of projects.

In addition to general renewal, the University continues to review the seismic safety of its facilities, prioritize buildings for remediation and implement seismic upgrades. While the investment in 2016–17 was modest, over the past 5 years, UC devoted \$824 million to seismic and life-safety corrections to buildings.

Institutional Performance 197

In the past decade, UC space has increased by approximately 21 percent, with most of the growth targeted for instruction and research, offices and residential uses.

12.2.4 Assignable square footage (ASF), Universitywide



Source: UC Capital Asset Strategies

Assignable square footage (ASF) is the space available for programs or assigned to specific uses. It does not include corridors, bathrooms or building infrastructure.

Indicator 12.2.4 illustrates the growth in space over the last decade, according to categories for assignable space. Since 2007, space has increased by 12.0 million ASF for a total of 78.5 million ASF.

In the past decade, instructional and research space increased by about 2.2 million ASF, office space by 4 million ASF, and residential space by 2.9 million ASF. The space increase for these areas is roughly proportional to the increase in enrollment for the same period. Residential space has grown as

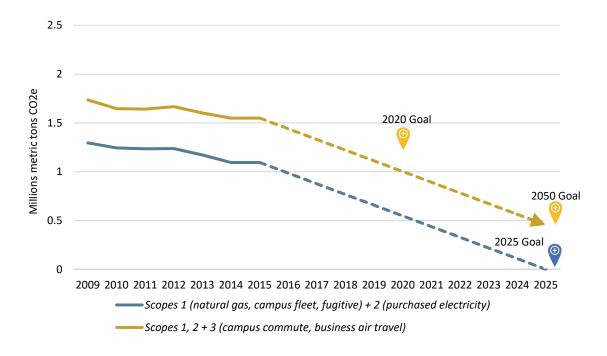
campuses strive for more on-campus student housing to improve student life in living/learning communities and to reduce environmental impacts from commuting. Increases in the student population have also required additions to athletic, recreational and food service space.

Hospital space significantly grew in the past decade. All five medical centers experienced growth but most of the growth in hospital space can be attributed to the Ronald Regan UCLA Medical Center (2008), UCSF Medical Center at Mission Bay and Ron Conway Family Gateway Medical Building (2015), and the Jacobs Medical Center at UC San Diego Health (2016).

¹ Budget for Current Operations, 2018–19, Appendix Display 8: Enrollment History, 1980–81 Through 2017–18.

UC has made consistent progress toward its greenhouse gas emission goals.

12.3.1 Greenhouse gas emissions compared to climate goals Universitywide 2009–2025



Source: UCOP Energy and Sustainability Office

The University's greenhouse gas (GHG) emissions decreased slightly in 2016 compared to 2015. This included a 7 percent increase in Scope 1 emissions, a 17 percent decrease in Scope 2 emissions, and a minor increase in Scope 3 emissions. The overall reduction has occurred even as campus built space has expanded rapidly in recent years. Emissions are expected to decrease further in 2017 as UC's Wholesale Power Program procures more renewable energy. The University's total emissions continued to fall below 2000 levels, maintaining the 2014 UC policy goal.

All campuses have a climate action plan identifying measures to reduce GHG emissions. UC Berkeley, UC Santa Barbara, and UCLA have exceeded the 2020 goal of reducing Scope 1, 2, and 3 greenhouse gas emissions to 2020 levels, and UC Riverside is within 2 percent of the target.

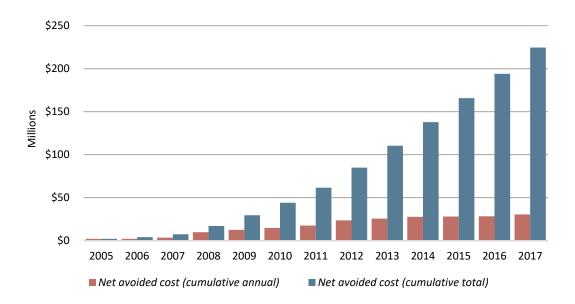
Campuses are currently in the process of updating these plans to include the 2025 carbon neutrality goal. To meet that goal, UC will have to reduce emissions by more than one million MTCO2e. Systemwide progress continues to be made toward these goals. This year it included such highlights as:

- 40 MW of solar electricity generation capacity is in operation across all 10 campuses, one medical center and ANR
- UC Wholesale Power Program's two largescale solar projects were producing renewable electricity for the entire year after coming online in 2016
- Securing two sources of renewable biogas that will offset approximately 10 percent of UC's natural gas consumption

Institutional Performance 199

Energy efficiency upgrades resulted in cumulative net avoided costs for the University of \$224 million by the end of 2017.

12.3.2 Cost avoidance from energy efficiency projects Universitywide 2005–2017



Source: UCOP Energy and Sustainability Office

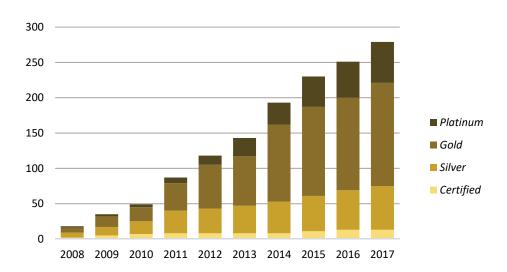
In 2004, the University formed a statewide energy efficiency partnership program with California State University and the state's four investor-owned utilities to improve the energy performance of higher education facilities. The partnership provides funding for equipment retrofits, monitoring based commissioning, and training and education.

Forty-two UC projects participated in the program in 2017, earning \$3.8 million in incentives. Since its inception, over 1,000 energy efficiency and new construction projects have registered with the Energy Efficiency Partnership Program, which has allowed UC campuses to avoid more than \$220 million in utility costs while reducing greenhouse gas emissions.

While campuses have used a portfolio approach to balance projects with shorter and longer paybacks, the future focus on the remaining deeper energy efficiency retrofits to achieve climate goals will result in lower levels of net avoided costs due to larger upfront investments.

By the end of 2017, UC had achieved 276 LEED® certifications, more than any other university in the country.

12.3.3 LEED® certifications, Universitywide, 2000–2017 (cumulative)



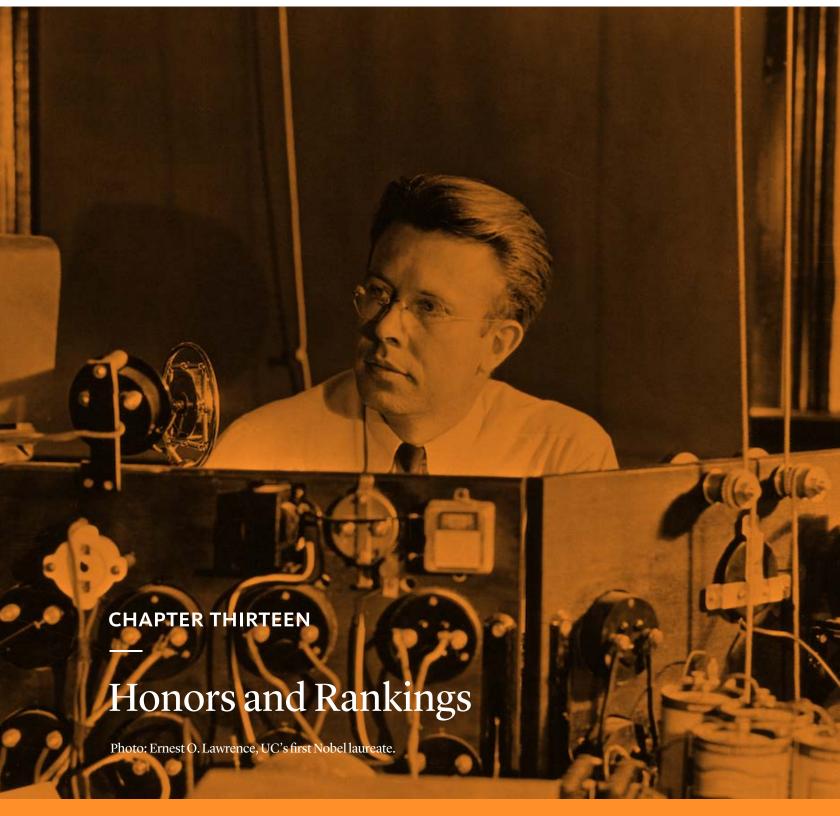
Source: UCOP Capital Resources Management

UC's sustainability policy requires that all new buildings and renovations are designed and constructed to a minimum LEED (Leadership in Energy and Environmental Design) for New Construction Silver rating. The policy also states that each campus shall seek to certify as many buildings as possible through the LEED - Existing Buildings, Operations and Maintenance (EBOM) rating system to "green" the day-to-day, ongoing environmental performance of its existing facilities.

UC added approximately 1.5 million square feet of new LEED certified buildings in 2017 and approximately 20 percent of UC building space is now LEED certified. UC has 276 LEED certifications systemwide, with 39 projects certifying under the LEED – EBOM system. In 2017, 5 projects earned LEED Platinum certification, 11 earned LEED Gold, and 5 were LEED Silver. UC's total of 276 LEED certifications is the most of any higher education institution in the country.

UC LEED® certifications are listed at: http://ucop.edu/sustainability/policy-areas/greenbuilding/index.html

Institutional Performance 201



1939

Ernest O. Lawrence receives the Nobel Prize for designing the first cyclotron, a device for accelerating nuclear particles to very high velocities, which launched the scientific use of particle physics to discover the fundamental structure of matter.

Lawrence was the University of California's first Nobel laureate.



1963

UCSD professor Maria Goeppert-Mayer wins the Nobel Prize in physics for her discovery of nuclear shell structure. She was only the second woman to win a Nobel Prize in physics, after Marie Curie.

HONORS AND RANKINGS

History

Decades before U.S. News and World Report and other rankings, Edwin Emery Slosson published a book called *Great American Universities* in 1910, featuring write-ups on ten leading American institutions of higher education — among them the University of California. Noting UC's emergence from the "Union of a New England classical religious college and a Morrill Act school of agriculture and mechanic arts," he wrote: "I know of no other university which cultivates both mechanics and metaphysics with such equal success, or which looks so far into space, and, at the same time, comes so close to the lives of the people; or which excavates the tombs of the Pharaohs and Incas while it is inventing new plants for the agriculture of the future."

From the first UC Nobel Laureate, (Harold Urey, 1934) to the most recent UC faculty Pulitzer Prize winner (Alan Taylor, 1996 and 2014), UC faculty have a long history of winning prestigious awards spanning disciplines from the sciences to the humanities. Juan Felipe Herrera, professor emeritus in the department of creative writing at UC Riverside, was the nation's 21^{st} Poet Laureate.

Overview

Honors and rankings are one way to demonstrate the University's performance and prestige. They reflect reputations and help to position the University nationally and internationally. This chapter first presents metrics of faculty awards and memberships. These represent some of the highest aspirations of research faculty, signaling noteworthy participation and contribution to research and scholarship in a particular area of expertise.

While the University's faculty demonstrate unparalleled excellence, also noteworthy is the opportunity for students of diverse backgrounds to learn and study with these distinguished researchers and educators. One of the points of pride for the University of California is providing students from the bottom end of the economic spectrum with access to an educational and research environment comparable to the nation's finest private institutions but on a significantly larger scale.

This chapter features data from the New York Times's annual College Access Index, showing that the University of California leads the nation in the "Top Colleges Doing the Most for the American Dream." It also features data from the Equality of Opportunity Project and the associated CLIMB initiative, which leverage national earnings and taxation data to study how colleges affect social mobility.



1980

Yusef Komunyakaa receives his MFA from UC Irvine's acclaimed creative writing program. He goes on to win the Pulitzer Prize for poetry in 1994.



2007

UC Riverside biologist Cheryl Hayashi earns a MacArthur Foundation genius grant for her research on the evolution and composition of spider silk. Universities are ranked in numerous ways, with publishers of rankings choosing criteria based on different audiences and different aims. This chapter highlights just two well-known rankings. U.S. News and World Report (USNWR) focuses on academic reputation, graduation rates, student selectivity and financial resources to create its list of America's Best Colleges. The Shanghai Academic Ranking of World Universities ranks institutions around the globe, primarily using faculty research productivity. Additional rankings for UC campuses are available at the link in the section below. While recognizing that these rankings may be useful sources of information, UC does not endorse any particular ranking system nor does it have specific goals with respect to any of them.

For more information

UC Rankings at a glance: ucop.edu/institutional-research-academic-planning/_files/uc-rankings-at-a-glance.pdf

An extended list of rankings: ucop.edu/institutional-research-academic-planning/_files/rankings-brief-2017.pdf

More on the Equality of Opportunity Project: ucop.edu/institutional-research-academic-planning/_files/Economic-Mobility-of-Undergraduates.pdf



2012

UC Riverside poetry professor Juan Felipe Herrera, known for chronicling the bittersweet lives, travails and contributions of Mexican Americans, is named U.S. Poet Laureate.



2013

Mario Molina of UCSD, receives the Presidential Medal of Freedom for his work uncovering how chemical pollutants called chlorofluorocarbons deplete Earth's ozone layer.

UC faculty receive many prestigious awards because they are thought leaders in their fields.

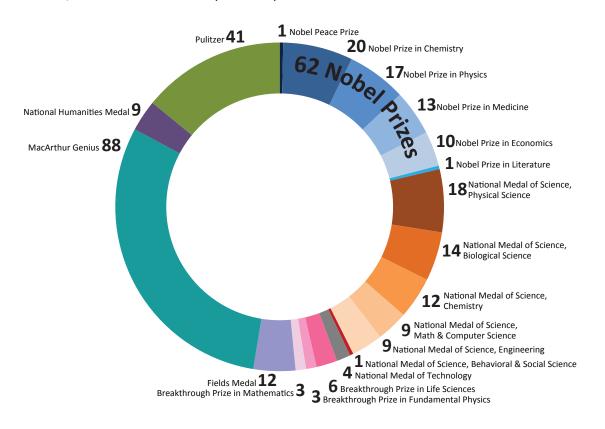
13.1.1 Nobel Prizes by campus affiliation

Sixty-one faculty and researchers affiliated with the University of California have won 62 Nobel Prizes, representing more than five percent of the 923 laureates. UC's first laureate was Harold Urey in 1934, for the discovery of heavy hydrogen. UC's most recent was Shuji Nakamura at UC Santa Barbara, "for the invention of efficient blue lightemitting diodes which has enabled bright and energy-saving white light sources."

A list of UC's laureates can be found at nobel.universityofcalifornia.edu.

	Chemistry	Economics	Literature	Medicine	Physics	Peace
Berkeley/ Berkeley Lab	8	5	1	1	8	
Irvine	2				1	
Livermore Lab					1	
Los Angeles	3	1		1	1	
San Diego	5	3		6	2	1
San Francisco				5		
Santa Barbara	2	1			4	

13.1.2 Prizes, medals and awards won by UC faculty



In addition to the 291 prizes, medals and awards presented in the chart above, many UC faculty are members of prestigious National Academies, providing leadership in service and general welfare to the nation.

National Academy of Sciences	616
National Academy of Engineering	261
National Academy of Medicine	213
National Academy of Inventors	62

Awards and Distinctions 205

The New York Times identified UC campuses as the best in the nation at enrolling, supporting, and graduating large numbers of lower-income students.

13.2.1 New York Times College Access Index

The New York Times' College Access Index ranks institutions with at least a 75 percent five-year graduation rate by the share for freshman entrants that are Pell Grant recipients, the graduation rates of those students and overall net cost for low-income students. It aims to identify institutions with a "commitment to economic diversity," based on the number of lower- and middle-income students a college enrolls and graduates and the price it charges these students.

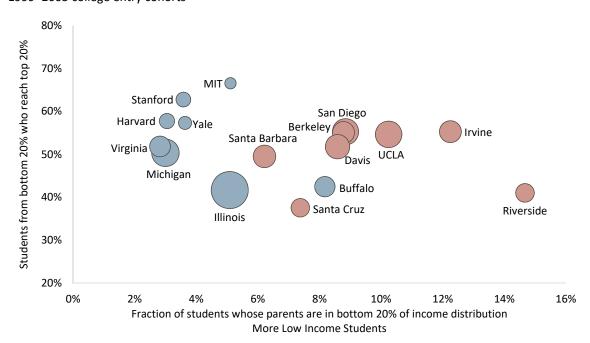
In its 2017 ranking, UC campuses held the top five slots. Six UC campuses were in the top ten. The index was first published in 2014, ranking about 100 colleges, but UC campuses did not meet the criteria for inclusion. In 2015, the criteria were expanded and about 180 colleges were included, with UC campuses attaining six out of the top seven slots. The third publication of the index was in 2017, ranking about 170 colleges.

	2017 Rank	2015 Rank
Irvine	1	1
Santa Barbara	2	3
Davis	3	2
San Diego	4	4
UCLA	5	5
Berkeley	9	7

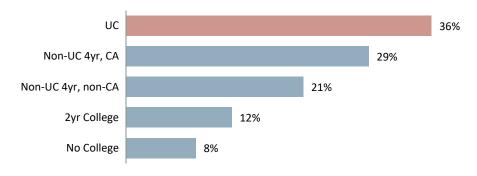
The remaining UC campuses with undergraduates did not meet the index's criteria of at least a 75 percent five-year graduation rate and were thus excluded.

UC campuses are leaders in promoting economic mobility, moving large numbers of students from the bottom to the top of the economic spectrum.

13.3.1 Percent low-income vs upwards social mobility UC campuses and comparison institutions 1999–2005 college entry cohorts



13.3.2 Percentage from the bottom 20 percent of income who move to the top 20 percent UC alumni and peers from the same age group 1999–2005 college entry cohorts



UC's collaboration with the Equality of Opportunity Project and the CLIMB Initiative reveals new insights into UC's role in enabling low-income students to achieve intergenerational economic mobility.

Through matching UC students to their IRS tax records, and linking them to their parents' tax records when they first enrolled at UC, researchers have been able to determine how many UC students achieve economic mobility.

Thirty-six percent of UC's lowest income students move from the bottom 20 to the top 20 percent of the income distribution as adults, which is higher than other 4-year universities in California and the nation.

Awards and Distinctions 207

Of the top ten national public universities in the U.S. News and World Report ranking, six are UC campuses.

The U.S. News and World Report, in its 2018 national university rankings, focused on academic reputation, financial resources, and selectivity in undergraduate admissions. Its assessment on these metrics placed UC campuses among the very best public universities in the country:

Numerical rankings can provide false precision based on very little actual differences among campuses. For example, there is only a three point difference in the overall score for universities ranked 37th and 46th.

- UC Berkeley and UCLA were ranked as the top public institutions
- Five UC campuses were among the top 10 public institutions in the nation
- For public and private institutions combined, six UC campuses ranked among the top 50

13.4.1 U.S. News: America's Top National Public Universities 2017

	Public	National
Berkeley	1	21
UCLA	1	21
Santa Barbara	8	37
Irvine	9	42
San Diego	9	42
Davis	12	46
Santa Cruz	33	81
Riverside	58	124
Merced	87	165

In the Academic Rankings of World Universities, only four public universities in the world appear in the top 20, and three are UC campuses.

The Academic Rankings of World Universities (ARWU) was created by Shanghai Jiao Tong University in China in 2003 to determine the global standing of Chinese research universities. Since 2009, the Shanghai Ranking Consultancy has published these rankings.

The rankings are based entirely on measures of research strength and faculty honors and awards. English-speaking universities, especially those in the United States, tend to dominate the ARWU rankings.

This ranking system emphasizes research outputs, such as total research expenditures. Because research outputs are not normalized by number of faculty, larger institutions tend to rank more highly than smaller ones. Institutions with strong research programs, especially in the sciences, also tend to score higher than those whose major strengths are in the humanities and social sciences.

13.4.2 Shanghai Ranking Consultancy: Academic Rankings of World Universities 2017

Berkeley	5
UCLA	12
San Diego	15
UCSF	21
Santa Barbara	45
Irvine	64
Davis	85
Santa Cruz	98
Riverside	151-200

Awards and Distinctions 209

GLOSSARY

UC Accountability Report

Celebrating 150 years of being boldly Californian.



GLOSSARY

- **AAU** Association of American Universities. The AAU is a highly selective membership organization of preeminent public and private research universities. AAU currently has 60 American and two Canadian member institutions. In this report, the Canadian institutions are excluded from calculations. Of the ten UC campuses, six are AAU members: Berkeley, Davis, Irvine, Los Angeles, San Diego and Santa Barbara.
- **AB 540** AB 540 is an Assembly bill passed in 2001. It allows undocumented high school students who meet certain requirements to pay in-state, instead of nonresident, tuition at California's public higher education institutions.
- **Academic Senate** The Academic Senate represents the faculty in the shared governance of the University of California.
- **ARRA** American Recovery and Reinvestment Act, passed by Congress in 2009, was an economic stimulus package intended to ameliorate the effects of the 2007–09 recession.
- **Auxiliary enterprises** Auxiliary enterprises are campus services that charge fees for goods and services and therefore are self-supporting. Examples include student housing, dining facilities and bookstores.
- **Climate** Climate is a term employed to measure diversity at UC campuses and the degree to which the campuses are welcoming and inclusive of different groups and affiliations.
- Clinical faculty Clinical faculty are instructors in medical and health sciences fields. They include professors in residence, professors of clinical __ (__ being the name of the discipline or specialty), and health science clinical professors. Clinical faculty are not members of the Academic Senate.
- Comparison institutions; comparators UC historically has used eight universities against which to benchmark faculty salaries. The comparison institutions four public and four private are: University of Illinois, University of Michigan, University at Buffalo and University of Virginia (all public); and Harvard, Massachusetts Institute of Technology, Stanford and Yale (all private).
- **FTE** Full time equivalent a unit of measurement of employee or student workload or attendance. Two individuals each engaged in half-time employment constitute a single FTE. In this report, FTE counts are represented with a single decimal to differentiate them from headcounts. (See *headcount*.)
- **General campus** Used to distinguish the non-health science areas of a campus from the health science areas. Berkeley, Davis, Irvine, Los Angeles, Riverside and San Diego include both general campus and health science areas. Merced, Santa Barbara and Santa Cruz are general campus only, and San Francisco is an exclusively health science campus.
- **General funds** General funds include State general funds, which are funds from the State of California, and UC general funds, which are primarily indirect cost recovery and nonresident tuition.
- **Graduation rate** The proportion of students in a cohort who finish their degrees within a specified period. Undergraduate graduation rates are generally measured in four-, five- and six-year increments for entering freshmen, and two-, three- and four-year increments for transfer students.
- **Headcount** Headcount is the actual number of individuals without accounting for full- or part-time status. Two students each attending school half-time constitute a headcount of two. (See *FTE*.)
- **Health sciences instruction** Seven UC campuses offer health sciences instruction. Davis, Irvine, Los Angeles, San Francisco and San Diego have schools of medicine and other health sciences such as pharmacy, nursing and dentistry; Riverside has a school of medicine; Berkeley offers health sciences instruction in optometry and public health.
- **K-12** Kindergarten through 12th-grade instruction.

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- **Ladder-rank** Ladder-rank faculty are faculty who are tenured or have potential to receive tenure, and generally are members of the Academic Senate.
- Master Plan The Master Plan for Higher Education establishes a system of public higher education in California that defines the roles of public institutions with the goal of making higher education available to all Californians. The Master Plan was originally drafted in 1960 and has been updated several times to accommodate changing circumstances.
- **Non-ladder-rank faculty** Non-ladder rank faculty are faculty who are neither tenured nor on track to receive tenure, and generally are not members of the Academic Senate. Non-ladder rank faculty includes lecturers, visitors, adjuncts, instructional assistants and clinical faculty.
- **Nonresident** Nonresident students come from outside California to attend a UC campus. They must pay the full cost of attendance.
- **Pell Grant** The Pell Grant is a federal program that provides need-based grants to low-income individuals for the purposes of obtaining a college degree. A Pell Grant recipient is defined as a student who received a Pell Grant at any point while attending an institution.
- **Postbaccalaureate teaching credential** The postbaccalaureate teaching credential trains individuals to meet state standards for teacher certification.
- **Postdoctoral scholar** Postdoctoral scholars are engaged in further research or training in the fields in which they obtained their doctoral degrees for the purpose of gaining additional expertise and skills. Postdoctoral scholars may hold concurrent titles in other academic or staff categories.
- **SCH**, **student credit hours** Student credit hours are a measure of faculty teaching workload. SCH is defined as the number of student enrollments in a course multiplied by the number of credits available from that course. For example, a 4-credit course with 50 students generates 200 SCH; a 2-credit course of 15 students generates 30 SCH.
- **Shared governance** At the University of California, faculty, operating through the Academic Senate, have a voice in the operation of the University and a measure of responsibility for the manner in which the University operates. This system is known as shared governance.
- **STEM** Science, technology, engineering and mathematics. In this report, includes physical sciences and mathematics, life sciences, engineering, computer science and health sciences.
- **TICAS** The Institute for College Access and Success. TICAS is an independent, nonprofit organization that conducts and supports nonpartisan research, analysis and advocacy with regard to access and affordability of higher education.
- **Transfer students** Transfer students enter UC after completing their freshman- and sophomore-level studies at a California Community College. The Master Plan calls for UC to admit as juniors all qualified California Community College students and specifies that the University maintain a 60:40 ratio of upper-division (juniorand senior-level) to lower-division (freshman- and sophomore-level).
- **UC Extension** UC Extension is a program of courses offered by UC campuses to working professionals to meet their continuing-education needs through both credit and non-credit programs. UC Extension does not award degrees; it offers only certificates and continuing education credit.
- **UCUES** University of California Undergraduate Experience Survey. UCUES is a biennial survey that solicits undergraduate opinions on all aspects of the UC experience. *See Data Glossary entry below for more information.*
- **WSCUC** Western Association of Schools and Colleges Senior College and University Commission. WSCUC is UC's regional accrediting agency. It is recognized by the U.S. Department of Education as the accrediting agency for colleges and universities in the western United States and the Pacific Basin.

Data Sources

Association of American Universities (AAU)

The Association of American Universities (AAU) is an association of 62 leading public and private research universities in the United States and Canada. A list of the institutions can be found in Table 6 of this glossary. Membership in AAU is by invitation and is based on the high quality of programs of academic research and scholarship and undergraduate, graduate and professional education in a number of fields. Throughout this report, the two AAU institutions in Canada are excluded from the "Non-UC AAU Public" group because they do not submit data to the U.S. Department of Education, the source of the AAU data used here. For more information, visit www.aau.edu.

American Association of University Professors (AAUP)

The American Association of University Professors is an organization of professors and other academics in the United States. It conducts an annual survey of faculty compensation, used in this report to compare UC's faculty salaries. More information on the AAUP data set can be found at www.aaup.org/our-work/research/annual-report-economic-status-profession.

Consumer Price Index (CPI)

The CPI is a measure of inflation experienced by consumers, and an important indicator of the condition of the economy. It can be used to adjust other economic data for changes in price level and to convert them into inflation-free dollars. For example, retail sales and income data are "deflated" to assess their "real" movements over time. This report uses the calendar year average of the CPI-W (CA), which is the Consumer Price Index for Urban Wage Earners and Clerical Workers. For more information on the CPI-W (CA), visit http://www.dof.ca.gov/Forecasting/Economics/Indicators/Inflation/

Council for Aid to Education (CAE)

The Council for Aid to Education (CAE) is a national nonprofit organization based in New York City. Initially established in 1952 to advance corporate support of education and to conduct policy research on higher education, CAE today is also focused on improving quality and access in higher education. CAE's Voluntary Support of Education (VSE) survey is the authoritative national source of information on private giving to higher education and private K-12 classrooms, consistently capturing about 85 percent of the total voluntary support to colleges and universities in the United States. CAE has managed the survey as a public service for over 50 years. For more information, visit www.cae.org.

Integrated Postsecondary Education Data System (IPEDS)

IPEDS is a system of interrelated surveys conducted annually by the National Center for Education Statistics (NCES) of the Institute of Education Sciences, U.S. Department of Education. IPEDS gathers information from every college, university, and technical and vocational institution that participates in federal student financial aid programs. IPEDS provides basic data needed to describe — and analyze trends in — postsecondary education in the United States, in terms of the numbers of students enrolled, staff employed, dollars expended and degrees earned. For more information, visit http://nces.ed.gov/ipeds.

National Postsecondary Student Aid Study (NPSAS)

The National Postsecondary Student Aid Study is the most comprehensive, nationally representative survey of student financing of postsecondary education in the United States. Since 1987, NPSAS has been conducted every three to four years by the National Center for Education Statistics (NCES) of the Institute of Education Sciences, U.S. Department of Education. Undergraduate and graduate students enrolled at all types of postsecondary institutions are represented. For more information, visit http://nces.ed.gov/surveys/npsas.

National Student Clearinghouse (NSC)

The National Student Clearinghouse reports on all institutions that a student has attended or received a degree/credential at. Estimates are conservative due to imperfect matching of students. For more information, visit http://www.studentclearinghouse.org/.

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Survey of Earned Doctorates (SED)

The Survey of Earned Doctorates (SED) is a federal survey conducted by the National Opinion Research Center (NORC) for the National Science Foundation and five other federal agencies (National Institutes of Health, U.S. Department of Education, National Endowment for the Humanities, U.S. Department of Agriculture and the National Aeronautics and Space Administration). The SED gathers information annually from new U.S. research doctorate graduates about their educational histories, funding sources and postdoctoral plans.

UC Audited Financial Statements

UC, like all public entities, is audited by an external auditing firm. UC's external audit is performed by Price Waterhouse Coopers, an external independent certified public accounting firm reporting to the Regents. UC's audited financial statements can be accessed at www.universityofcalifornia.edu/reportingtransparency.

UC Budget for Current Operations

UC budget documents can be found at www.ucop.edu/operating-budget/budgets-and-reports/index.html.

UC Corporate Financial System (CFS)

The Corporate Financial System (CFS) contains financial data for all UC campuses. The primary source of data in the CFS is a monthly transmittal file from each of the ten UC campuses. Each campus file contains data reflecting current financial, budgetary and encumbrance balances and current month financial activity in the campus's general ledger. More information can be found at http://data.ucop.edu/subjectarea/financial-data-warehouse.html.

UC Corporate Personnel System (CPS)

The Corporate Personnel System (CPS) is a reporting system with demographic, personnel and pay activity data on employees. More information can be found at http://data.ucop.edu/subject-area/cps-assets/personnel-data-warehouse.html.

UC Data Warehouse

The Data Warehouse is a set of databases and processes that provides information to meet the management, analytical and operational needs of the UC Office of the President. The databases are created and/or updated with data received from the campuses and other sources. More information can be found at http://data.ucop.edu/subject-area/index.html.

UC Faculty Instructional Activities dataset ("TIE" data collection)

UC conducts annual data collections from campuses on faculty instructional activities. This data collection was originally undertaken in response to a state reporting requirement which was not renewed. The 2007 annual report to the Legislature was the last mandated report; it can be found at www.ucop.edu/academic-planning-programs-coordination/_files/documents/fia/fia_annlrpt2007.pdf. Since that time, UC has continued to collect these data for management and accountability purposes.

UC Graduate Student Support Survey

The UCOP Student Affairs department conducts periodic surveys of the competitiveness of UC graduate student support. Reports on this survey can be found at www.ucop.edu/student-affairs/data-and-reporting/graduate-student-support/index.html.

UC Information Center

The UC Information Center is a website providing a central source of information about the University that allows the public to explore the UC story through data. The site can be accessed at https://www.universityofcalifornia.edu/infocenter.

UC Medical Centers Audited Financial Statements

The UC medical centers, like all public entities, are audited by an external auditing firm. The medical center audited financial statements are published separately from UC's external audit. UC's audited financial statements can be accessed at www.universityofcalifornia.edu/reportingtransparency.

UC Medical Schools

Six UC campuses include medical schools: Davis, Irvine, Los Angeles, Riverside, San Diego and San Francisco. More information on these schools can be found at http://health.universityofcalifornia.edu/medical-centers/.

UC Student Financial Support Annual Reports

These reports, produced by the UCOP Student Affairs department, can be found along with other financial aid information at www.ucop.edu/student-affairs/data-and-reporting/index.html.

University of California Undergraduate Experience Survey (UCUES)

The University of California Undergraduate Experience Survey (UCUES) biennially solicits student opinions on all aspects of the UC experience. UCUES content is broad and covers most aspects of students' academic and co-curricular experiences. Students evaluate such things as instruction, advising and student services. The systemwide response rate for UCUES was 38 percent in 2006, 39 percent in 2008, 42 percent in 2010, 36 percent in 2012 and 37 percent in 2014. More information can be found at http://studentsurvey.universityofcalifornia.edu/.

Table 1. Broad Discipline Classification

Broad Dissipling	CIP Categories Included			
Broad Discipline	When Using UC Corporate Data	When Using IPEDS Degree Data		
	Visual/Performing Arts	Visual/Performing Arts		
	English Literature	English Literature		
Auto C. H	Foreign Languages	Foreign Languages		
Arts & Humanities	Philosophy	Philosophy		
	History	History		
	Liberal Arts	Liberal Arts		
	Bio/Life Sciences	Bio/Life Sciences		
Life Sciences	Conservation Science	Conservation Science		
	Agricultural Science (select 01 CIPs)	Agricultural Science (select 01 CIPs)		
Dhariad Calanaa Taskaalaan	Math	Math		
Physical Sciences, Technology,	Physical Science	Physical Science		
Engineering and Mathematics	Engineering	Engineering		
(PSTEM)	Computer Science	Computer Science		
	Area Studies	Area Studies		
	Psychology	Psychology		
Cartal Catanaga	Social Sciences (except UCSD Pacific	Social Sciences		
Social Sciences	Affairs, UCI Criminology)	Agricultural Business/Production (select		
	Agricultural Business/Production (select	01 CIPs)		
	01 CIPs)			
	Interdisciplinary	Interdisciplinary		
	Other/Unknown	Other/Unknown		
	Business	Business		
	Architecture	Architecture		
	Education	Education		
	Public Admin.	Public Admin.		
	Law (non-J.D.)	Law (non-J.D.)		
Other Disciplines	Communications	Communications		
	Criminology	Criminology		
	Health Sciences	Health Sciences		
	Library Science	Library Science		
	Social Sciences (UCSD Pacific Affairs and	Theology		
	UCI Criminology)	Parks & Recreation		
		Military Science		
		Homeland Security		

Mapping Developed 1/7/2011, UC Institutional Research and Academic Personnel

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Table 2. Faculty Discipline Groupings

Discipline Grouping - Accountability	UAS Discipline	Discipline Grouping - Accountability	UAS Discipline
Arts & Humanities	Fine & Applied Arts	Medicine	Medicine
Arts & Humanities	Foreign Languages	Other General Campus Professional	Architecture &
Arts & Humanities	Letters	Other General Campus Professional	Environmental Design
Arts & Humanities	Theology	Other General Campus Professional	Criminology
Business/Management	Business & Management	Other General Campus Professional	Social Welfare
Education	Education	Other General Campus Professional	Communications
Funcional district Colons	Computer & Information	Other General Campus Professional	Library Science
Engineering & Computer Science	Sciences	Other Health Science	Veterinary Medicine
Engineering & Computer Science	Engineering	Other Health Science	Dentistry
Interdisciplinary/Other	Interdisciplinary Studies	Other Health Science	Nursing
Interdisciplinary/Other	Physical Education	Other Health Science	Pharmacy
Interdisciplinary/Other	Military Sciences	Other Health Science	Public Health
Interdisciplinary/Other	Home Economics	Other Health Science	Optometry
Law	Law	Other Health Science	Other Health Professions
Life Sciences	Biological Sciences	Physical Science	Physical Sciences
Life Caianasa	Agriculture & Natural	Social Science & Psychology	Psychology
Life Sciences	Resources	Social Science & Psychology	Social Sciences
Math	Mathematics	Social Science & Psychology	Area Studies

Table 3. Faculty Categories, Faculty Series and Class Title Outline Codes

Category	Faculty Series Included	Class Title Outline (CTO) Codes ¹
Faculty – Ladder-rank and	 Professorial – Tenure, Non-Tenure and Recall² 	• 010, 011, 012
Equivalent (LRE)	 Clinical Prof. of Dentistry – 50% or More 	• 030, 031
	 Supervisor of Physical Education – Tenure, Non-Tenure and Recall 	• 040, 041, 042
	 Acting Professor – Senate and Non-Senate 	 114, 124
	 Lecturer with Security of Employment and with Potential Security of Employment – 100%, and Recall³ 	• 210, 211, 212
	 Astronomer – Tenure, Non-Tenure and Recall 	 520, 521, 522
	 Agronomist – Tenure, Non-Tenure and Recall 	• 530, 531, 532
Faculty – Clinical/In-	Professor in Residence	• 311
Residence/Adjunct	 Professor of Clinical (e.g., Medicine) 	• 317
	 Health Sciences Clinical Professor 	• 341
	Adjunct Professor	• 335
	 Visiting Professor 	• 323
Faculty – Lecturers	• Lecturer	• 225
	 Lecturer with Potential Security of Employment – Part 	• 221
	Time	• 357
	 Instructional Assistant (non-student) 	

¹ The CTO code identifies a group of titles with similar duties and/or conditions of appointment.

Note: Faculty members with tenure are conferred the Emeritus title upon retirement. If they return to University service in a paid position, they are appointed in Recall titles. Emeritus faculty without Recall appointments are not included in faculty counts in the Accountability Report.

² "Recall" denotes retired faculty who have been recalled to active service to perform teaching, research and/or public service duties. They are included in reporting on headcounts and FTE of incumbent faculty, but they are excluded from reporting on faculty new hires and separations.

³ Lecturers in these titles are also called "Senate Lecturers". They have or are eligible for the equivalent of tenure, and they are represented in the Academic Senate.

Table 5. AAU Member Universities, as of June 2017 (United States only)

UC	Non-UC Public	Private
Berkeley	Georgia Institute of Technology — Main Campus	Boston University
Davis	Indiana University — Bloomington	Brandeis University
Irvine	Iowa State University	Brown University
Los Angeles	Michigan State University	California Institute of Technology
San Diego	Ohio State University — Main Campus	Carnegie Mellon University
Santa Barbara	Pennsylvania State University — Main Campus	Case Western Reserve University
	Purdue University — Main Campus	Columbia University in the City of New York
	Rutgers University — New Brunswick	Cornell University
	Stony Brook University	Duke University
	Texas A & M University	Emory University
	The University of Texas at Austin	Harvard University
	University at Buffalo	Johns Hopkins University
	University of Arizona	Massachusetts Institute of Technology
	University of Colorado at Boulder	New York University
	University of Florida	Northwestern University
	University of Illinois at Urbana — Champaign	Princeton University
	University of Iowa	Rice University
	University of Kansas	Stanford University
	University of Maryland — College Park	Tulane University of Louisiana
	University of Michigan — Ann Arbor	University of Chicago
	University of Minnesota — Twin Cities	University of Pennsylvania
	University of Missouri — Columbia	University of Rochester
	University of North Carolina at Chapel Hill	University of Southern California
	University of Oregon	Vanderbilt University
	University of Pittsburgh — Pittsburgh Campus	Washington University in St Louis
	University of Virginia — Main Campus	Yale University
	University of Washington — Seattle Campus	•
	University of Wisconsin — Madison	

Table 6. Inflation Adjustments

Unless otherwise noted, all inflation adjustments are to 2015 calendar year dollars using the consumer price index for urban wage earners and clerical workers, California (CPI-W) published by the California Department of Finance at http://www.dof.ca.gov/Forecasting/Economics/Indicators/Inflation/.

	Fiscal/	CCPI-W,		Fiscal/	CCPI-W,		Fiscal/	CCPI-W,
Calendar	Academic	CA (1982-	Calendar	Academic	CA (1982-	Calendar	Academic	CA (1982-
Year	Year	84=100)	Year	Year	84=100)	Year	Year	84=100)
1993	1993–94	144.7	2001	2001–02	174.7	2009	2009–10	216.3
1994	1994–95	146.6	2002	2002-03	179.0	2010	2010-11	219.7
1995	1995–96	149.1	2003	2003-04	183.8	2011	2011–12	226.4
1996	1996–97	152.0	2004	2004-05	188.9	2012	2012-13	231.6
1997	1997–98	155.0	2005	2005-06	195.9	2013	2013-14	234.9
1998	1998–99	157.6	2006	2006-07	203.3	2014	2014–15	239.0
1999	1999-00	162.2	2007	2007-08	209.9	2015	2015-16	241.6
2000	2000-01	168.1	2008	2008-09	217.6	2016	2016–17	246.2

Student Level Classification Summary:

UCOP classifies graduate students into five enrollment levels that rely on campus provided information on program type and student enrollment level. Within UCOP's central student data system campuses indicate whether each of their programs of study is academic or professional at the master's and doctoral levels. These indications, combined with the actual enrollment level (masters or doctoral) of the student, serve as the determination of whether a student is enrolled in an <u>academic doctoral</u>, <u>professional doctoral</u>, <u>academic master's</u>, or <u>professional master's</u> program. Two exceptions to this rule include (1) all self-supporting students are treated as professional (master's or doctoral based on level) regardless of how the campus may have classified the program, and (2) all students enrolled in programs associated with professional licensure (law, medicine, and other health professions) are treated as <u>professional practice</u>.

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