UNIVERSITY
OF
CALIFORNIA

Budget for Current Operations

Summary & Detail

2018-19

AS PRESENTED TO THE REGENTS

AS PRESENTED TO THE REGENTS

Foreword

The University of California was founded in 1868 as a public, State-supported land grant institution. The State Constitution establishes UC as a public trust to be administered under the authority of an independent governing board, the Regents of the University of California. The University maintains 10 campuses: Berkeley, Davis, Irvine, Los Angeles, Merced, Riverside, San Diego, San Francisco, Santa Barbara, and Santa Cruz. Nine campuses offer undergraduate and graduate education; San Francisco is devoted primarily to health sciences graduate and professional instruction. The University operates teaching hospitals and clinics on the Los Angeles and San Francisco campuses, and in Sacramento, San Diego, and Orange counties. The University includes approximately 150 institutes, centers, bureaus, and research laboratories throughout the state. UC's Agricultural Field Stations, Cooperative Extension offices, and the Natural Reserve System benefit all Californians. The University also oversees the Lawrence Berkeley National Laboratory and is a partner in limited liability corporations that oversee two other Department of Energy laboratories.

ORGANIZATION OF THE *2018-19 BUDGET FOR CURRENT OPERATIONS — BUDGET DETAIL*

The *Summary of the Budget Request* provides a brief overview of the major policy issues, revenue needs, and expenditure plans and objectives of the University for 2018-19. It provides explanatory detail for all aspects of the University's operating budget plan for core funds.

The first chapter, *UC's Role in the State of California*, provides an overview of the University's contributions to the state in both the education and economic sectors.

The *Sources of University Funds* chapter presents a digest of the major fund sources that constitute the University's total operating revenue.

The *Cross-Cutting Issues* chapter provides budget detail for issues that cross functional areas.

Subsequent chapters discuss specific program areas in more detail and provide fuller justification of requests for funding increases. These include chapters covering the core mission activities of instruction, research, and public service, as well as all support activities and student financial aid.

Salary increases and rising costs of employee and retiree benefits are major drivers of the University's budget plan. These issues are discussed in the *Compensation, Employee and Retirement Benefits, and Non-Salary Cost Increases* chapter.

The *Student Tuition and Fees* chapter provides information about the University's tuition and fee policy and practices.

The *Historical Perspective* chapter provides a detailed account of the history of State funding for the University over the last several decades.

The Appendix includes various tables providing current and historical budget, enrollment, and tuition information.

A separate volume, the *2017-27 Capital Financial Plan,* provides information about the University's capital facilities needs.

Table of Contents

List of Displays

INTRODUCTION

Over 150 years ago, the first Constitution of the State of California called upon the state legislature to "encourage, by all suitable means, the promotion of intellectual, scientific, moral, and agricultural improvement" and to support "said University, with such branches as the public convenience may demand, for the promotion of literature, the arts and sciences."

The evolution of the University of California from that initial vision in 1849 to its current form is remarkable. Today's UC is an unparalleled engine of socioeconomic mobility for generations of California students, a world-class research institution that expands the boundaries of human knowledge and produces transformational technologies, a leader in the health care sector, and more. And Californians rightly expect the University to be accessible to all eligible students, to make ground-breaking contributions in both basic and applied research, to provide advanced and comprehensive health care, and to educate the highly skilled workforce essential to the progress of our state and nation in the 21st century. Throughout its history, the University's ability to fulfill those expectations is due in large part to the support of the people of California.

More Californians are pursuing their college goals at UC than ever before. In 2017-18, the University will enroll an estimated 185,100 California resident undergraduates – an all-time high, and more than 10,000 additional students than just three years ago. The University has also increased graduate enrollment over time, in recognition of the critical roles that graduate students play in instructing and mentoring undergraduates, conducting groundbreaking research, and contributing to the economic and entrepreneurial foundation for the many new industries that keep California vibrant.

The *2018-19 Budget for Current Operations* presents a balanced funding strategy to address four immediate goals that are core to the University's mission of instruction, research, and public service:

- further expanding access for California resident undergraduates and supporting the University's graduate enterprise,
- enhancing success by enabling campuses to provide additional financial aid, hire faculty and advisors, replace outdated instructional equipment, improve student mental health services, and meet other student needs,
- making progress on the University's most pressing capital needs, and
- addressing mandatory and selected high-priority costs that are essential to maintaining a large research university.

In addition to achieving these immediate goals, the University looks forward to working with the State to develop a shared vision of the University's future – one that ensures that current and future generations of students have the same opportunities for educational advancement, personal and intellectual growth, and socioeconomic mobility that have characterized a UC education for previous generations of Californians.

Janet Napolitano
President

Nathan Brostrom
Chief Financial Officer and Executive Vice President

January 2018

KEY ELEMENTS OF THE 2018-19 BUDGET PLAN

Enrollment Growth. The plan reflects enrollment growth of 2,000 California resident undergraduates in 2018-19 compared to 2017-18; funding for 1,500 students would come from redirected current resources, with the remaining 500 to be funded by additional State support. The plan also requests funding to support 500 graduate students in 2018-19. Graduate students educate and mentor undergraduate students, are critical to attracting the most talented faculty members, and make important contributions to UC's research mission and, upon graduation, to the economy and skill base of California.

Investing in Student Success and Academic Excellence. The plan includes funding of $50 million to support campus efforts to enhance instruction and improve student success, including further improving the student-faculty ratio, replacing outdated instructional technology, improving the financial support provided to graduate students, and rebuilding other areas where the impact of past budget cuts on the quality of the academic program has been most pronounced. These investments will directly benefit students and are essential to meeting State goals for improved graduation rates and other performance outcome measures.

Student Financial Aid. Under the plan, UC student financial aid awards would increase by $47.1 million. Together with the State's Cal Grant and Middle Class Scholarship programs, these funds would be enough to fully cover the proposed Tuition adjustment (described below) for two out of every three California resident undergraduates and would provide additional aid to help about 100,000 UC undergraduates cover a portion of their other costs (rent, food, books, supplies, etc.) as well.

Mandatory Costs. The University faces mandatory cost increases of $136.4 million, including expenses such as employer contributions to the University's retirement system, employee and retiree health benefit programs, compensation increases already approved in the collective bargaining process, the faculty merit program essential to retaining high performing faculty, and inflationary costs for non-salary items (such as instructional equipment and purchased utilities).

Student Mental Health and Other High-Priority Costs. The plan includes $137.4 million for high-priority costs, including expanded access to student mental health services, investment in deferred maintenance and seismic safety projects, compensation for faculty and non-represented staff, and support for a capital program to meet needs that, in past years, would have been addressed through General Obligation or lease revenue bonds.

Increase in State Support. The plan assumes a 3% ($103.1 million) base budget increase in State General Funds, consistent with the expectation set by the Governor in his 2017 May Revise proposal but approximately $34 million less than the increase of 4% included in the multi-year funding plan established between the Governor and the University.

Nonresident Supplemental Tuition. The plan assumes a $978 (3.5%) adjustment to undergraduate Nonresident Supplemental Tuition (NRST) and enrollment growth of 1,000 nonresident undergraduates in 2018-19. This will yield an estimated $64 million in NRST, or roughly $54 million above the cost of educating the additional students after taking into account the other fees that they pay.

Nonresident Undergraduate Financial Aid. The University will continue to phase out financial aid provided through the University Student Aid Program (USAP) to nonresident undergraduates, saving an estimated $14 million in 2018-19.

Tuition. Under the plan, the Tuition surcharge of $60 attributable to the payment of damages from the 2012 Luquetta lawsuit would be eliminated and Tuition would be adjusted by $348, resulting in a net adjustment of $288 (2.5%). The University estimates that two out of three California resident undergraduates would have the adjustment covered through additional grants and scholarships. The adjustment would also generate additional financial aid for graduate students.

Student Services Fee Increase. The budget plan assumes a $54 (4.8%) adjustment to the Student Services Fee. Half of the revenue generated, net of financial aid, will be used to increase student mental health services. Combined with the proposed net Tuition adjustment, this would result in a total adjustment of $342 (2.7%) in mandatory systemwide charges.

2018-19 Budget Plan for Core Funds (Dollars in Millions)

2017-18 OPERATING BUDGET

State General Funds	$3,543.0
Less General Obligation Bond Debt Service	($174.7)
Less One-Time Contribution to the University of California Retirement System (UCRS)	($169.0)
State General Funds (excluding GO Bond Debt Service and One-Time UCRS Support)	$3,199.4
Total Core Funds (State General Funds, Student Tuition and Fee Revenue, and UC General Funds)	$8,719.8

PROPOSED CHANGES IN REVENUES

Cost Savings/Alternative Revenues		
Asset Management	$	30.0
Systemwide Contracts	$	10.0
Philanthropy	$	10.0
Reallocation from Nonresident Aid	$	14.0
Redirected Funding for Enrollment (1,500)	$	15.0
Subtotal	$	79.0
State General Funds		
CA Undergrad Enrollment Growth (500)	$	5.0
Graduate Enrollment Growth (500)	$	5.0
3% Base Budget Increase	$	103.1
Subtotal	$	113.1
Fees		
Student Services Fee Adjustment ($54)	$	9.4
Tuition Adjustment ($288 net surcharge)	$	50.3
Enrollment Growth - Tuition & SSF	$	29.8
Revenue for Financial Aid	$	47.1
Subtotal	$	136.6
UC General Funds		
Nonresident Tuition Adj. (3.5% / $978)	$	34.8
Nonresident Enrollment Growth	$	29.4
Subtotal	$	64.3
One-Time Resources		
Deferred Maintenance (to be requested)	$	35.0
TOTAL INCREASE IN REVENUE	**$**	**428.0**

PROPOSED CHANGES IN EXPENDITURES

Enrollment Growth Marginal Cost	$	66.2
Mandatory Costs		
Retirement Contributions	$	17.1
Employee Health Benefits	$	18.9
Annuitant Health Benefits	$	7.7
Contractually Committed Compensation	$	28.3
Faculty Merit Program	$	32.0
Non-Salary Price Increases	$	32.3
Subtotal	$	136.4
Student Success & Academic Excellence	$	50.0
Student Mental Health Resources	$	4.7
High-Priority Costs		
Compensation	$	82.7
Deferred Maintenance	$	35.0
High-Priority Capital Needs	$	15.0
Subtotal	$	132.7
Financial Aid		
Return-to-aid	$	47.1
Subtotal	$	47.1
Other		
Reduction in Luquetta costs in 2018-19	$	(9.0)
TOTAL INCREASE IN EXPENDITURES	**$**	**428.0**

Figures may not sum to totals due to rounding.

ACCESS, INNOVATION, AND ACCOUNTABILITY AT THE UNIVERSITY OF CALIFORNIA

The University of California today is similar, in many important ways, to the University as it existed at the start of this century.

- The University continues to be guided by the same three-part mission of instruction, research, and public service for the betterment of California, the nation, and society as a whole.
- The University has remained steadfast in honoring its commitment, under the California Master Plan for Higher Education, to find a place within the system for all academically eligible California students who wish to attend.
- The University has maintained an unparalleled record of offering a world-class education to a socioeconomically diverse student body.
- UC faculty and researchers continue to develop new insights across a broad spectrum of academic disciplines.
- The University's teaching hospitals continue to rank among the best medical centers in the country, serving almost five million people every year.

In other ways, however, the University today is quite different. For example:

- **UC serves a much larger population.** Today, the University serves many more people than ever before. Enrollment of students in state-supported programs grew from 171,245 in 2000-01 to an estimated 272,592 in 2017-18 – an increase of over 101,000 students, or 59%. Similarly, UC medical centers serve many more patients than in the past. The total number of patient days and the number of outpatient visits at UC medical centers both increased by over 30% during a similar period.
- **UC students are more broadly representative of the state population.** Compared to 2000-01, UC now serves an undergraduate student body that is more representative of the state as a whole – both in terms of family income and ethnic diversity. *The New York Times,* for example, has described the University as an "upward-mobility machine" due to its extraordinary success compared to other major research universities in enrolling and graduating students from across the socioeconomic spectrum.
- **UC is accomplishing more with less.** Available funding from the University's core fund sources – State General Funds, Tuition and fees, and UC General Funds – declined by 31.2% on a per-student basis since 2000-01. This is illustrated in Display 1, which shows total available core funds per student in 2000-01 compared to 2016-17, adjusted for inflation. While the amount of gross revenue from these sources increased over time, the net available resources per student actually declined by $11,068 per student due to several factors. First, UC expenditures on financial aid increased from $337 million to $966 million in constant dollars between 2007-08 and 2016-17. This investment shielded many UC students from the impact of Tuition increases that occurred in the late 2000s and provided additional aid to help students cover costs such as housing, food, and books. But it also resulted in less revenue available to meet other critical parts of the University's operating budget such as faculty hiring, academic advising, and addressing an aging infrastructure.

  In addition, a significant portion of the University's State General Fund appropriation is dedicated to debt service for outstanding General Obligation and former State lease revenue bonds. This amount grew substantially in 2013-14 when $200.4 million was added to the University's base budget for debt service on outstanding General Obligation bonds that had previously been paid directly by the State outside of the University's annual State General Fund appropriation. Although this increased the University's General Fund appropriation, it also shifted the responsibility to repay those bonds to the University's operating budget.

Display 1: Change in Available Resources from State General Funds and Student Tuition/Fees

	2016-17	2000-01	
		Adj. for Inflation	Not Adj. for Inflation
State General Funds - Permanent ($M)	$3,306	$5,000	$3,192
Tuition/Student Services Fee	$3,151	$940	$600
Professional Degree Fees	$315	$68	$44
UC General Funds	$1,418	$581	$371
	$8,190	$6,590	$4,206
Resources Unavailable for Current Operations ($M)			
Financial Aid	($966)	($337)	($215)
Lease revenue / GO Bond payments	($344)	($168)	($107)
UCRP Contributions	($424)		
	($1,735)	($505)	($323)
Available Resources ($M)	$6,455	$6,084	$3,883
Number of Students Enrolled (FTE)	263,957	171,270	171,270
Available Resources per Student ($)	**$24,456**	**$35,524**	**$22,674**
$ Change since 2000-01	***($11,068)***		
% Change	***-31.2%***		

After taking into account inflation and increased expenditures on financial aid, debt service, and contributions to the University of California Retirement Plan (UCRP), UC has much less available funding from core funds per student now than in 2000-01. Inflation is based on changes in the Higher Education Price Index (HEPI).

Employer contributions to the University of California Retirement Plan (UCRP) also increased during this period. UC restarted employer contributions to UCRP in April 2010. In order to secure the financial viability of the plan, the rate of employer contributions rose quickly over a 6-year period until it reached 14% of compensation in 2014-15. This put an enormous strain on campus budgets, particularly because the restart of contributions occurred at the same time as dramatic cuts were made to the University's State appropriation due to the Great Recession.

Lastly, UC served over 90,000 more students in its State-supported programs in 2016-17 than it did in 2000-01 – an increase of 54%. This increase far outpaced growth in total available resources from core funds.

- **UC is reforming its academic and administrative practices.** UC campuses as well as the Office of the President have embarked on wide-ranging reforms to both academic and administrative practices that have the potential, over time, to reduce the University's cost structure, improve the allocation of resources across functions, and enhance the University's ability to serve students. Certain changes were made possible through technological enhancements; for example, the University's use of the Internet to deliver high-quality hybrid instruction and fully online courses would not have been possible even a decade ago. Some reforms emerged as responses to scarce resources, while others were made possible through enhanced State investment in specific areas. Several reforms were adopted in response to stakeholders' interest in greater transparency and accountability.

All of these changes reflect major steps that the University has taken in recent years – and continues to take today – to enhance access, innovation, and accountability. Several are described in greater detail below.

A Commitment to Access

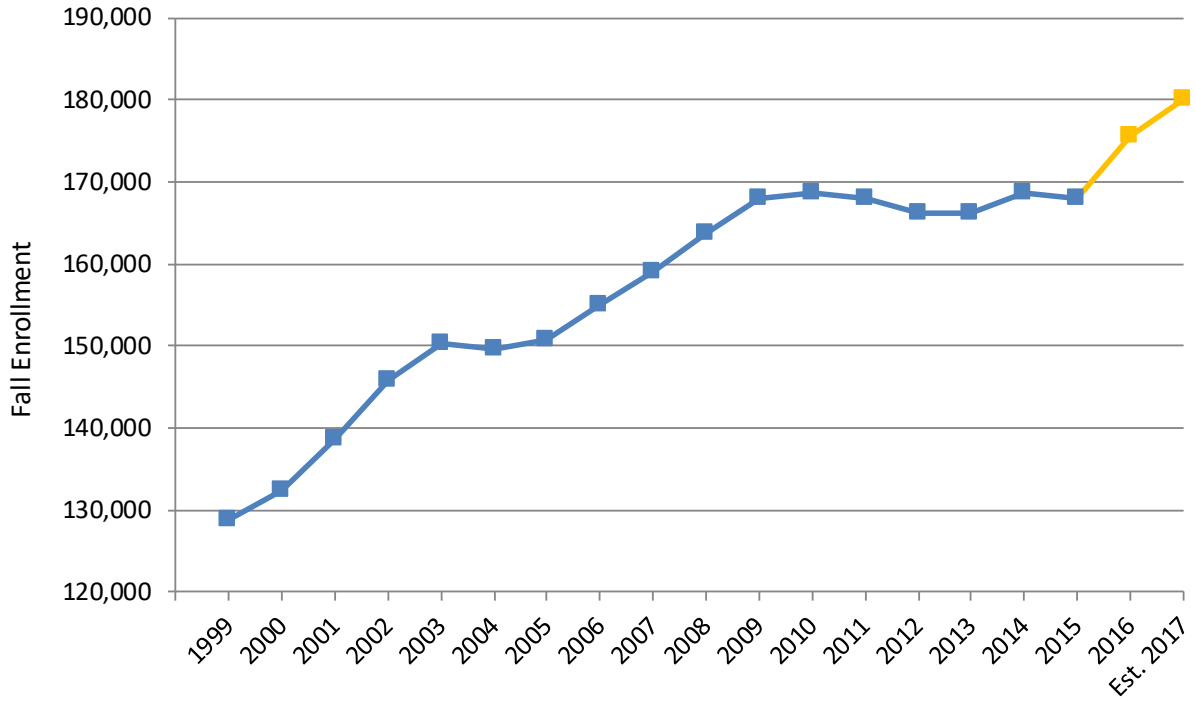
The University, with the support of the State, has achieved an extraordinary level of enrollment growth in recent years. The growth in total enrollment of California resident undergraduates between fall 2015 and fall 2016, for example, was the largest one-year increase since the end of World War II. This expanded access has benefited both California high school graduates and California Community College students, who applied to – and enrolled at – the University in record high numbers. Among all domestic undergraduate students, the rate of enrollment growth was highest among Chicano(a)/Latino(a) students (9.7%) and African American students (8.9%).

As shown in Display 2, California resident undergraduate enrollment continued to grow in 2017-18. Among California students admitted as freshmen in fall 2017, a record high of 43.0% were first-generation college students, and 39.8% were from lower-income families (those with earnings at or below $47,200).

To accommodate this increased enrollment, the University must also expand access to safe and affordable student housing. The University launched a student housing initiative in January 2016 with the goals of ensuring that each of UC's campuses has sufficient housing for its growing student population and of keeping housing as affordable as possible. As part of the initiative, a team led by UC senior leaders visited all ten campuses to better understand their specific housing goals and engaged undergraduate and graduate student leaders to obtain their advice on housing issues. Most campuses also presented detailed housing plans to the Regents that provided information about their unique campus environment and local factors affecting housing availability and costs for students.

Recognizing that a number of student housing projects across the system would leverage a Public-Private Partnership (P3) delivery model, the Office of the President led an effort to identify housing developers through a Request for Information

Display 2: Growth in California Undergraduate Student Enrollment, Fall Headcount, 1999-2017



Growth in California resident undergraduate enrollment between Fall 2015 and Fall 2016 represents the single largest one-year increase in California resident Fall enrollment in the past 70 years. Enrollment continued to grow rapidly in Fall 2017.

process in order to eliminate the redundancy of a campus-by campus solicitation process, expedite the delivery of housing, and heighten competition through the exclusive use of the identified P3 developers to achieve higher value projects that would maximize affordability for students. Eight developers were ultimately selected to bid on future student housing project Request for Proposals across the UC system. Approximately 3,600 beds have come online since January 2016 and the University is on track to meet its goal of 14,000 additional affordable beds by fall 2020.

Results-Driven Innovation

In recent years, the University has undertaken a broad slate of efforts to identify and implement innovative strategies that, over time, have the potential to enhance student success, expand the University's capacity to serve students, improve student and faculty diversity, increase the positive impact of the University on the California economy, and reduce elements of the University's cost structure. Several are described below.

The Long-term Funding Framework between the Governor and the University. In May 2015, the University and the Governor established a budget framework that provided much appreciated financial stability for the University's budget and committed the University to certain administrative and programmatic reforms. Every reform specified in the framework has either been completed or is well underway.

- **New pension options.** In March 2016, the Board of Regents approved new pension options for employees hired on or after July 1, 2016 that incorporate a pensionable salary cap consistent with the State's Public Employee Pension Reform Act (PEPRA) and allow new hires to choose between a defined benefit and a defined contribution retirement plan. Over time, the plan is expected to reduce the University's overall retirement expenses compared to what they would have other been had these reforms not been adopted.
- **Expand transfer pathways.** Since spring 2015, UC faculty developed pathways for the 21 most popular majors for transfer applicants across the system. Each pathway provides a single set of courses that California Community College (CCC) students can take to prepare for the major on all campuses that offer it. Having clear, simple pathways will make it easier for students to transfer to UC and may also reduce their time to graduation.
- **Increase the proportion of California undergraduates who enter as transfer students.** UC committed to increasing the proportion of CCC transfer students so that one-third of all incoming California resident students will enter as transfer students, systemwide and at every campus except Merced, subject to the presence of a sufficiently qualified transfer applicant pool. Preliminary results show that the University met this goal at the systemwide level and at five campuses in 2017-18: Berkeley, Davis, Los Angeles, San Diego, and Santa Barbara. The Irvine campus will achieve this goal in 2018-19, and the Riverside and Santa Cruz campuses have developed plans to make all possible efforts to achieve this goal as well.
- **Examine the State's course identification numbering system**. Under the framework, the President agreed to ask the Academic Senate to examine adoption of the State's Common Identification Numbering (C-ID) system to identify similar courses across the University's undergraduate campuses and transferable courses at the CCCs. The potential use of C-ID is now being considered by the Senate, which is responsible for the final decision.
- **Streamline upper-division major requirements.** Faculty at every undergraduate UC campus have conducted a thorough review of the top 75% of its undergraduate majors with the goal of reducing required upper-division units to the equivalent of a full year of academic work where possible. Faculty recommended changes to 211 majors, all of which were approved by the campus. Changes to 206 of these majors have also been approved by the campus Academic Senates with the remaining five still pending Senate review.
- **Identify and promote three-year degree pathways.** Consistent with the framework, faculty at each undergraduate

UC campus identified three-year pathways for at least 10 of the campus's top 15 undergraduate majors (or, at Merced, three of the top five majors). All three-year pathways are now listed and described on campus websites and campuses have taken steps to promote them.

- **Pilot alternative pricing models for summer session.** Summer enrollment can be an effective strategy for reducing students' time to degree and lowering the number of impacted courses during the academic year. To help identify ways to increase summer session enrollment, the University piloted alternative summer session pricing models at three campuses. The results of those pilots have been shared with other campuses for their consideration when developing their own summer session enrollment strategies.
- **Address bottleneck courses with online instruction.** Online courses have the potential to address student demand for bottleneck courses, which can help students graduate more quickly and reduce the need for additional in-classroom course sections. As part of the framework, the University agreed to report on its own efforts to prioritize funding for online instruction to address bottleneck courses. The report was published in November 2015.
- **Reexamine use of alternative credits.** As part of the framework, the President committed to asking the Academic Senate to reexamine its policies regarding the use of Advanced Placement (AP) and College-Level Examination Program (CLEP) tests. Following that request, the appropriate Senate committees have been investigating current policies and considering whether any changes in policy or practice are appropriate.
- **Support effective academic advising.** Drawing on resources such as professional organizations, research, and campus best practices, the University published a comprehensive guide to advising practices that support the timely graduation of students. The guide has been distributed to Chancellors and Provosts and provides effective, actionable suggestions to help students succeed.
- **Identify at-risk students through data analytics.** Predictive analytics and other data analysis techniques can enable campuses to identify students at risk of academic difficulty, which allows campuses to proactively provide students with additional support to close achievement gaps and avoid setbacks later. As part of the framework, the University hosted a systemwide Summit on Data Analytics for Institutional and Student Success to foster the innovative use of data to support student performance and shared information about campus practices.
- **Explore activity-based costing.** Activity-based costing (ABC) is a method for estimating the cost of providing a product or service based on a detailed assessment of the resources used in its production and delivery. Under the framework, the University agreed to pilot ABC at the Riverside campus and engage two other campuses in scoping studies to potentially pilot ABC as well. The Davis and Merced campuses completed scoping studies and, following discussions with State officials, also undertook pilot programs. The results from all three pilots are being summarized in a final report by the UC Office of the President and will be published soon.
- **Pilot adaptive learning technology.** Adaptive learning can be an effective way to evaluate a student's mastery of a subject or skillset and target instruction to areas where it is most needed. As part of the framework, three UC campuses – Davis, Santa Barbara, and Santa Cruz – piloted adaptive learning with a focus on improving instruction and increasing the number of students who master content in particularly difficult courses and persist to completion.
- **Explore opportunities to address industry workforce needs.** UC convened industry and academic leaders to further identify online programs that could be developed to better align UC's instructional programs with industry workforce needs. Discussion among the 54 attendees focused on how UC can help businesses meet their employees' educational needs and how those outside of UC can build cross-functional partnerships that span different UC departments and schools.

New Approaches to Increasing Faculty Diversity. Increasing faculty diversity is a high priority for UC but remains a challenge nationally. Taking an evidenced-based approach, UC has used $2 million in one-time funds provided in the Budget Act of 2016 to fund three pilot programs designed to identify best practices in recruiting a diverse faculty. (These are in addition to diversity recruitment efforts that exist at every campus.) Following a competition among all campuses, resources were ultimately focused on three pilots where an influx of resources could have an immediate impact. Each pilot site implemented a different intervention, enabling the University to measure the relative impact of different practices.

The outcome of the pilots is encouraging. The percentage of underrepresented minority and female faculty hired in some pilot units increased substantially, and all pilot units experienced an increase in the number of new faculty who have made valuable contributions to diversity – which can improve the campus climate for women and underrepresented minority faculty as well as students and promote equal opportunity for all members of the academic community.

Preliminary findings suggest a number of best practices, including the importance of leadership from Deans and Associate Deans; a more deliberate use of existing University faculty policies on contributions to diversity; the impact that research on faculty recruitment processes has on engaging data-driven faculty; and that departmental incentives matter. A full report on the pilot programs became available in November 2017.

Enhancing Support for Low-Income Students and Students from Underrepresented Minority Groups. The Budget Act of 2016 allocated $20 million in one-time funds to the University for support services for low-income students and students from underrepresented minority groups, including students who attended Local Control Funding Formula Plus (LCFF+) high schools. (LCFF+ high schools are designated by the California Department of Education as eligible for supplemental funding under the Local Control Funding Formula. They are unique in that over 75 percent of their enrolled students qualify for free or reduced-price meals, identify as English language learners, or are foster youth.)

In response to this opportunity, every UC campus submitted proposals to the Office of the President to launch new efforts or expand current programs using its share of these funds, which were generally allocated to campuses in proportion to the number of students from LCFF+ high schools that they enrolled. An “innovation reserve” of $1 million was allocated separately to fund particularly promising programs. Proposals included efforts to increase the number of students at every stage of the admissions pipeline – application, admission, and enrollment – as well as to enhance the academic support services provided to enrolled students. Examples include providing LCFF+ high school students and their families with UC campus experiences and designated mentors; mentor training programs for faculty, staff, and students; and expanded online tutoring and adaptive learning systems.

Beginning November 2017, the University will report annually on the number of students from LCFF+ high schools who were admitted to the University and the number who enrolled, disaggregated by campus.

Expanding Innovation and Entrepreneurship. UC campuses are taking full advantage of the opportunities to enhance innovation and entrepreneurship (I&E) created by Assembly Bill 2664 (Irwin) of 2016, which provided $2.2 million to each UC campus for activities to expand or accelerate economic development in the state in alignment with other I&E efforts.

Campuses’ investment strategies for these funds were reviewed by two external advisory boards and include the following:

- **Startup incubators**, which provide workspace, laboratory space, and/or equipment for product development and startup opportunities. Also included in this category is programming targeted at startup incubator tenants, such as mentorship programs or access to legal or financial services.
- **Proof of concept grants**, which target the critical funding gap in the commercialization process between research funding in a university lab and “angel” or pre-seed funding for a startup company.

- **Education, mentoring, and events**, including educational programs aimed at entrepreneurs, pitch sessions that bring together UC-connected startup companies with investors, and mentorship programs that were not tied to a specific startup incubator.

The investments in I&E made possible by this funding have already helped catalyze a culture of entrepreneurship at campuses, engage external experts and other stakeholders, and improve entrepreneurs' chance of success – all of which can have a positive economic impact on the surrounding community, consistent with the goals articulated in AB 2664.

The University submitted a complete report on the specific activities supported by these funds in November 2017.

Accountability and Transparency

The University has made great strides in recent years in providing the public with new and expanded information about its operations, policies, and outcomes. In some cases, efforts to increase accountability and transparency arose in response to requests from specific stakeholders. Increasingly, however, the University is proactively providing this information to help support informed decision-making and to address topics of general interest. Several examples are described below.

- **The University of California Information Center.** In 2015, the University of California created the UC Information Center (https://www.universityofcalifornia.edu/infocenter) to provide the general public with easy access to extensive information about the University of California. Current and historical data are available on topics such as the size and composition of the University's workforce, UC admissions, trends in student enrollment and degree production, the diversity of the UC community, revenue and expenses, and other indicators of institutional performance.
- **Expenditure for Instruction Reporting.** Since 2014, the University has published a biannual report detailing the costs of undergraduate and graduate education as well as the fund sources used to cover those costs, pursuant to Section 92670 of the California Education Code. (A similar provision applies to the California State University.) The report captures both direct and indirect costs and contains a detailed explanation of how the figures were derived. Beginning with the 2018 edition of the report, results will be presented at the campus level. The most recent version of the report (from September 2016) may be found at http://www.ucop.edu/institutional-research-academic-planning/content-analysis/institutional-measures/cost-of-instruction-reporting.html.
- **State General Fund Allocations to UC Campuses.** In response to recommendations from a 2011 report of the California State Auditor, the University developed a systemwide budget manual explaining how State General Funds appropriated to the University are allocated across the campuses. The University also publishes those allocations annually. Both documents can be found at http://www.ucop.edu/operating-budget/budgets-and-reports/other-resources/index.html.
- **UCOP Audit Implementation Plan.** Detailed, up-to-date information about the University's progress in implementing recommendations made in April 2017 by the California State Auditor regarding UC Office of the President expenditures is available on the University's website at http://www.ucop.edu/ucop-audit-implementation/index.html. The website describes reporting requirements and milestones for different areas of work (workstreams) that are aligned with each recommendation from the audit report, along with the status of each workstream.

A Partnership for the Future

Many of the accomplishments related to enrollment growth, innovation, and accountability described above were achieved in partnership with the State and have produced positive outcomes for the University and its stakeholders. The University faces real challenges, however, in sustaining future enrollment growth as well as academic excellence without adequate state support. An ongoing partnership in which the University and the State both do their part will be an essential element of any successor long-term funding framework for UC.

CONTEXT FOR THE 2018-19 BUDGET PLAN

The 2018-19 budget plan incorporates many considerations that affect the University's ability to continue to provide extraordinary levels of access, affordability, and excellence to future generations of students. Specifically, the plan reflects elements of the current long-term funding framework agreed upon by the Governor and the University; the opportunities and challenges created by the unprecedented recent growth in California resident undergraduate enrollment; and the Budget Act of 2017, which modifies the University's internal allocation of resources, sets expectations regarding enrollment growth in 2018-19, and calls upon the University to fund that enrollment growth itself. Each of these considerations is described in greater detail below.

The Long-Term Funding Framework between the Governor and UC

In addition to the reforms described earlier, the long-term funding framework established between the Governor and the University contained the following key elements directly related to the University's budget:

- State support for the University's permanent base budget would increase by 4 percent annually over the term of the agreement through 2018-19.
- The University would receive $436 million in one-time funding over three years from Proposition 2 funds to help address the unfunded liability associated with the University of California Retirement Plan (UCRP).
- The Student Services Fee would be expected to increase by 5 percent annually, with half of the new revenue (net of financial aid) to be used to provide enhanced student mental health services.
- Moderate increases in Nonresident Supplemental Tuition would be permitted.
- Any tuition adjustment proposed for 2017-18 or later years would be generally pegged to economic indicators that reflect cost increases in the broader economy.

The stable funding provided by the framework agreement has allowed UC to meet its most pressing budgetary needs and provided campuses with greater predictability in their funding projections. Three aspects of the framework have a direct bearing on the University's budget plan for 2018-19.

- **Adjustment to the University's base budget.** The Governor's May Revise budget proposal indicated that maintaining the base budget adjustment of 4 percent for the University in 2018-19 may not be possible in light of State revenue projections and other funding commitments. The proposal suggested that base budget adjustments for both UC and the California State University could be as low as 3 percent. For UC, the difference between a 4 percent adjustment and a 3 percent adjustment is the loss of approximately $34 million for 2018-19.
- **Funding for UCRP.** The $436 million of one-time State support for UCRP allowed the University to make critical progress toward addressing the funded status of the plan beyond what would have been possible through employer and employee contributions alone. The framework does not provide State funding for UCRP beyond 2017-18. As part of the University's long-term effort to continuously improve the plan's funded status, the Regents authorized an increase in the employer contribution rate from 14 percent to 15 percent in 2018-19. Covering this increase would require an estimated additional employer contribution of $33 million from core funds in 2018-19.
- **Progress on programmatic aspects of the framework.** The University has fully implemented nearly all of the programmatic reforms specified by the framework, as described above (see "Innovation to Achieve Results"). The State's desire for further progress in some areas is reflected in a provision of the Budget Act of 2017 that makes $50 million of the University's 2017-18 State appropriation contingent on certain outcomes. These are discussed more completely under *The Budget Act of 2017*, below.

California Resident Enrollment Growth

As described earlier, California resident undergraduate enrollment has grown significantly in recent years. This growth, while a boon to California students seeking to enroll at UC, creates challenges for campuses. The challenges resulted in part because actual enrollment growth far exceeded the funded enrollment growth targets specified in the Budget Acts of 2015 and 2016. Respectively, those acts provided State support for enrollment growth of 5,000 students in 2016-17 over 2014-15 levels, and enrollment growth of 2,500 additional students in 2017-18 compared to 2016-17.

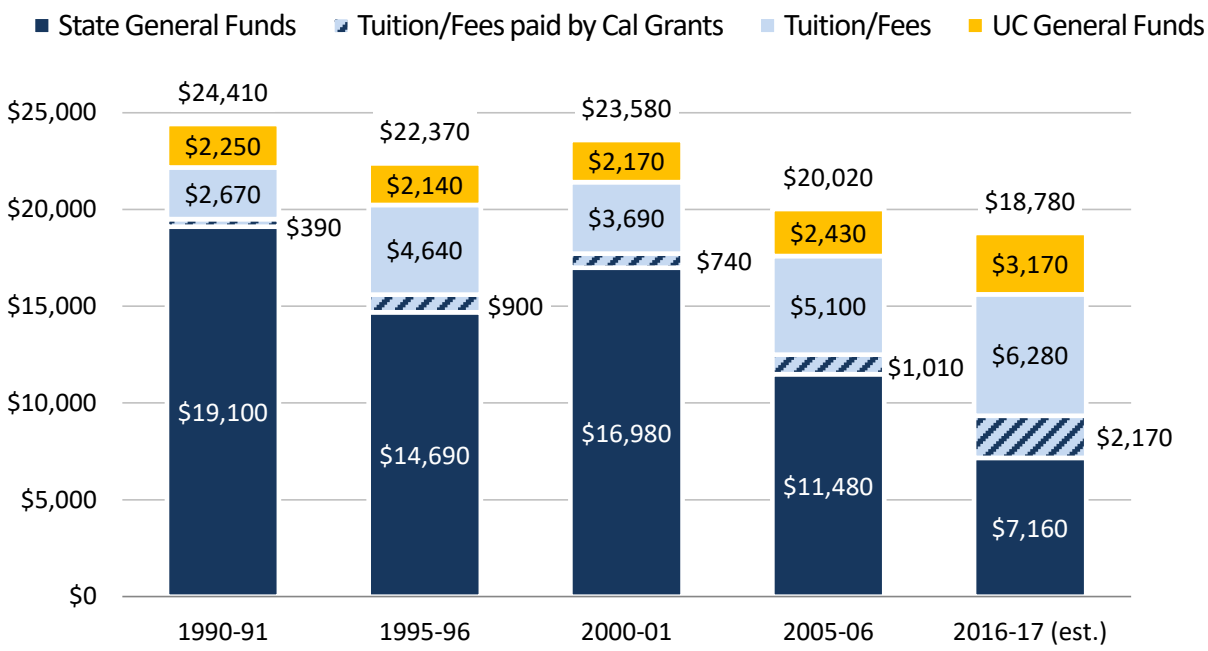
Both Budget Acts provided funding on an all-or-nothing basis: UC was to receive no enrollment growth funding if it fell short of the specified goal, yet would receive no additional funding for enrolling students in excess of the goal. To avoid the prospect of receiving no State funds for enrollment growth, campuses made the rational decision to err high when trying to achieve their enrollment growth targets. This tendency, combined with the inherently unpredictable nature of enrollment management, resulted in estimated enrollment growth of approximately 10,100 students between 2014-15 and 2017-18, or 2,600 more than the 7,500 students for which the Budget Acts of 2015 and 2016 provided State funds.

One consequence of the lack of State funding to fully support recent growth in California resident undergraduates has been a continued overall decline in average instructional expenditures per student. As shown in Display 3, resources for educational programs for general campus students (undergraduate and graduate students combined) have declined on an inflation-adjusted, per-student basis. The display highlights four significant trends in funding for the instructional mission:

- The average expenditure per student for a UC education declined by 23% over 26 years – from $24,410 in 1990-91 to an estimated $18,780 in 2016-17. Contrary to the popular assumption that spending in higher education is growing at an excessive rate, instructional expenditures from core funds at UC have declined, not increased, on a per student basis.
- State General Fund support for the University's permanent base budget now covers a smaller share of educational expenditures compared to earlier years. In 1990-91, State funding for UC represented an average of $19,100 per student – 78% of the total expenditures for education. In 2016-17, State support is equivalent to $7,160 per student, or 38% of total expenditures for education. Including State-funded Cal Grants, which cover Tuition and fees for many UC undergraduates, the State-funded share of educational expenditures remains lower than in decades past.
- Tuition and fees now play a more substantial role in funding core educational expenditures. Tuition and fees contributed, on average, $8,450 per student toward these expenditures (including $2,170 covered by Cal Grants). Tuition and fees now provide 45% of the funding for instruction compared to only 13% in 1990-91.
- UC General Funds are helping fund a larger share of expenditures for education. Remaining fairly flat through two decades at approximately 10% of total expenditures, UC General Funds (with Nonresident Supplemental Tuition as the largest fund source within this fund group) contributed an estimated 17% of the total in 2016-17.

In lieu of State support to help subsidize the cost of educating these additional California resident undergraduates, campuses must instead divert funds from other pressing budgetary needs to accommodate the larger-than-expected enrollment of these students.

Display 3: Average Expenditures for Instruction per Student from Core Funds, Constant 2016-17 Dollars



Since 1990-91, average inflation-adjusted expenditures for educating UC students have declined. The State-funded share has declined even more rapidly, with student-related charges playing a larger role. Figures are inflation-adjusted resources per general campus student, net of financial aid.

The Budget Act of 2017

Funding provided to the University under the Budget Act of 2017 was generally consistent with the long-term funding framework between the Governor and UC. Three provisions of the Act warrant special mention because of their potential implications for the University's operating budget for 2018-19.

- **Funding is contingent upon meeting certain requirements.** Under the Act, $50 million of the University's 2017-18 State General Fund appropriation is contingent upon the University demonstrating a good-faith effort to take all possible steps to satisfy five requirements: completing pilot programs of activity-based costing at three campuses by May 2018; attaining a freshman-to-transfer ratio of 2:1 systemwide and at every campus except Merced by 2018-19; implementing recommendations made by the California State Auditor in its recent audit of the Office of the President by April 2018; eliminating supplemental retirement payments for Senior Management Group employees hired after May 2018; and disclosing information about revenues, expenditures, and carryover funds for systemwide and presidential initiatives. The University expects to meet the requirements set forth in the Act; ultimately, however, the State Director of Finance is responsible for determining whether these requirements have been met.
- **Enrollment growth expectations for 2018-19.** The Act calls upon the University to enroll at least 1,500 more California resident undergraduates in 2018-19 compared to 2017-18. In a departure from previous Budget Acts, however, the Act provides no assurance of incremental State General Funds to support that enrollment growth. Instead, the Act suggests that this enrollment growth should be funded, at least in part, by reallocating existing resources from other parts of the University's budget. The Act directs the University to consult with the Legislature

and the Department of Finance to identify possible areas where funding could be redirected toward enrollment growth. Those discussions are currently underway.

- **Direct State appropriation for the Office of the President.** In a significant departure from past Budget Acts, the Budget Act of 2017 allocates $348.8 million of State General Funds to support the Office of the President and UC Path and requires the University to eliminate the general campus and UC Path assessments that would have otherwise funded those programs and activities. Although intended to be revenue-neutral to the University as a whole, the provision has far-reaching implications for the State's direct involvement in University governance, the extent to which State funds should be used to subsidize centralized administrative functions (rather than to directly benefit students at UC campuses), and how campuses that are particularly dependent on State support can respond to a permanent, long-term redirection of State funding to support the Office of the President instead of campuses.

SUMMARY OF THE UNIVERSITY'S 2018-19 BUDGET PLAN

The University's 2017-18 budget plan represents an integrated strategy for addressing the most pressing needs of the University and the State as a whole:

- **Increasing access for California undergraduates and expanded graduate programs,** consistent with the University's role under the Master Plan
- **Investing in student success and academic excellence** for undergraduate and graduate students alike
- **Improving affordability** for UC students, so that the University can continue to attract, enroll, and graduate a diverse and talented student body, regardless of students' financial circumstances
- **Addressing the University's most pressing infrastructure needs** within a context of aging facilities and prospects for future enrollment growth
- **Acknowledging other mandatory and high-priority budget needs** related to collective bargaining agreements, employee and retiree health benefits, competitiveness for faculty and staff, and inflation

The expenditure components of the plan are described below, followed by a description of the proposed sources of revenues and savings.

Major Expenditure Categories for 2018-19

Enrollment Growth. UC is dedicated to the mission of access for California residents consistent with its founding as the State's land grant institution and in accordance with the Master Plan for Higher Education. As a research university, UC also must educate enough graduate students to meet the state's economic development and skilled workforce needs, help advance knowledge through its research mission, and work with faculty and undergraduate students as part of the education continuum. The 2018-19 budget plan provides the resources needed to increase enrollment at both the undergraduate and graduate levels.

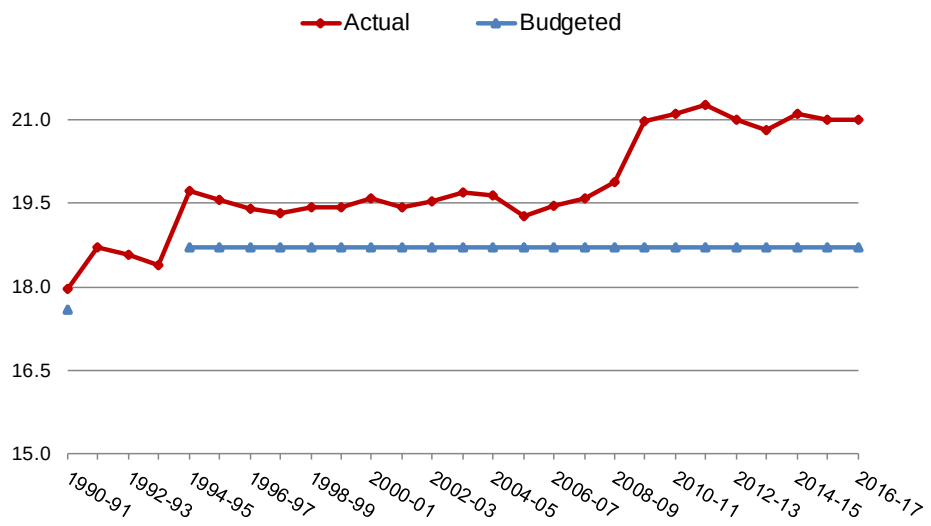
The 2018-19 budget plan anticipates enrollment growth of 2,000 California resident undergraduate students and 500 graduate students over 2017-18 levels. The plan also reflects an additional 1,000 undergraduate nonresident students systemwide, the same number that was incorporated into the University's budget plan for 2017-18. Projected expenditures associated with this enrollment growth are approximately $18,800 per student (excluding financial aid) based upon the University's marginal cost calculation methodology. Of this amount, the State's expected contribution would typically be about $10,000 per student, with the remainder covered by the tuition and fees paid by the student (less the amount used for financial aid).

As the State's research university, UC is also concerned with enrollment of graduate students to complement and support dramatic undergraduate growth. As faculty are added in response to increased enrollment, graduate students are needed to partner with faculty in their research, teach and mentor additional undergraduates, and contribute to the state's skilled workforce and broader economy upon graduation. To address this need, the budget plan includes enrollment growth of 500 graduate students in 2018-19.

Investment in Student Success and Academic Excellence. Reinvestment in the academic infrastructure of the University remains a top priority, made even more essential by the University's recent enrollment growth above funded levels noted earlier (see "California Resident Enrollment Growth" above). The areas identified for investment in academic quality are critical elements in any academic institution's ability to maintain excellence and have remained high priorities of the Regents. The University's 2018-19 budget plan proposes a further investment of $50 million toward this effort, which would provide campuses with much needed resources for the following types of programs:

- **Improving the Student-Faculty Ratio.** As shown in Display 4, the University's student-faculty ratio deteriorated dramatically during the recent fiscal crisis and stands currently at 21:1, well above the ratio previously agreed upon with the State of 18.7:1 (sometimes referred to as the "budgeted" ratio). Improving the student-faculty ratio would permit the University to offer smaller class sizes and expand the number of courses offered. A lower student-faculty ratio also creates more opportunities for contact outside the classroom, guidance in internships and placements, and undergraduate participation in research and public service, all of which directly benefit students. Reducing the student-faculty ratio also contributes to further improvement on performance outcomes such as graduation rates and time-to-degree.
- **Supporting Startup Costs for New Faculty.** As campuses begin to hire faculty once again – to replace those who have retired or separated, to expand into emerging areas of scholarship and research, and to accommodate enrollment growth – they are faced with the need to cover startup packages for new faculty. Startup costs include renovation of laboratory space; equipment; graduate student, postdoctoral scholar, and technical staff support; and other costs necessary for new faculty to establish their research teams and projects and to become productive

Display 4: Budgeted and Actual Student-Faculty Ratios



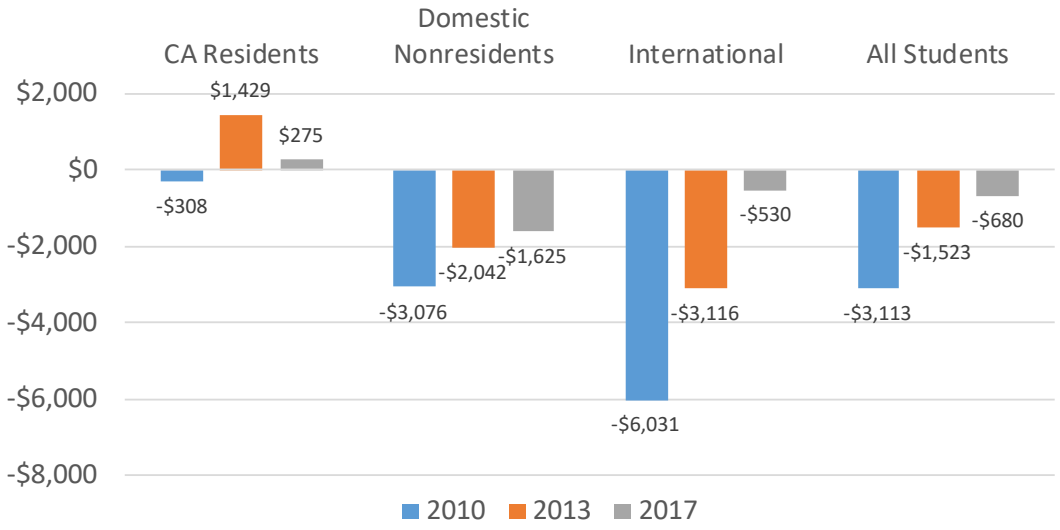
Actual student-faculty ratios have increased precipitously since the early 1990s.

members of the University community. In some disciplines – especially health sciences, life sciences, physical sciences, and engineering – startup costs frequently exceed $1 million per faculty member. Since UC's top candidates have multiple job prospects and UC is in competition for these hires, candidates make decisions based in part on UC's ability to support cutting-edge research.

- **Augmenting Graduate Student Support.** Graduate education and research at the University fuel California's innovation and economic development, helping establish California as the sixth largest economy in the world. The strength of UC's graduate programs is also a key factor in attracting and retaining high-quality faculty. To maintain that strength, the University must ensure that the amount and duration of graduate student support are competitive. Since 2004, surveys of students admitted to the University's academic doctoral programs have repeatedly shown that UC's offers of financial support are, on average, less than the offers students receive from competing institutions. The University has attempted to address this issue on several fronts, including freezing graduate student Nonresident Supplemental Tuition for several years and increasing the average value of its graduate student support offers. Recent surveys suggest that these efforts have started to yield results. As shown in Display 5, UC's competitive gap has narrowed since 2010 – an important sign of progress. Nevertheless, students' offers from competing institutions continue to be higher, on average, than offers from UC, illustrating the need for continued investment in this area.
- **Enhancing Undergraduate Instructional Support.** Historically, the State has recognized chronic shortfalls in funding for key areas of the budget that directly affect instructional quality – instructional equipment replacement, instructional technology, libraries, and ongoing building maintenance. The previous two Compacts with former Governors proposed an additional 1% per year base budget adjustment to help address these shortfalls. The University must reinvest in these areas if it is to keep up with technical innovations in equipment, libraries, and instructional technology, and address ongoing maintenance needs.

Improving Affordability. The budget plan for 2018-19 includes $47.1 million in additional student financial aid for undergraduate and graduate students. The additional aid is more than enough to cover the proposed adjustments to Tuition and the Student Services Fee for undergraduate UC financial aid recipients. In fact, in addition to covering the adjustments

Display 5: Competitiveness of UC Financial Support Offers to Academic Doctoral Students



Surveys have shown that the gap (shown in the chart above) between graduate student support offers from UC and the offers students received from non-UC institutions have declined in recent years. However, students' offers from competing institutions continue to be higher, on average, than offers from UC.

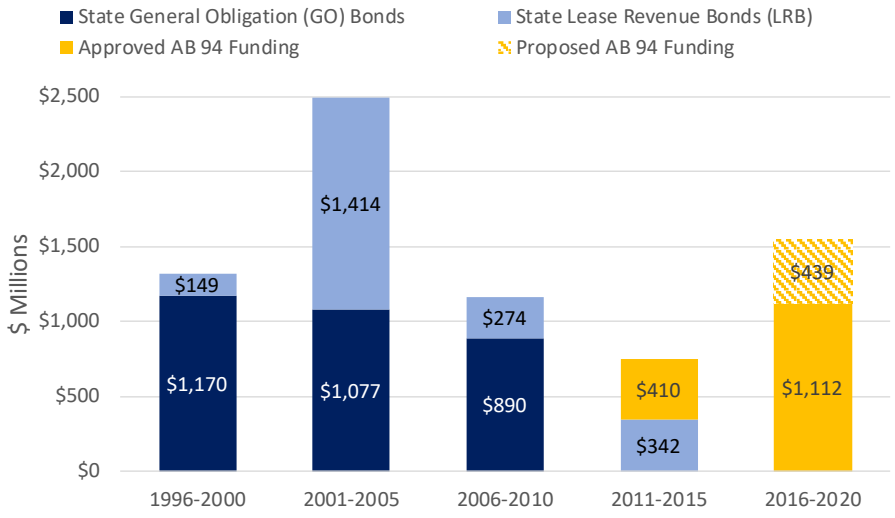
for these students, the revenue is expected to provide them with approximately $100 extra to help cover other expenses that they face such as rent, food, books and supplies, and transportation. The impact of the proposed adjustments on undergraduate and graduate students is described more fully in the "Tuition, Excellence, and UC Affordability" section of this chapter.

Expanded Student Mental Health Services. The budget plan includes $4.7 million for expanded student mental health services, consistent with the high priority that the Regents and students have placed on this issue in recent years. Funding will allow campuses to make progress on their plans to hire additional mental health advisors and other professionals to provide students with improved access to counseling and related resources.

Capital Needs. Two components of the budget plan directly address a portion of the capital needs described earlier in this chapter.

- **Deferred Maintenance.** The 2018-19 budget plan includes $35 million in one-time State funds for deferred maintenance, which represents a substantial and growing safety and economic risk to the University. As University facilities deteriorate, the threat of a significant building or infrastructure failure grows – a failure that could place students, faculty, and other staff at risk, cause extensive damage to facilities and other property, destroy years of research, or disrupt instructional and other core mission activities for an extended period of time.
- **Capital Improvements.** The University is faced with a growing backlog of capital projects. The new State process introduced by AB 94 allows the University to address its highest-priority capital needs until a new General Obligation bond can be brought before California voters. As shown in Display 6, the importance of this funding mechanism has grown in recent years due to the lack of additional capital resources from General Obligation bonds or State lease revenue bonds. To utilize this mechanism, however, the University must set aside sufficient revenue from other parts of its operating budget. The budget plan for 2018-19 includes an additional $15 million for debt service and related capital expenses, including those associated with Merced 2020, enrollment growth, seismic safety, and other approved capital projects. The University maintains a continuing commitment to pursue gifts and other potential

Display 6: Funding from General Obligation Bonds, Lease Revenue Bonds, and AB 94 Funds



Funding available from the University's historical sources of support for capital financing – General Obligation bonds and lease revenue bonds – declined sharply over the past decade. Instead, UC has financed projects using a portion of its own State General Fund appropriation under AB 94.

sources to supplement State funding for construction. The University has capital needs for student-life and auxiliary programs, for example, that do not qualify for State support and can be addressed with non-State resources only. In this context, the University has intensified its efforts to make the most efficient use of existing facilities, to carefully define and analyze facility needs, to evaluate competing needs and set priorities that maximize the value of available funds, and to continually improve management of project design and construction.

Mandatory and Other High-Priority Costs. There are a variety of cost increases the University must pay each year, regardless of whether additional new funding is provided to support them. Below is a description of the major mandatory and high-priority cost increases projected for 2018-19:

- **UC Retirement Plan.** The University of California Retirement Plan (UCRP) provides pension benefits for more than 59,000 retirees and survivors and has more than 126,000 active employee members as of July 1, 2017.

  The 2018-19 budget plan includes $17.1 million for increased employer contributions to the retirement system from core funds, which reflects maintaining the employer contribution to UCRP at 14% next year. This amount is approximately $33 million less than the contribution from core funds that would be required if the University were to increase the contribution to 15% in 2018-19, as was approved by the Regents in July 2017. The University believes that maintaining the employer contribution at 14% for 2018-19 is prudent in light of the lower-than-expected State support for the University in 2018-19 and the funded status that can be achieved with a 14% contribution rate and other financing strategies.

  Part of the multi-year funding plan for the University agreed to with the Governor in May 2015 called for UC to cap pensionable salaries consistent with the Public Employees' Pension Reform Act adopted by the State in 2013 in return for $436 million in Proposition 2 funds over three years. The Regents approved such a cap in conjunction with a new set of retirement options in March 2016, and the third installment of this contribution was made in 2017-18. The University is hopeful that, at a future date, additional support from Proposition 2 funds will be made available to support UCRP, which would be an appropriate and important use of those funds in light of the support that the State provides to other public segments of higher education for their retirement plans.

- **Employee Health Benefits.** Until recently, employee health benefit costs have risen rapidly, typically between 8.5 percent and 11 percent annually. Because no State funds have been provided for this purpose since 2007-08, campuses have redirected funds from existing programs to address these cost increases.

  Significant efforts have been made in the past several years to limit health benefit cost increases and reduce pressure on already strained operating budgets. Through negotiations with providers and other measures, UC has been able to hold health benefit cost increases to levels below the national trend. Overall core-funded health benefit costs in 2018-19 are expected to increase by about 4 percent, or $18.9 million.

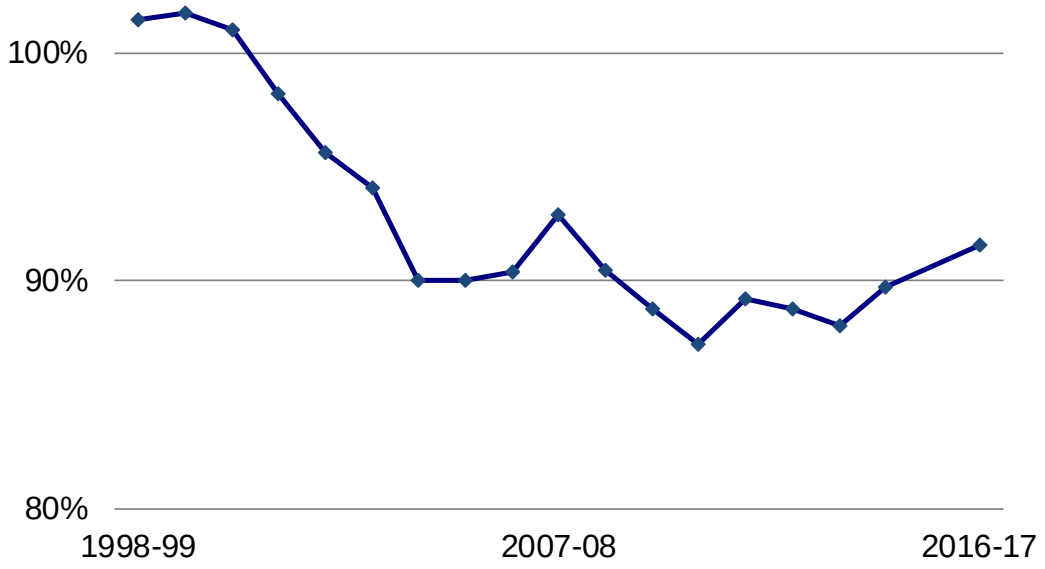
- **Retiree Health Benefits.** In 2017-18, more than 63,000 UC retirees and beneficiaries are eligible to receive or are receiving an estimated $315 million in health benefits paid for by the University. The State has historically provided funding to the University equivalent to the per-employee funding provided for other State employees for the increased number of annuitants expected in the coming year. In the 2014-15 budget, the State stopped funding these costs separately, adding them to the expenditures to be covered within the base budget increase provided under the Governor's multi-year funding plan. The annuitant health costs paid from core funds are estimated to increase by $7.7 million in 2018-19.

- **Contractually Committed Compensation.** Salary increases for represented employees are governed by collective bargaining agreements with each represented bargaining unit. These agreements are expected to result in additional costs of $28.3 million in 2018-19.

- **Faculty Merit Program.** The University has maintained the faculty merit program each year – even through years of fiscal crisis – because of its importance to the quality of the University. Faculty are generally eligible to be considered every two to three years for a merit increase, which is intended to reward them for excellent teaching and research, as well as fulfillment of their public service mission. This program requires a rigorous peer review process before a merit increase is awarded. The budget plan includes $32 million for this purpose in 2018-19.
- **Keeping Pace with Inflation.** To maintain the quality of the instructional program and all support activities, the University must regularly replace, upgrade, or purchase new instructional equipment, library materials, and other non-salary items. The University must also purchase utilities to provide energy to its facilities. Just as costs for salaries and benefits for employees rise, the University's non-salary spending is affected by inflation. The University's 2018-19 expenditure plan includes $32.3 million for non-salary price increases of 2.5%. This level of increase is below the Department of Finance's projections for general cost increases, but the University believes that it represents an appropriate budget target in light of the University's ongoing cost-containment efforts.
- **Compensation.** The University regularly compares its faculty salaries with those of eight peer institutions to evaluate its market position. A little more than a decade ago, UC's faculty salaries were on par with the market. As shown in Display 7, faculty salaries had slipped to 12% below market by 2010-11 and remained 10.3% below market in 2014-15, the latest year for which market data are available. UC remains at a competitive disadvantage relative to other institutions in recruiting and retaining top talent.

  To ensure that UC is able to recruit and retain faculty and prevent further growth in salary lags for both faculty and staff, the University must continue to support regular and predictable compensation increases. The budget plan in 2018-19 proposes an average increase in compensation of 3% for nonrepresented faculty and staff, resulting in a projected net increase in core fund compensation expenditures of $82.7 million (in addition to the faculty merit program described above).

Display 7: Ladder Rank Faculty Salaries as a Percentage of Market



Faculty salaries at UC have declined relative to UC's comparison institutions. In 2016-17, UC's faculty salaries were 8.4% below market.

Revenue and Savings Components of the 2018-19 Budget Plan

The 2018-19 budget plan proposes $428 million in available revenue increases to match expenditure needs. These increases fall into four revenue categories.

- **Cost Savings/Alternative Revenue Sources.** The budget plan assumes $50 million in funding attributable to continued asset management strategies, cost-saving strategies, and philanthropic giving. The plan also incorporates $14 million in new savings from continuing to phase out need-based financial aid for new cohorts of nonresident undergraduate students, along with $15 million to be redirected from other purposes – primarily from funds and/or programs administered by the Office of the President – to provide what has historically been the State's share of the marginal cost of enrolling 1,500 additional California resident undergraduates. These efforts continue the University's practice of resolving a substantial portion of its funding needs through internal actions to reduce costs, promote efficiencies, and generate new revenue.
- **State General Funds.** The plan includes a 3% base budget increase, or $103.1 million in new State General Funds. This figure is approximately $34 million less than the base budget increase of 4% specified in the Governor's multi-year funding plan. The plan also includes requests for $5 million from the State to support the enrollment growth of an additional 500 California resident undergraduate students, along with $5 million to support graduate enrollment to complement and support the dramatic increases in undergraduate enrollment that have occurred since 2014-15. Lastly, the plan proposes $35 million in one-time funds for deferred maintenance, comparable to the funding provided in the Budget Act of 2016 for this purpose.
- **Systemwide Tuition and Fees.** The plan includes $136.6 million of new revenue from Tuition and the Student Services Fee. More than one-third of this amount ($47.1 million) will be provided as financial aid to UC students. (See the section below for additional details.) Another $29.8 million will help cover costs associated with the proposed enrollment growth levels described above. The remaining net revenue – $9.4 million from a $54 adjustment to the Student Services Fee and $50.3 million from a $288 net adjustment to Tuition (which reflects the elimination of a $60 Tuition surcharge introduced to recover damages attributable to the Luquetta lawsuit and an adjustment of $348 to the base Tuition level) will be available to hire additional faculty, improve the student-faculty ratio, increase class availability (including bottleneck courses), expand access to student mental health services, address a portion of the University's capital needs, and help cover a portion of the mandatory and high-priority expenditures described above.
- **UC General Funds.** Nonresident enrollment has helped campuses during periods of constrained State funding. The budget plan proposes $64.3 million in new revenue from Nonresident Supplemental Tuition based on a 3.5% ($978) adjustment to undergraduate nonresident Tuition and projected enrollment growth 1,000 students. (This will yield an estimated $54.3 million net of instructional costs after taking into account the other charges that students pay.)

TUITION, ACADEMIC EXCELLENCE, AND UC AFFORDABILITY

Any consideration of a tuition adjustment must take into account, first and foremost, its potential impact on UC students – both in terms of the additional resources provided by such an increase, which allow campuses to maintain and enhance the quality of students' overall educational experience, and its impact on UC affordability when combined with other student expenses such as room and board, books and supplies, and transportation that collectively comprise a student's total cost of attendance. These factors are discussed in greater detail below.

Tuition and Academic Excellence

The tuition increase approved by the Regents for 2017-18 is expected to provide an estimated $48 million in incremental revenue for UC campuses this year, net of the amount set aside for undergraduate need-based aid. This revenue is enabling campuses to budget for a variety of investments that directly and indirectly enhance students' educational experience. These investments include, but are not limited to, the following:

- hiring ladder-rank faculty, lecturers, and teaching assistants to further expand undergraduate course sections;
- enhancing graduate student fellowships;
- improving service delivery in financial aid, academic advising, student counseling, and other areas of student support;
- technology upgrades in classrooms and lecture halls, particularly to support expanded instruction in data science;
- addressing critical deferred maintenance and student safety needs; and
- library support.

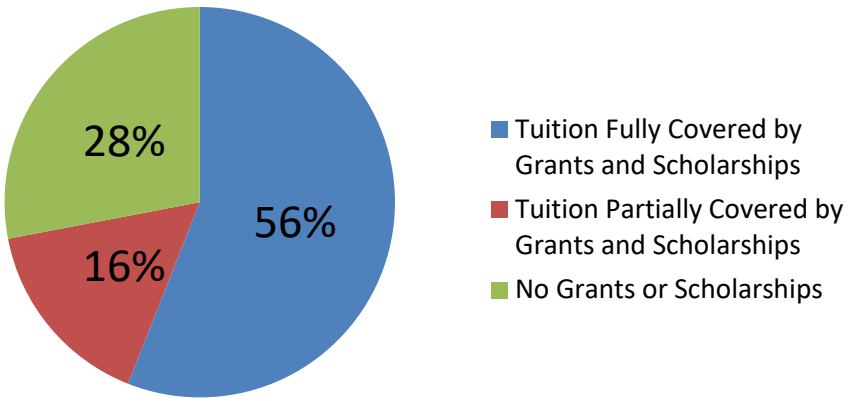
These investments can benefit students in myriad ways. Increased opportunities to work with outstanding graduate students and faculty members, for example, can influence undergraduates' choice of major and careers, allowing students to make academic and professional contributions that they had not previously thought possible. Having adequate class sections for in-demand courses can increase the likelihood that students graduate within four years – or sooner – which can greatly reduce their educational expenses and student debt at graduation. Living and learning within a safe, modern physical environment can improve student health and safety. All of these investments require resources. To the extent that other fund sources are already fully utilized to address mandatory cost increases described above, revenue from a tuition adjustment can provide critical budget relief and enable the types of student-focused investments described here.

The student-focused investments described above can help all students thrive at UC – not just those from traditional, college-going backgrounds. Among major research universities, UC has an unmatched track record of being accessible to students regardless of their financial resources or socioeconomic background. While many factors contribute to this result, a significant one is the University's and the State's commitment to financial aid.

UC Affordability, Tuition, and Financial Aid

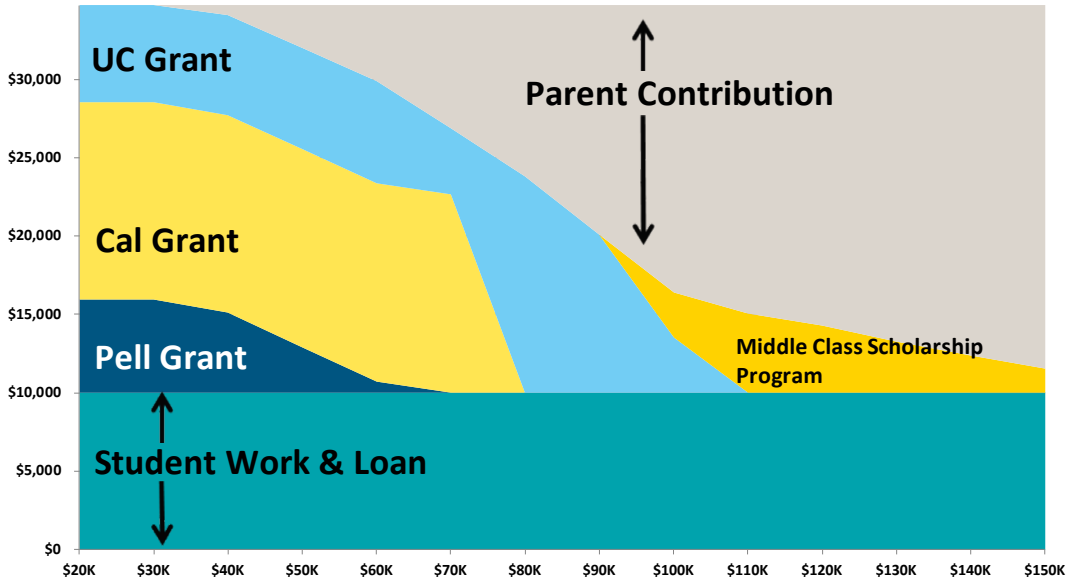
As shown in Display 8, most California resident undergraduate students at UC have their Tuition and fees fully covered by grants or scholarships. In 2016-17, 56% of California resident undergraduates effectively paid no Tuition or fees due to grant and scholarship awards, and another 16% of California undergraduates received awards that partially offset their charges.

Display 8: Percentage of California Residents With Tuition and Fees Covered by Grants and Scholarships



In 2016-17, 56% of California resident undergraduates effectively paid no Tuition or fees due to grant and scholarship awards, and another 16% of California undergraduates receive awards that partially offset their Tuition and fees.

Display 9: Typical Financial Aid Packages Based on the Average On-campus Cost of Attendance ($34,700 in 2017-18)



The University's financial aid programs are designed to enable California resident undergraduates to cover their total cost of attendance – not just tuition and fees – through a combination of manageable levels of student work and borrowing, a federally calculated parent contribution, and grant support from federal, State, and University student aid programs.

The University has long recognized that financing a UC education requires more than covering the cost of tuition and fees. Students also face expenses such as room and board, books and supplies, transportation, health insurance, and other costs that must be addressed. For that reason, Regents Policy 3201: The University of California Financial Aid Policy calls upon the University to enable California resident undergraduates to cover their total cost of attendance through a combination of a manageable parental contribution calculated according to a federal formula, a manageable student contribution from borrowing and work, and grant assistance from federal, State, and University sources.

Display 9, above, shows how that policy translates into typical financial packages for families at different income levels based upon the average total cost of attendance for students living on campus, the most common housing choice among first-year UC undergraduates. As shown in Display 9, there are four primary sources of support for UC undergraduates:

- **Federal Pell Grants** are awarded to students from families with the lowest income levels. The maximum size of a Pell Grant is determined at the federal level and is not expected to change in 2018-19.
- The State's **Cal Grant program** covers tuition for over one-third of California resident undergraduates.
- **UC Grants** cover tuition for some students who do not qualify for Cal Grants (e.g., many independent students) and also help students with the greatest need cover a portion of their other costs.
- The State-administered **Middle Class Scholarship (MCS) program** assists students who might otherwise not qualify for need-based grant assistance like a Pell Grant, Cal Grant, or UC Grant. The MCS is designed to ensure that eligible students receive grant and scholarship assistance to cover at least a portion of tuition for California families earning up to $165,000.

When tuition increases, funding from UC Grants, Cal Grants, and the Middle Class Scholarship program will increase, too. As a result, nearly 100,000 UC undergraduates can expect their aid to go up by more than the increase in tuition – which will provide these students with extra aid to help cover some of their other costs.

To illustrate this, Display 10 shows the estimated impact of a tuition increase and the resulting increase in financial aid for typical students at different income levels next year with and without an increase.

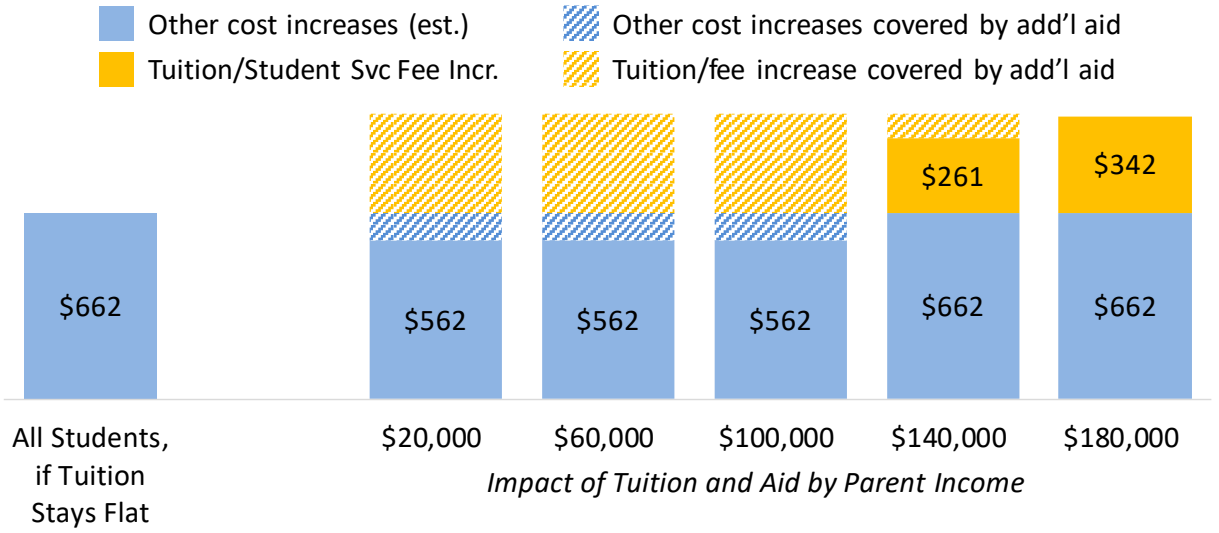
The leftmost bar shows that if Tuition and the Student Services Fee were to remain flat next year, students could still anticipate an estimated average increase of about $660 in other costs just due to inflation. These costs do not generate any new funding for financial aid, so students would be expected to cover them out-of-pocket.

The other bars show the net increase in total charges that students at different income levels would experience after taking into account increases in financial aid. For three of the five students – those from families earning $20,000, $60,000, and $100,000 – Cal Grants and UC Grants would fully cover the adjustment, shown in yellow, and also provide about $100 extra to cover part of the increase in non-fee costs. For these students, who are the nearly 100,000 students with the greatest need, their net cost would increase by about $560 compared to $660 if tuition stayed flat. This interaction between tuition and financial aid – in particular, the UC Grant program and Cal Grants – is a big reason why UC has maintained such a strong record of financial accessibility even when tuition increased by double digits during the Great Recession.

For the family earning $140,000, the tuition adjustment would be partly covered by the Middle Class Scholarship Program. That relatively new program is completely phased in this year and covers a portion of tuition for California families earning up to $165,000.

Only when income rises to $165,000 or higher would a California family typically be expected to cover the full adjustment themselves. For those families, a modest increase is likely to be manageable. Moreover, students from these families – like all UC students – will benefit from the faculty, the teaching assistants, the classroom modernizations, and other enhancements that Tuition helps make possible and that can help students graduate sooner.

Display 10: Estimated Impact of Proposed Tuition Increase on Financial Aid Awards for California Undergraduates



Figures are preliminary estimates based on typical financial aid packages to students living on campus. The illustration depicts a net Tuition increase of $288, a Student Services Fee increase of $54, and other costs increasing by inflation (3%).

A combined adjustment of $342 to students' mandatory systemwide charges would be fully covered for most low- and middle-income students and would provide these students with an estimated $100 to help cover increases in other costs. In general, for California resident undergraduates, only families with incomes above $165,000 would be expected to cover the full cost of the increase.

Maintaining Competitiveness for Graduate Academic and Graduate Professional Students

Under the budget plan, the University would continue its practice of setting aside 50 percent of new Tuition revenue attributable to graduate academic students and 33 percent of new Tuition from students in professional degree programs for graduate student support. The funding provided under the plan would be available to programs and departments to provide whatever forms of student financial support are most appropriate in light of their enrollment goals and the students whom they serve. For example, fellowship and assistantship support is particularly important to academic doctoral programs that compete against the very best public and private institutions worldwide to enroll the most talented students. New funding provided under the plan, together with predictability in students' mandatory systemwide charges, would enhance these programs' ability to craft desirable multi-year offers of support.

Graduate programs in professional disciplines provide fellowships and grants to assist students from all socioeconomic backgrounds to obtain professional degrees, thereby enabling these students to make significant contributions to their respective fields. In addition to funding provided under the multi-year plan for mandatory systemwide charges, professional degree programs are also expected to supplement financial aid resources by an amount equivalent to at least 33 percent of new Professional Degree Supplemental Tuition revenue, or to maintain a base level of financial aid equivalent to at least 33 percent of total Professional Degree Supplemental Tuition revenue.

A BALANCED APPROACH THAT ACHIEVES SHARED GOALS

The 2018-19 budget plan represents a balanced funding proposal that supports a number of critical goals for the University and its stakeholders.

- The plan funds continued enrollment growth of California resident undergraduates at every campus, ensuring that the University will continue to meet its responsibility under the Master Plan to offer admission to every eligible California student.
- Graduate student enrollment will increase under the plan, supporting the University's research mission and the many benefits that it brings the California economy, as well as helping California meet the demand for a highly skilled workforce. This will also ensure that undergraduate enrollment growth is supported by additional teaching assistants and graduate mentors.
- The plan provides new resources to every UC campus for hiring additional faculty, improving the student-faculty ratio, expanding course availability, and providing greater levels of student counseling and other support in order to improve students' academic experience at UC and enable them to make timely progress towards their degree.
- The modest adjustments to Tuition and the Student Services Fee reflected in the plan will be fully covered for over 60% of California resident undergraduates due to increases in student financial aid from the University and State's financial aid programs. The adjustments will also generate additional aid to help students cover housing, food, books, and other expenses that they face.

Examples of the University's past achievements related to student success, access, and affordability appear in Display 11 on the following page. The proposed 2018-19 budget plan is intended to ensure that current and future generations of students have the same opportunities for educational advancement, personal and intellectual growth, and socioeconomic mobility that have characterized a UC education for previous generations of Californians.

Display 11: UC Outcomes Demonstrate a Record of Success

Undergraduate Success

- UC's four-year graduation rate for freshmen has risen significantly over the past 15 years (from 46% for the 1997 entering cohort to 64% for the 2012 cohort). The most recent six-year graduation rate, for the 2010 cohort, is 85%. The six-year graduation rate among freshman Pell Grant recipients is 82%.
- Transfer entrants have demonstrated similar gains, with the two-year graduation rate increasing from 37% for the 1997 entering cohort to 56% for the 2014 cohort. The most recent four-year graduation rate is 88%.
- As graduation rates rise, undergraduate students are also graduating more quickly. Students entering as freshmen take an average of 4.1 years to earn a bachelor's degree, which is about 7% less time than in 1994. For students entering as transfers, the average time to degree is 2.3 years, or 12% less time than in 1994.
- UC is actively engaged in efforts to continue to improve undergraduate outcomes. Increasing summer enrollment, for example, is critical to supporting timely graduation, with 8.9% of freshman entrants in the fall 2012 cohort graduating in the summer of their fourth year. Similarly, summer enrollment after the second year allowed 11.7% of the fall 2014 transfer cohort to graduate without having to enroll in a third year. Full-time student enrollment during summer session has increased by 21% since 2006.
- Data show that higher education remains one of the best investments an individual and the State can make. For example, within five years of graduating from UC, Pell Grant recipients earn an average income higher than their families' income during the time these students attended UC. On average, incomes of UC bachelor's degree recipients double between two and ten years after graduation.

Rankings/Ratings

- The *Washington Monthly* considers social mobility, research, and public service. According to its 2017 national university rankings:
    - Two UC campuses (San Diego and Davis) are among the top 10 institutions in the nation.
    - Five rank among the top 20.
- The *New York Times'* College Access Index 2017 underscores UC's role as an upward mobility machine. Six of the top ten institutions in the College Access Index are UC campuses, with UC Irvine in the top slot.
- In the 2017 Academic Rankings of World Universities by the Shanghai Ranking Consultancy, only four public universities in the world appear in the top 20, and three are UC campuses, with UC Berkeley ranking fifth. Factors considered in these rankings include quality of the faculty and research output.
- The U.S. Department of Education released a list of "Affordable Four-Year Schools with Good Outcomes" in 2016, spotlighting the nation's four-year institutions that provide the greatest return on investment, and included four UC campuses (Berkeley, Irvine, UCLA, and San Diego) among the top 20.
- The *U.S. News and World Report*, in its 2018 ranking system for institutions, focuses on academic reputation, financial resources, and selectivity in admissions. Its assessment on these metrics placed UC campuses among the very best public universities in the country:
    - For the 20th consecutive year, UC Berkeley is ranked the No. 1 Top Public School among National Universities, and for the first time, UCLA has tied with UC Berkeley for this No. 1 position.
    - Five UC campuses are among the top ten public institutions in the nation; six in the top 12.

Graduate Success

- UC awarded nearly 4,000 Ph.D.'s in 2017, or approximately seven percent of the nation's Ph.D.'s.
- More than 300 startup companies have been launched by UC graduate students or emerged directly from their discoveries.
- In 2017, 22 UC graduate students received Sloan Research Fellowship awards, which recognize early-career scientists and scholars whose achievements and potential identify them as rising stars.
- UC ranked first in the world among universities granted U.S. utility patents in 2016. UC has a total of 12,203 active patents, which include vaccines for hepatitis B, drugs to treat prostate cancer, mobility bionics that enable paraplegics to walk, varietals of strawberries, grapes and citrus, and the nicotine patch.

UC Health

- UC operates the largest health sciences instructional program in the nation, enrolling nearly 15,000 students across 18 schools at seven campuses.
- The UC Davis School of Veterinary Medicine ranked No. 1 in the world in 2017, according to QS World University rankings.
- In California, *U.S. News & World Report* ranked four out of five UC medical centers in the top ten in 2017, including the top two: UCSF (1), UCLA (2), UC Davis (5), and UC San Diego (7).
- The University of California system received $1.9 billion in fiscal year 2016 contract and grant funding from the National Institutes of Health, supporting research and training to help understand underlying causes of diseases and develop improved therapies, ranking first in schools of dentistry, medicine, nursing, and pharmacy.

SOURCES OF UNIVERSITY REVENUES

In 2017-18 the University enterprise will generate an estimated $34.5 billion[1] from a wide range of revenue sources for support of the University's operations. (The majority of these resources are designated for specific purposes and not available for components of the University's core mission.) Not only does the University provide instruction for more than 270,000 students and maintain a multi-billion dollar research enterprise, it also engages in a broad range of activities that add to the quality of life on its campuses and provide substantial public benefit, including the operation of teaching hospitals, maintenance of world-class libraries and museums, development of academic preparation programs for California high school students, management of national laboratories, and provision of housing and dining services. Display 12 shows the distribution of major fund sources across the University's budget.

The University's annual budget is based on the best estimates of funding available from each of its primary revenue sources within core funds.

Core Funds

Core funds, totaling $8.3 billion[1] in 2017-18, provide permanent funding for core mission and support activities, including faculty salaries and benefits, academic and administrative support, student services, operation and maintenance of plant, and student financial aid. Core funds represent about 24% of the University's total expenditures and are comprised of State General Funds ($3.2 billion[1]), student Tuition and fee revenue ($3.6 billion), and UC General Funds ($1.5 billion). The latter category includes Nonresident Supplemental Tuition revenue, cost recovery funds from research contracts and grants, patent royalty income, and fees earned for management of Department of Energy laboratories. Display 13 shows the distribution of core funds across major spending categories.

Non-Core Funds

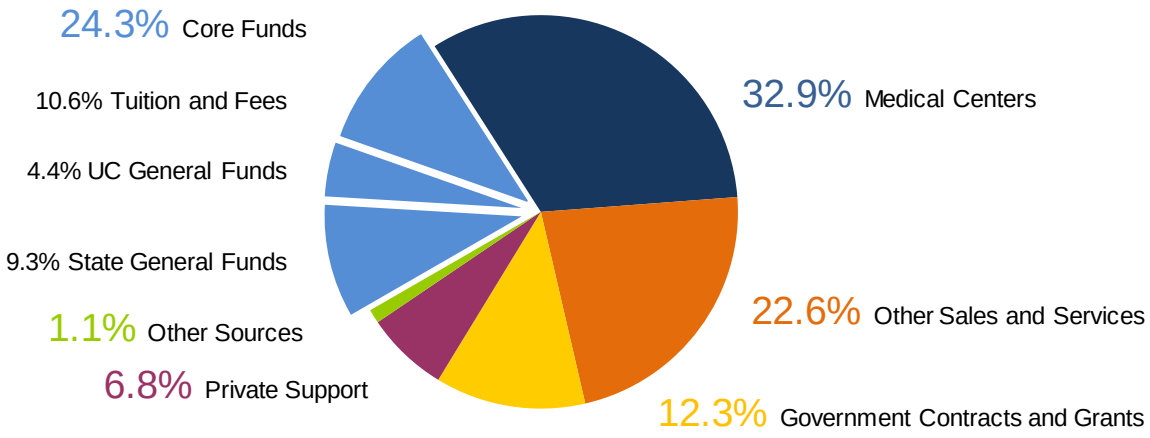
Other sources of funds augment and complement the University's core activities of instruction and research; support ancillary academic and business operations functions; allow UC to provide public service to the state and its people; and support campus learning environments that enhance the vitality, diversity, and robustness of a UC education. Non-core funds cannot be easily redirected to support core mission activities. In the case of gift, grant, and contract funds, uses are usually contractually or legally restricted; funds can be used only for purposes stipulated by the donor or granting agency. For other sources, such as hospital and auxiliary revenues, operations are market-driven and face many of the same cost and revenue pressures occurring in the private sector. Revenues are tied not only to the quality of the services and products being provided, but also to the price the market will bear.

Medical Center Revenue. UC's teaching hospitals generate revenue through their patient-care programs and other activities, primarily from private healthcare plans and government-sponsored Medi-Cal/Medicare programs, all of which is used to support the ongoing needs, both capital and operating, of the medical centers.

Other Sales and Services Revenue. A variety of self-supporting enterprises generate revenue as well, including auxiliary enterprises such as housing and dining services, parking facilities, and bookstores; University Extension; and other complementary activities such as museums, theaters, conferences, and publishing.

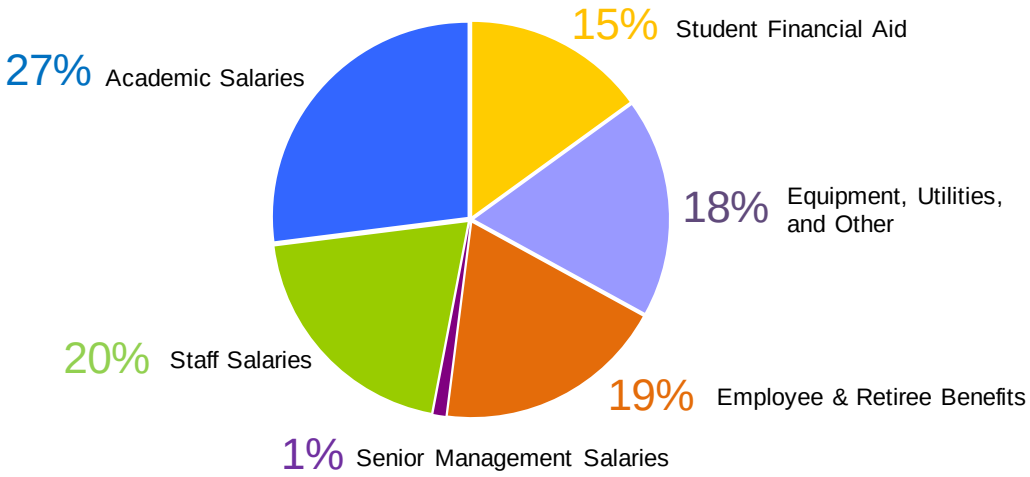
[1]This excludes General Obligation bond debt service and the State's one-time contribution to the University of California Retirement Plan in 2018-19, which are not available for general operating budget purposes.

Display 12: 2017-18 Sources of Funds



UC's $34.5 billion operating budget consists of funds from a variety of sources. State support, which helps attract other dollars, remains crucial and, together with Tuition and fees and UC General Funds, provides the core support for the University's basic operations.

Display 13: 2016-17 Expenditures from Core Funds



Government Contracts and Grants. Federal, state, and local governments directly fund specific research programs, as well as student financial support.

Private Support. Endowment earnings, grants from campus foundations, and other private gifts, grants, and contracts fund a broad range of activities, but are typically restricted by the donor or contracting party.

Other Sources. Revenue from the DOE National Laboratory Management Fee, a portion of contract and grant administration funds, and the portions of federal indirect cost recovery and patent revenue that, by agreement with the State, are not included as part of Core Funds are categorized as "other sources."

UC's Role in the State of California

California's public investment in higher education has fueled economic prosperity, social mobility, and cultural opportunities for decades. The State's historic commitment has enabled the University of California not only to educate the brightest students – an estimated 272,592 students in 2017-18 alone – but to touch the life of every Californian.

- **UC educates the workforce** demanded by high technology, business, agriculture, entertainment, health care, education, and other sectors of the economy.
- **UC conducts research that fuels the State's economy**, creates jobs, increases productivity, and solves state and societal problems, leading to higher standards of living.
- **UC is a key source of innovation and entrepreneurs**, which are essential to the industries that drive California's competitiveness.
- **UC improves the health of Californians** by providing an unmatched combination of state-of-the-art patient care facilities and groundbreaking research programs, which are integrated with the nation's largest medical education program.
- **UC collaborates with K-12 schools** to improve the quality of instruction and expand educational opportunities.
- **UC offers public venues for cultural opportunities**, with dozens of museums, concert halls, art galleries, botanical gardens, observatories, and marine centers that serve as academic resources as well as exciting spaces for broader the community.

Display I-1: UC At-A-Glance

Founded in 1868, the University of California consists of:

- 10 campuses serving an estimated 272,592 FTE students in 790 instructional programs in 2017-18;
- 5 academic medical centers providing 4.5 million outpatient clinic visits each year;
- In 2016-17, a nearly $5 billion research enterprise, seeking new knowledge and solutions to critical problems;
- A network of libraries housing 40 million print volumes, second only to the Library of Congress;
- Approximately 6,000 buildings representing over 137 million gross square feet in 2016-17; and
- As of April 2017, approximately 217,900 employees (or 157,900 full-time equivalent employees) who are employees across the system.

UC's excellence is well-documented by the many honors and awards conferred upon faculty, departments, and campuses. That excellence, in turn, attracts billions of dollars in federal and private funding every year and supports the discovery and dissemination of new knowledge that promotes economic, social, and cultural development.

UC has long been a major contributor to California's vibrancy and strength. To meet the changing needs of future generations, California must continue to invest in the future by supporting its world-class public research university system.

THE STATE'S HISTORIC INVESTMENT IN UC

The University's operating budget, totaling $34.5 billion in 2017-18, funds the core mission responsibilities of teaching, research, and public service, as well as a wide range of support activities, including teaching hospitals, the Lawrence Berkeley National Laboratory, UC Extension, housing and dining services, libraries, and other functions.

State General Funds remain extremely important because they support the University's core instructional mission and make it possible to attract funds from other sources. Other fund sources augment the University's core activities of instruction and research; support academic and administrative functions; allow UC to provide public service to the state and its people; and support rich social, cultural, and learning environments on UC campuses. Each year, UC draws over $8 billion from outside the state and generates more than $46 billion in economic activity. State funds leverage significant private funding – the California Institutes for Science and Innovation, for example, is a unique funding partnership among the State, industry, and UC. This partnership is discussed in more detail in the *Research* chapter of this document.

Although State funding historically represented the largest single source of support for core University operations, fiscal crises that have rocked California since 1990 reduced the State's share of core funding per student by more than half, as described in the *Sources of University Funds* chapter of

THE PURSUIT OF EXCELLENCE

The University of California is internationally renowned for the quality of its academic programs and consistently ranks among the world's leading institutions in the number of faculty, researchers, programs, and campuses singled out for awards and distinctions, election to academic and scientific organizations, and other honors. These include:

- 61 Nobel laureates – more than any other public university – including a 2014 winner of the Physics prize, Shuji Nakamura
- 67 National Medal of Science winners
- 602 UC faculty members have been elected to the National Academy of Sciences, one of the highest honors that can be accorded to a U.S. scientist.
- 540 American Academy of Arts and Sciences members
- More than 200 members of the National Academy of Medicine, formerly known as the Institute of Medicine
- Nearly 1,000 American Association for the Advancement of Science members
- 90 recipients of MacArthur Foundation "genius" grants since the Foundation's inaugural awards in 1981
- 1,669 Guggenheim fellowships since 1930 – more than any other university or college
- More licensable patents secured by UC than by any other U.S. research university over the past two decades.
- Five UC campuses ranked among the top 20 institutions in the nation by *Washington Monthly* 2017 college rankings, which consider social mobility, research, and public service. The San Diego campus was at the top of the list.
- 141 of 322 UC programs in sciences, math, engineering, social sciences, and humanities ranked among the top 10 in their fields by the National Research Council in 2010.
- Five campuses among the top 10 American public universities in the 2018 edition of the *US News and World Report Best College* rankings.
- The medical centers at San Francisco and Los Angeles nationally ranked fifth and seventh, respectively, in *US News'* Honor Roll for the country's top 20 hospitals in 2017-18.
- Three UC campuses appeared in the top 20 of the 2017 Academic Rankings of World Universities by the Shanghai Ranking Consultancy, with UC Berkeley ranking No. 5. Only four public universities in the world appear in the top 20.

this document. In 2011-12 alone, State support for the University's base budget declined by $750 million. Accounting for inflation, enrollment growth that has occurred since 1990-91, and the precipitous decline in State funding, the purchasing power of the State's support has greatly diminished, threatening California's ability to adequately support its world-class, public research university.

Over the last two decades, student tuition and fees and other sources of University general funds, such as nonresident tuition and federal indirect cost recovery, have partly mitigated the impact of declines in State support for UC.

State investment has helped develop the finest public university system in the world. Protecting that investment is essential if UC is to remain among the world's top universities and to continue to provide California with the economic and social benefits that stem from a great institution of research and learning.

UC'S COLLEGE GRADUATES AND THE CALIFORNIA ECONOMY

California's Economic Performance. California has a long history of strong economic performance, including thriving industries and high-paying jobs. California's economy, with a $2.4 trillion GDP in 2015, is the sixth largest in the world behind that of the United States, China, Japan, Germany and the United Kingdom. Additionally, California's real median household income, adjusted for inflation, has exceeded the national average for the last three decades.[1]

California became one of the world's leading economies in the second half of the 20th century in part because it has a high number of excellent research universities and more venture capital dollars per capita than other states, which has helped to create and attract knowledge-based companies. For example, basic research at California's research universities served as the foundation for the biotechnology industry, and UC faculty and former students have founded hundreds of biotechnology companies. UC's discoveries, technology, and graduates

1 U.S. Bureau of the Census, Real Median Household Income in California, retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/MEHOINUSCAA672N.

THE CALIFORNIA MASTER PLAN FOR HIGHER EDUCATION

The Master Plan has served as California's blueprint for higher education for more than 50 years, specifying the mission of each segment of higher education. UC's mission is tripartite:

- **Teaching.** UC serves students at all levels of higher education and is the public segment primarily responsible for awarding doctorate and professional degrees in areas such as medicine and law.
- **Research.** UC is the primary State-supported academic agency for research. Research is inextricably linked with teaching at the graduate level and is increasingly so at the undergraduate level. Research also creates a vital link between UC and the private sector with the development of new knowledge and innovation leading to new industries and jobs.
- **Public Service.** UC contributes to the well-being of communities, the state, and the nation through efforts including academic preparation programs, Cooperative Extension, and health clinics. UC's public service programs allow policy makers to draw on the expertise of UC's faculty and staff to address public policy issues that are of importance to the state and society at large.

are critically important to the success of many knowledge-based companies.

Declining Educational Attainment of the Labor Force. As the state's "baby boomers" retire, they will be replaced by younger workers. These younger workers, however, will have lower educational levels than today's retirees. According to a 2006 report by economists at the California State University (CSU) at Sacramento's Applied Research Center called, "Keeping California's Edge: The Growing Demand for Highly Educated Workers,"

> *"In recent history, California's education pipeline has always assured that the next cohort to enter the labor force would be better educated than current and previous cohorts. Employers could anticipate the ever-improving educational attainment of the labor force. Now, for the first time, projections of California's education pipeline indicate declining labor force quality compared to previous cohorts, which raises questions about our ability to supply the higher-educated labor force of the future."*

Indeed, adults ages 60 to 64 represent the best-educated age group in California today.[2]

The industries that will be driving California's longer-term economic competitiveness will be knowledge-based industries. Professional and managerial jobs, such as financial managers, marketing executives, software developers, engineers, and research analysts, are among California's fastest growing occupations.[3] These jobs typically require at least a bachelor's degree and often a master's or doctorate.

The California Postsecondary Education Commission's 2007 "Public Higher Education Performance Accountability Framework Report" documented that fields in critical need of highly educated professionals include computer occupations, engineering, teaching, nursing, and pharmacy.

In their 2009 report "Closing the Gap: Meeting California's Need for College Graduates," the Public Policy Institute of California (PPIC) described the shortage of college-educated workers facing California. Just as the 2006 CSU report had projected, the PPIC noted that, for the first time, retirees are not being replaced by a more plentiful and better-educated younger workforce. One explanation for this phenomenon is that the retirement of the "baby boomers" represents an unprecedented labor force loss given the exceptional size and educational attainment of this generation, which is not being replicated in younger generations.

Georgetown University's 2010 report, "Help Wanted: Projections of Jobs and Education Requirements through 2018," forecasts that nearly two-thirds of jobs will require postsecondary education by 2018. The 2010 Lumina Foundation report, "A Stronger Nation through Higher Education," similarly shows that while California's percentage of college graduates is above the national average, an annual increase of college graduates of 6.7% is needed to produce enough educated professionals by

2 PPIC. "Will California Run Out of College Graduates?" *Public Policy Institute of California.* October 2015. Web. http://www.ppic.org/main/publication_quick.asp?i=1166

3 Employment Development Department. "Top 100 Fastest Growing Occupations in California, 2014-2024." *State of California.* 2015. Web. http://www.labormarketinfo.edd. ca.gov/OccGuides/FastGrowingOcc.aspx

2025 to meet California's projected workforce needs. A related study conducted by the PPIC in October 2015, "Will California Run Out of College Graduates?," indicates that growth in the number of jobs requiring at least a bachelor's degree will surpass one million by 2030.

UC, CSU, and the California Community Colleges (CCC) each play a critical role in addressing these challenges given the vast numbers of Californians that attend these institutions. As indicated earlier and discussed further in the *General Campus Instruction* chapter of this document, UC has a unique responsibility to help meet the need for technically and analytically sophisticated workers because UC alone is charged by the State with providing educational opportunities within a world-class public research university environment.

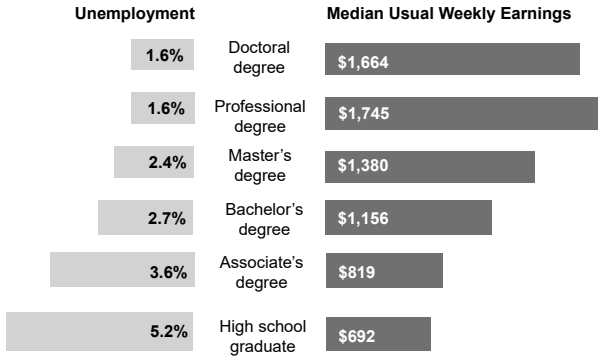
Efforts to Increase College Graduates

The need for more college graduates is evident, and UC is making gains towards meeting this demand. Indeed, UC's fall 2017 incoming class was the largest and most diverse class ever admitted. Among those who enrolled, almost 38% of freshmen and almost 35% of California Community College (CCC) transfers were from historically underrepresented minority groups – African American, American Indian, and Chicano(a)/ Latino(a) – the largest share for an incoming class in UC's history.

Opportunities for students to transfer to the University are growing. Based on preliminary campus 2017-18 enrollment reports, California resident transfers increased by approximately 500 transfers systemwide over 2016-17 (to a record high of over 17,000 transfers). Additionally, the proportion of admitted CCC transfer students from historically underrepresented groups grew from 34.7% in fall 2016 to 35.8% in fall 2017. The proportion of admitted Chicano(a)/Latino(a) students increased by 1.4 percentage points to 29.7% of admitted community college transfers, while the percentage of admitted African American students remained steady at 5.4% (from 5.5% in fall 2016).

In the future, California will also be in need of students with graduate-level training. Recent enrollment trends, efforts to expand transfer enrollment, and the need for more graduate students are discussed in more detail in the *General Campus Instruction* chapter of this document.

Display I-2: Earnings and Unemployment by Level of Education*



Source: Bureau of Labor Statistics, 2017.
*Data are for persons age 25 and older. Earnings are for full-time wage and salary workers.

With the shift to a knowledge-based economy, individual income and employment are more closely linked to level of education. Average earnings are typically higher and unemployment rates are typically lower for those with more advanced levels of education.

Returns on Investment. A more educated population generates more tax revenue and enjoys more rapid economic growth. Additionally, as Display I-2 demonstrates, higher education levels correlate with lower levels of unemployment and higher median earnings, which typically translate into enhanced social mobility. In fact, within five years of graduating from UC, Pell Grant recipients earn an average income higher than their entire parental income during the time they attended UC. Overall, incomes of UC bachelor's degree recipients double between two and ten years after graduation.

A more educated populace greatly benefits California. An April 2012 report from UC Berkeley's Institute for the Study of Societal Issues, "California's Economic Payoff: Investing in College Access and Completion," concludes:

- For every dollar California invests in students who attend college, the state will receive a return on investment of $4.50 through taxing the increased and higher earnings of graduates as well as reducing costs on social services and incarceration.
- By age 38, college graduates have paid back California in full for the state's initial investment in higher education.
- Past graduates of UC and CSU return $12 billion annually to California.

UC'S CONTRIBUTION TO THE STATE ECONOMY

In 2011, UC commissioned a study of its economic contribution to California. Though it is well-established that UC-related economic activity touches every corner of California, making important contributions even in regions without a UC campus, the report quantified many of UC's economic impacts.

- UC generates about $46.3 billion in economic activity and contributes about $32.8 billion to the Gross State Product annually.
- Every dollar the California taxpayer invests in UC results in $9.80 in Gross State Product and $13.80 in overall economic output.
- One out of every 46 jobs in California – approximately 430,000 jobs – is supported by UC operations and outside spending by the University's faculty, staff, students, and retirees.
- UC is the state's third-largest employer, behind only the State and federal governments, and well ahead of California's largest private-sector employers.
- UC attracts about $8 billion in annual funding from outside the state.
- Every $1 reduction in State funding for UC has the potential to reduce State economic output by $2.10 due to ripple effects of UC activities across the entire California economy.
- UC Health — UC's five academic medical centers and 17 health professional schools — plays a major role in the University's economic contribution to California, generating about 117,000 jobs in the state, $16.7 billion in economic activity, and contributing $12.5 billion to the gross state product.

The University of California is an inextricable part of the California economy, touching the lives of all the state's citizens. The fortunes of UC and the State are intrinsically linked: investment in UC on the part of the State represents an investment in California and its citizens, as well. The University of California remains one of the top higher education systems in the world, as a research institution and as an engine of economic growth and social mobility. Investment by the State in UC translates to investment in the future of California.

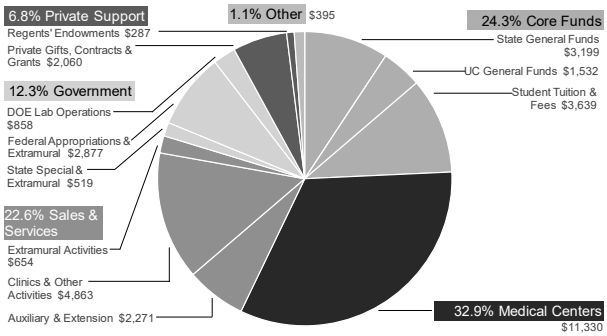
Sources of University Funds

The University's operating revenues, estimated to be $34.5 billion[1] in 2017-18, support its tripartite mission of teaching, research, and public service, as well as a wide range of activities in support of these responsibilities, including teaching hospitals, the Lawrence Berkeley National Laboratory, University Extension, housing and dining services, and other functions. As shown in Display II-1, UC's sources of funds are varied:

- **Core funds**, consisting of State General Funds, UC General Funds, and student tuition and fees, provide permanent funding for UC's core mission and support activities, including faculty salaries and benefits, academic and administrative support, student services, operation and maintenance of plant, and financial aid.
- **Teaching Hospital Revenue**, including patient care service revenue from private health plans, Medi-Cal, and Medicare, and other operating revenues, which provide funding to support medical centers, clinical operations, research, and faculty at the schools of medicine.
- **Sales and services revenues** directly support auxiliary enterprises such as housing and dining services, parking facilities, and bookstores; University Extension; and other complementary activities such as museums, theaters, conferences, and publishing.
- **Government contracts and grants** provide direct support for specific research endeavors, student financial support, and other programs.
- **Private support**, including Regents' endowment payouts; transfers from campus foundations; and other private gifts, grants, and contracts, funds a broad range of activities typically restricted by the donor or contracting party. Private support comes from alumni and friends of the University, foundations, corporations, and through collaboration with other universities.
- **Other sources** include indirect cost recovery funds from research contracts and grants, patent royalty income, and management fees for Department of Energy labs.

The University's annual budget is based on the best estimates of funding available from each of these sources. This chapter presents a digest of major fund sources. Later chapters of this document describe the functional areas in which the University's funds are expended.

Display II-1: 2017-18 Sources of Funds (Dollars in Millions)



UC's operating budget, totaling $34.5 billion[1] in 2017-18, consists of funds from a variety of sources. State support, which helps leverage other dollars, remains critical.

CORE OPERATING FUNDS: GENERAL FUNDS AND STUDENT TUITION AND FEES

The University's "core funds," comprised of State General Funds, UC General Funds, and student tuition and fee revenue, provide permanent support for the core mission activities of the University, as well as the administrative and support services needed to perform them. Totaling $8.4[1] billion in 2017-18, these funds represent 24.3% of UC's total operations. While all fund sources are critical to the success of the University, much of the focus of UC's strategic budget process and negotiation with the State is dedicated to the levels and use of these core fund sources.

State General Funds

State General Fund support for UC totals $3.2[1] billion in 2017-18 and provides critical resources for the University's core mission activities. The majority of State General Funds is undesignated in the State Budget Act. The 2012-13 and 2013-14 Budget Acts eliminated most of the language designating funds for specific programs; however, the University continues to honor commitments made during budget negotiations to target funding for the School of Medicine at the Riverside campus, online education, and a number of other programs.

[1] Excludes $174.7 million of State support dedicated to General Obligation bond debt service and $169 million of one-time support provided in 2017-18 for the University of California Retirement System. This support is not available for current operations.

UC is also maintaining funding levels for most of the programs formerly supported by State Specific Funds.

In addition to funding for basic operations, the State appropriation has also historically included funding for principal and interest payments associated with University facilities financed through purchase agreements with the State Public Works Board. In 2013-14, the State budget provided a mechanism for the University to restructure the debt service associated with the lease-purchase financing of University facilities, creating an opportunity for the University to leverage its strong credit rating to reduce its debt service payments over the next 17 years. The additional State funding made available by the reduced debt service is being used to address operating needs.

The history of State support for UC is described briefly later in this chapter, and in greater length in the *Historical Perspective* chapter of this document.

UC General Funds

In addition to State General Fund support, certain other fund sources are unrestricted and expected to provide general support for the University's core mission activities, based on long-standing agreements with the State. Collectively referred to as UC General Funds, these include:

- Nonresident Supplemental Tuition,
- a portion of indirect cost recovery on federal and State contracts and grants,
- fees for application for admission and other fees,
- a portion of patent royalty income, and
- interest on General Fund balances.

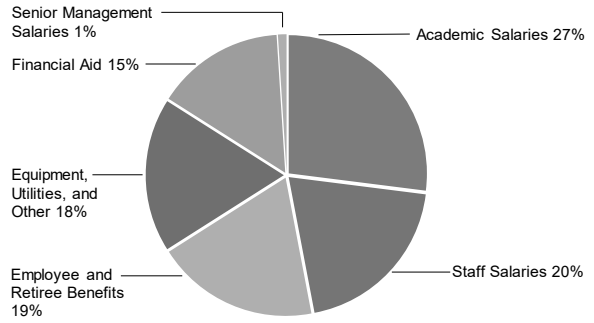
The University expects to generate $1.5 billion in UC General Funds during 2017-18. The largest sources of UC General Funds are Nonresident Supplemental Tuition ($1.1 billion) and indirect cost recovery on federal contracts and grants ($320.6 million).

Student Tuition and Fees

Also included in the core funds category are revenues generated from three student fees:

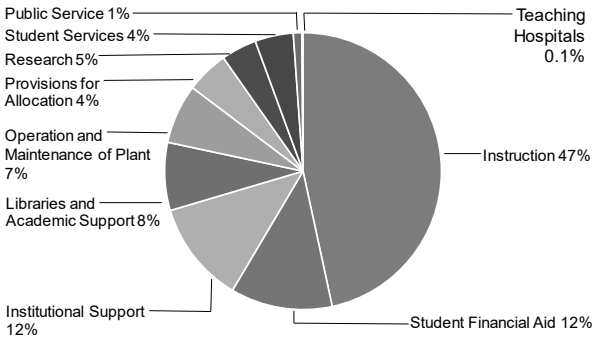
- Tuition revenue supports the University's operating costs for instruction, libraries, operation and maintenance of plant, student services, student financial aid, and institutional support. During 2017-18, Tuition is $11,502 and will generate an estimated $3.0 billion.

Display II-2: 2016-17 Core Funds Expenditures by Type



Two-thirds of core funds support academic and staff salaries and benefits.

Display II-3: 2016-17 Core Funds Expenditures by Function



Nearly half of core funds are spent on general campus and health sciences instruction.

- Student Services Fee revenue provides funding for student life, student services, and other activities that provide extracurricular benefits for students, as well as capital improvements for student life facilities. The Student Services Fee, currently set at $1,128, will generate an estimated $276 million during 2017-18.
- Professional Degree Supplemental Tuition revenue helps fund instructional costs associated with the professional schools, including faculty salaries, instructional support, and student services, as well as student financial support. Professional school fees may vary depending on the program, campus, and student residency status and are expected to generate $315 million in 2017-18.

These and other UC student fees are discussed in detail in the *Student Tuition and Fees* chapter of this document.

Historical Changes in State Funds Support

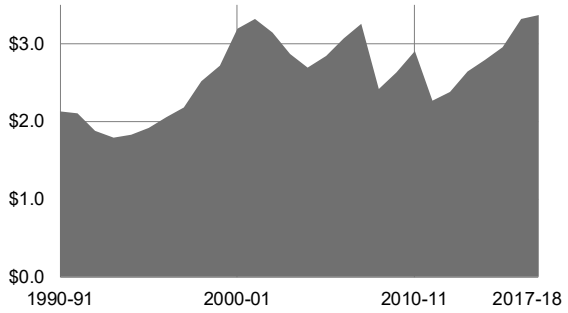
State funds represent a critical investment from California taxpayers that also enable the University to attract funds from other sources. Each year, UC attracts approximately $8 billion from outside the state and generates more than

$46 billion in economic activity in California.

State funding for UC has fluctuated over time, as shown in Display II-4. Funding increases and reductions have largely coincided with changes in the state's economy. Since 1990-91, State funding for the University of California has been marked by dramatic reductions due to recurrent fiscal crises followed by temporary increases tied to ambitious plans to restore support.

- In the early 1990s, the University lost the equivalent of 20% of its State support.
- Later in the decade, under agreements with Governors Wilson and Davis, significant funding increases were provided for enrollment growth, to avoid student fee increases, and to maintain quality.
- Another State fiscal crisis during the early 2000s meant a significant step back in State support during a time of rapid enrollment growth.
- Beginning in 2005-06, UC entered into a six-year Compact with Governor Schwarzenegger to provide the minimum resources needed for the University to accommodate enrollment growth and sustain the quality of the institution. From 2005-06 through 2007-08, the Compact served the University, students, and the State well, allowing UC to continue enrollment growth, provide compensation increases for faculty and staff, and avoid a student fee increase in 2006-07.
- The State's ongoing budget shortfalls, compounded by the global financial crisis, led to the dissolution of the Governor's Compact and significant reductions in State support in 2008-09. For two years, no funding was provided for enrollment growth at a time when demand for UC was soaring. Federal economic stimulus funds provided temporary support.
- In 2011-12, due to the lingering effects of the recession and ongoing State structural deficit, State funding for UC was cut by $750 million, leaving the University's State support more than $1.6 billion less than it would have been under the prior agreement.
- In 2012-13, the University received a $105.9 million increase in its State funding. This augmentation, though modest, is noteworthy given the State's continuing $15.7 billion budget shortfall at the time and the fact that nearly every other agency took cuts. The State directed most of the increased funding to cover a portion of the State's share of UC's retirement costs. This was the first time since the State stopped making contributions to UCRP in the early 1990s that the State acknowledged its responsibility to contribute to UC's retirement costs, as it has always done for the California State University and California Community Colleges.

Display II-4: State General Fund Support (Dollars in Billions)



State support for UC has fluctuated over time, coincident with the state's economy. The past decade has been particularly volatile for the State and the University.

- With passage of Proposition 30, the Governor's revenue enhancement initiative, in November 2012 and an improving economy, UC faced the prospect of a more stable State funding environment for the first time in five years. The 2013-14 State budget provided the University with $256.4 million in new State funding available for operating needs, including $125 million for a deferred 2012-13 tuition buy-out, $125.1 million for a 5% base budget adjustment, and $6.4 million for annuitant benefit costs. The budget also included the shift of $200.4 million of general obligation bond debt service to UC's base budget. This funding is not available for UC's operating needs.
- Beginning in 2015-16, the State agreed to contribute $436 million in one-time Proposition 2 funds payable over a three year period towards the University's unfunded retirement liabilities following UC's implementation of a pensionable salary cap consistent with the State's Public Employee Pension Reform Act.
- The State also provided funding of $25 million in 2015-16 for enrollment of an additional 5,000 undergraduate resident students by 2016-17, and $18.5 million in 2016-17 for an additional 2,500 undergraduates by 2017-18.
- The 2017-18 budget year marked the fifth year of the Governor's multi-year plan for UC, and included a $131.2 million base budget adjustment proposed by the Governor, $5 million to increase graduate enrollments by 500 in 2017-18, and $175.6 million in one-time funds, including $169 million to be used to address a portion of the unfunded liability associated with the University of California Retirement Plan.

Despite periods of uncertain State funding, the University accepted the challenge to accommodate growing numbers of students prepared for and seeking a quality university education, and succeeded in enrolling many more students. Undergraduate California resident enrollment in 2017-18 is

more than 60% above 1990-91 levels while State support for UC has declined by 17% in inflation-adjusted dollars.

While funding from the State increased by nearly 60% during the period from 1990-91 through 2017-18, the University's share of the total State General Fund budget declined markedly (see Display II-5). In 1990-91, the State dedicated 5.3% of the State General Fund to the University. Today, funding for UC represents just 2.7% of the State budget. Other State operations have taken increasingly larger shares. In 1990-91, for example, the State's corrections budget was less than support for UC alone. Today, the Department of Corrections budget exceeds State support for UC, CSU, and the community colleges combined.

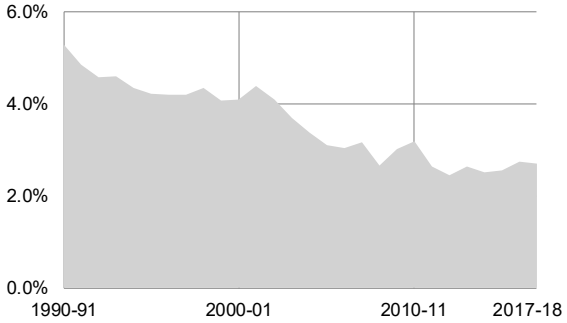
Another critical issue for the University is the degree to which funding has kept pace with the costs of providing postsecondary instruction as they rise with inflation as measured by the Higher Education Price Index (HEPI).

The University has fared better in some years and worse in others when compared to inflation, but until 2000-01, total core funding generally kept pace with inflation. After 2000-01, the University experienced a precipitous decline over several years in funding per student when compared to HEPI. The importance of sufficient funding to maintain quality cannot be overstated.

Underlying the level of core funding, however, is the shift in the composition of that funding among State support, UC General Fund sources, and student tuition and fees. Display II-7 shows the core funding components of UC expenditures for education in HEPI-adjusted dollars and yields several key findings:

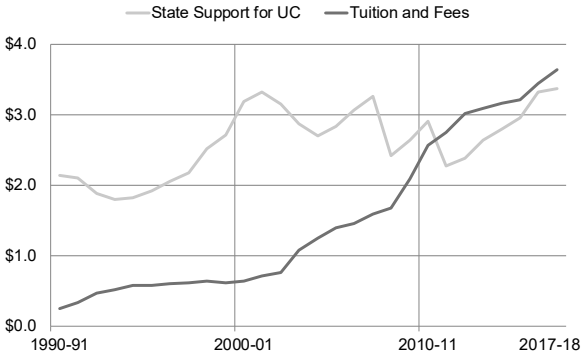
- The average expenditure per student for a UC education has declined by 23% over 25 years – from $24,410 in 1990-91 to an estimated $18,780 in 2016-17.
- State support for the University's base budget declined by 63% during the same period. In 1990-91, State funding for UC contributed $19,100 per student – 78% of the total cost. In 2016-17, the State share declined to $7,160, just 38% of the total funding for education.
- As the State subsidy has declined, the importance of revenue derived from tuition and fees has grown. In 1990-91, tuition and fees represented only 11% of expenditures for education compared to 33% in 2016-17.

Display II-5: UC Share of Total State General Funds



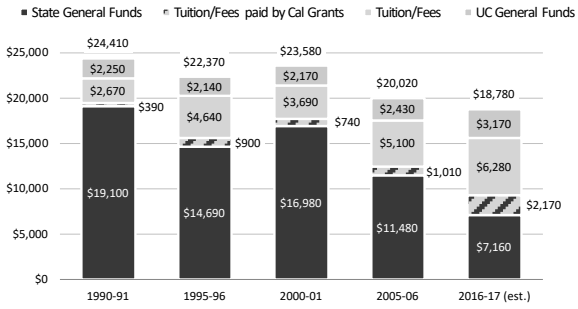
UC's share of the total State budget has declined over time. In the late 1990s, more than 4% of the State General Fund was dedicated to UC. In 2017-18, the UC share was 2.7%.

Display II-6: State Support versus Student Tuition and Fee Revenue (Dollars in Billions)



While State support has fluctuated, tuition and fees have become a larger share of UC's core funds budget. In 2011-12, for the first time, tuition and fee revenue exceeded State support for the University's budget.

Display II-7: Per-Student Average Expenditures for Education (2016-17 Est. Dollars)



Since 1990-91, average inflation-adjusted expenditures for educating UC students have declined. The State-funded share has declined even more rapidly, with student-related charges playing a larger role. Figures are inflation-adjusted resources per general campus student, net of financial aid.

These findings raise additional points. First, although the University has struggled to meet the challenge presented by a long-term decline in State funding, elements of the educational, research, and public service functions have been compromised to preserve the core missions of the University. While the University has been able to reduce some costs through efficiencies, other austerity measures have impacted the quality of a UC education. Examples include higher student-faculty ratios; faculty and staff salary lags; reduced purchases of instructional equipment and library materials; greater deferred maintenance; and less investment in teaching classrooms, laboratories, and other facilities.

Second, national news coverage about skyrocketing costs of college attendance masks what has really happened at UC. Expenditures per student have fallen, not increased, in inflation-adjusted dollars. Tuition and fees paid by students have risen as a response to reduced funding from the State. Most tuition increases over the last thirty years have been implemented to offset cuts in State support during the four major economic downturns in the State since 1980. Historically, student tuition and fee increases have helped maintain quality, but they have not fully compensated for the loss of State funds. Under better circumstances, had the State subsidy not declined, student tuition and fees would have remained low.

Third, despite rising student fees, UC has successfully maintained student access and affordability. While tuition and fees have increased, significant increases in financial aid from both the University's financial aid programs and State financial aid programs have helped to ensure access for low- and middle-income students.

TEACHING HOSPITALS

The University's academic medical centers generate three types of revenue:

- **Patient service revenues** are charges for services rendered to patients at a medical center's established rates, including rates charged for inpatient care, outpatient care, and ancillary services. Major sources of revenue are government-sponsored health care programs (i.e., Medicare and Medi-Cal), commercial insurance companies, managed care and other contracts, and self-paying patients.
- **Other operating revenues** are derived from non-patient care activities of the medical centers, such as cafeteria sales and parking fees.
- **Non-operating revenues** result from activities other than normal operations of the medical centers, such as interest income and salvage value from disposal of a capital asset.

Medical center revenues are used for operating expenses, including salaries and benefits, supplies and services, workers' compensation and malpractice insurance, and other expenditures. Remaining revenues are used to meet working capital needs, fund capital improvements, and provide a reserve for unanticipated downturns.

Expenditures of hospital income for current operations are projected to total $11.3 billion during 2017-18. The *Teaching Hospitals* chapter discusses actions taken to address the challenges confronting the medical centers.

SALES AND SERVICES REVENUES

Revenues from self-supporting enterprises represent $2.3 billion, or 22% of the University's 2017-18 budget. Such enterprises include the University's educational activities, including health clinics; auxiliary enterprises such as housing and dining services, parking facilities, and bookstores; University Extension; and other complementary activities such as museums, theaters, conferences, and scholarly publishing. Net revenues from these activities are restricted, and dependent upon the quality of the direct services and products being provided as well as the prices that the market will bear.

Auxiliary Enterprises

Auxiliary enterprises are non-instructional support services provided primarily to students, faculty, and staff. Programs include student residence and dining services, parking, bookstores, faculty housing, and a portion of intercollegiate athletics or recreational activities on some campuses. No State funds are provided for auxiliary enterprises; revenues are derived from fees directly related to the costs of goods and services provided. Total expenditures for auxiliary enterprises are projected to be $1.3 billion in 2017-18.

University Extension, Other Self-Supporting Instructional Programs, and Other Campus Fees

In addition to the tuition and fees charged for full-time degree programs, the University also generates fee

revenue from enrollment in University Extension courses and self-supporting instructional programs, and enrollment of non-UC students in summer instruction. These programs are entirely self-supporting; they receive no State funding, and fees are charged to cover the full cost of offering the courses and programs. Programs are dependent upon user demand. Campuses also charge fees for a variety of student-related expenses not supported by mandatory systemwide tuition and fees, such as student health insurance fees, course materials and service fees. Revenue from University Extension, other self-supporting instructional programs, and other campus fees is projected to be $981 million in 2017-18.

Educational and Support Activities

Revenue from sales and services of educational and support activities is projected to total $4.7 billion in 2017-18. This includes revenue from the health sciences faculty compensation plans and a number of other sources, such as neuropsychiatric hospitals, the veterinary medical teaching hospital, dental and optometry clinics, fine arts productions, museum ticket sales, publication sales, and athletic facilities users. Similar to auxiliary enterprises and teaching hospitals, revenues are generally dedicated to support the underlying activity.

GOVERNMENT CONTRACTS, GRANTS, AND AGENCY APPROPRIATIONS

Contract and grant activity generates about $4.3 billion annually in revenue for the University and plays a key role in the University's position as a major driver of the California economy. Government sources, including the Department of Energy (DOE) and other federal agencies, state agencies, and local governments, are significant providers of contract and grant funding. Contract and grant activity that is codified in legislation or based on long-standing agency agreements is permanently budgeted. In addition, non-permanent extramural funds are provided for specified purposes. The majority of this funding supports research, including salaries, benefits, equipment, subcontracts, and student financial aid.

Federal Funds

Federal funds provide support for UC in three primary areas: research contracts and grants, student financial aid, and health care programs.

Display II-8: Estimated 2016-17 Federal Support for UC and UC Students (Dollars in Millions)

Program Support	
Research Grants and Contracts	$2,089.4
Indirect Cost Recovery	$762.6
DOE National Laboratory Operations	$771.6
DOE Laboratory Management Fees	$28.7
Other Contracts and Grants	$264.7
Student Financial Aid	
Pell Grants	$380.6
Other Undergraduate Grants and Scholarships	$12.4
Graduate Fellowships and Scholarships	$83.8
Student Loans	$1,118.7
Work-Study	$23.7
Patient Care	
Medicare	$2,300.0
Medicaid	$2,000.0
Estimated Total Federal Support	$9,836.4

Federal funds are the University's single most important source of support for research, generating $2.9 billion and accounting for nearly 48% of all University research expenditures in 2016-17. While UC researchers receive support from virtually all federal agencies, the National Institutes of Health and the National Science Foundation are the two largest sponsors, accounting for nearly 80% of UC's federal research contract and grant awards in 2016-17. Although Federal funds for UC research have grown significantly over the last two decades, the fiscal year 2013 sequestration and other constraints on federal spending, including cuts required by the 2011 Budget Control Act, have resulted in declines or stagnation of federal research funding available to the University. Federal discretionary funding for 2014 and 2015 was stabilized by the Bipartisan Budget Act of 2013, and has resulted in some recovery in research funding over the previous year. More recently, the Bipartisan Budget Act of 2015 provides two more years of partial relief from sequestration cuts. However, unless new legislation is enacted, UC continues to face the prospect of lower federal award funding because sequestration cuts will resume in fiscal year 2018 through 2021 for discretionary programs, and through 2025 for some mandatory programs. Research spending at UC has remained flat over the past few years.

Indirect cost recovery (ICR) funding reimburses the

University for facilities and administration costs associated with research activity that cannot be identified as solely benefiting a particular contract or grant. During 2016-17, indirect cost recovery funding from federal contract and grant activity was about $762.6 million and was dedicated to support contract and grant administration, core mission activities (in the form of UC General Funds), and special programs. Federal research funds are discussed in more detail in the *Research* chapter of this document. The University is working to recover more of its indirect costs from research sponsors by increasing its negotiated federal rates and improving waiver management. During the past five years, nearly all of the campuses negotiated increases of 2-3% on average in the ICR rate, but this has only partially mitigated declines in federal research funding.

In addition to research contracts and grants, federal funds entirely support the Lawrence Berkeley National Laboratory, for which UC has management responsibility. This support is projected to be $858 million in 2017-18.

Federal student aid programs represent the single largest source of financial aid for UC students. Federal loan programs are available to assist both undergraduate and graduate UC students. In addition, needy students are eligible for federally-funded grant programs such as Pell Grants, and they may seek employment under the Federal Work-Study Program, through which the federal government subsidizes 50-100% of a student employee's earnings. Graduate students receive fellowships from a number of federal agencies, such as the National Science Foundation and the National Institutes of Health. The *Student Financial Aid* chapter of this document provides additional detail.

Finally, as mentioned earlier, federally-supported health care programs provide significant funding to the University's medical centers for patient care through Medicare and Medi-Cal, totaling $4.3 billion in 2016-17.

State Agency Agreements

Similar to federally-sponsored research, California State agencies provide contracts and grants to the University for a variety of activities. The largest area is research, but these agreements also support public service and instruction. These agreements are expected to generate

FEDERAL INDIRECT COST REIMBURSEMENT

All federal contract and grant activity generates costs which are divided into two basic categories — direct and indirect. Direct costs are those expenditures that can be identified as directly benefiting and directly charged to a specific contract or grant. Indirect costs are those expenses which cannot be specifically identified as solely benefiting one particular contract or grant, but instead are incurred for common or joint objectives of several contracts or grants. Because these costs are not charged against a specific contract or grant, indirect costs initially must be financed by University funds, with reimbursement based on rates negotiated for each campus later provided by the federal government.

The University has an agreement with the State regarding the disbursement of federal reimbursement. Pursuant to this agreement, the first 19.9% of the reimbursement accrues directly to the University for costs of contract and grant administration in campus-sponsored project offices, academic departments, and research units. This is the source of the University's Off-the-Top Fund, estimated to be $100 million in 2017-18.

The remaining 80% of the federal reimbursement is split into two funds. The first 55% (estimated to be $320.6 million in 2017-18) is budgeted as UC General Funds. It is used, along with State General Funds and student tuition and fee revenue, to help fund the University's basic budget.

The remaining 45% is the source of the University Opportunity Fund (estimated to be $242.0 million in 2017-18). This is used to make strategic investments in University and campus priorities, such as enhancing faculty recruitment packages through laboratory alterations, equipment purchases, and support for graduate student researchers; providing innovative instructional programs; and augmenting funding for capital outlay.

In 1990, the State approved legislation (SB 1308, Garamendi) authorizing the use of indirect cost reimbursement for the acquisition, construction, renovation, equipping, and ongoing maintenance of certain research facilities and related infrastructure. Under the provisions of the legislation, the University is authorized to use the reimbursement received as a result of new research conducted in, or as a result of, the new facility to finance and maintain the facility.

Effective 2011-12, each campus retains all the indirect cost recovery funding generated by research activity at the campus. A discussion of efforts to improve indirect cost recovery is included in the *Research* chapter of this document.

$319 million in revenue for the University during 2017-18. Major providers of State agency agreements are the health care services, social services, transportation, food and agriculture, and education departments. Indirect cost recovery on State agency agreements is treated as UC General Fund income and supports the University's core mission activities. Historically, ICR rates on State agency contracts have been very low, based on the assumption that the State has covered these indirect costs through its support for UC operations and campus investments. As State support, including capital investment, decreases, UC may need to seek to recover more of its indirect costs on State contracts.

State Special Funds

In addition to State General Fund support and State agency contracts, UC's budget for 2017-18 includes a total of $200.3 million in appropriations from State special funds, as shown in Display II-9.

Display II-9: 2017-18 State Special Funds by Revenue Source (Dollars in Millions, unless otherwise noted)

Research and Prevention Tobacco Tax Act of 2016	
Medical Research of Tobacco-related diseases	$82.0
Graduate Medical Education Programs	$50.0
California State Lottery Education Fund	
Instructional Activities and Programs	$36.2
Cigarette and Tobacco Products Surtax Fund	
Research of Tobacco-related diseases	$10.1
Breast Cancer Research	$7.3
Other State Special Funds	
Road Maintenance and Rehabilitation	$5.0
Oil Spill Response Trust Fund	$2.5
Umbilical Cord Blood Collection Program	$2.5
Health Care Benefits Fund	$2.0
Earthquake Risk Reduction Fund	$1.0
Other Funds less than $1M (in $'000's)	
Public Transportation Account	$980
California Cancer Research Fund	$425
Type I Diabetes Research Fund	$250
Total State Special Funds	$200.3

ENDOWMENT EARNINGS AND PRIVATE GIFTS, GRANTS, AND CONTRACTS

Private funds include endowment payout as well as gifts, grants, and contracts. The Regents' endowment annually provides support for a wide range of activities. Gifts and private grants are received from alumni, friends of the University, campus-related organizations, corporations, private foundations, and other nonprofit entities, with foundations providing nearly half of total private gift and grant support. Private contracts are entered into with for-profit and other organizations to perform research, public service, and other activities.

Endowments

Combined Regents' and campus foundation endowments were valued at approximately $16.7 billion as of June 30, 2017. Payments from the Regents' General Endowment Pool (GEP), computed as a trailing five-year moving average, resulted in distributions approximately equal to those from 2015-16.

Expenditures of endowment payouts support a range of activities, including endowed faculty chairs, student financial aid, and research. Approximately 90% of UC's overall endowment is restricted, however, limiting its use. This is higher than the comparable percentages for most public institutions (80%) and private institutions (55%), on average.

In 1998-99, the Regents approved a payout rate based on the total return of the GEP over the previous 60 months, with a long-term target rate set at 4.75%. This policy is intended to smooth annual payouts and avoid significant fluctuations due to market conditions.

Payouts from the Regents' endowments are permanently budgeted, while payouts from campus foundations are recorded as extramural (non-permanent) private grants. In 2016-17, the expenditure of the payout distributed on endowments and similar funds was $321.7 million from the Regents' endowments and approximately $263 million from campus foundations. Payouts in 2017-18 are expected to be slightly higher than those in 2016-17.

Private Support: Gifts and Grants

Private funds, even gift funds, are typically highly restricted by funding source and provide support for instruction, research, campus improvements, and student financial support, among other programs. In 2016-17, approximately 99% of new gifts received by UC were restricted in their use.

Since 1990, the value of private gifts and grants received by the University has increased substantially. In 2016-17, new gifts and private grants to the University surpassed $2.1 billion. Approximately $434.2 million of this total was designated for endowments, which can be expected to generate stable future funding but which are unavailable for current expenditure. Health science disciplines receive nearly half of all private support. 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 in philanthropy among the nation's public colleges and universities, and the high regard in which its alumni, corporations, foundations, and other supporters hold the University.

Private Contracts

In 2016-17, revenue attributed from private contracts totaled $832 million, an increase of 8.3% over 2015-16. Over the last ten years, awards have increased by 42% in inflation-adjusted dollars, making private contracts an increasingly important source of University funding. These contracts, which primarily support research purposes, include clinical drug trials with pharmaceutical and health care organizations, as well as agreements with other agencies, including institutions of higher education.

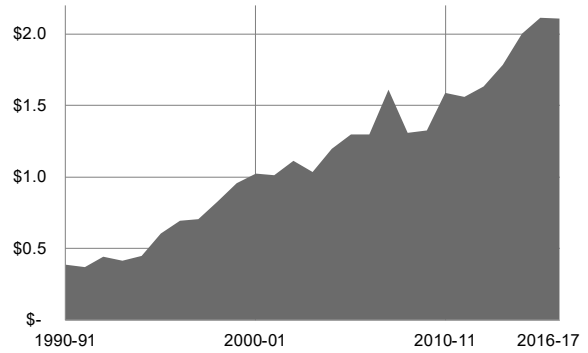
OTHER FUND SOURCES

DOE National Laboratory Management Fee Revenue

As compensation for its oversight of the DOE National Laboratories at Berkeley, Livermore, and Los Alamos, the University earns management fees which can be used to support other activities. Performance management fees from Lawrence Berkeley National Laboratory (LBNL) are gross earned amounts before the University's payments of unreimbursed costs. By contrast, net income from the Los Alamos National Security LLC (LANS) and Lawrence Livermore National Security LLC (LLNS) reflects net share of fee income remaining after payment of unreimbursed costs at the two laboratories and shares to other owners. For 2017-18, UC's estimated share of income from LANS and LLNS is $22.0 million.

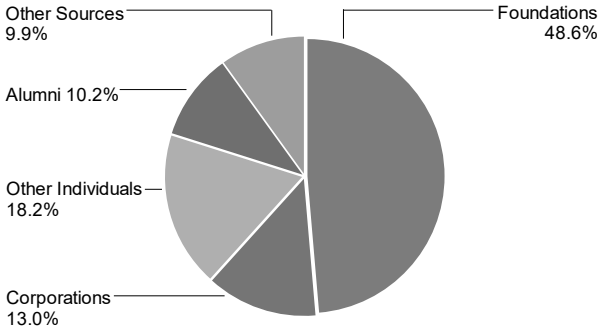
Management fee revenue related to LBNL is used for costs of oversight, research programs, reserves for future claims, and unallowable costs associated with LBNL. Per Regental approval, revenue from LANS and LLNS will be used to provide supplemental income to select LANS employees, to cover unreimbursed oversight and post-contract costs, and to support a variety of University research programs.

Display II-10: Private Gift and Grant Support (Dollars in Billions)



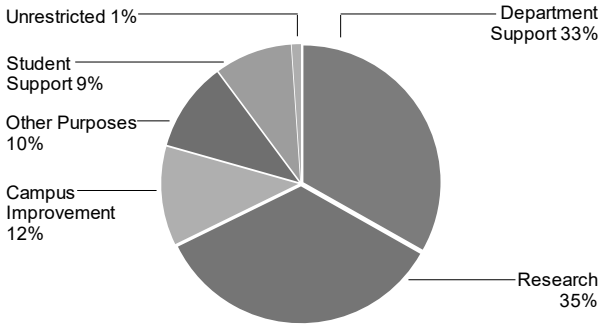
In 2016-17, gifts and pledge payments totaled $2.1 billion.

Display II-11: 2016-17 Private Gift and Grant Support by Source



More than half of gift and grant support to the University is provided by foundations and corporations.

Display II-12: 2016-17 Private Gift and Grant Support by Purpose



Academic departments and research receive two-thirds of private gift and grant support.

Further information about DOE Laboratory Management activity and revenue can be found in the *Department of Energy – Office of the National Laboratory* chapter of this document.

Intellectual Property Royalty Income

Income derived from royalties, fees, and litigation recovery, less the sum of payments to joint holders, net legal expenses, and direct expenses, is distributed to various stakeholders according to the University Patent Policy and campus policies. Patent income fluctuates significantly from year to year and budget estimates are based upon historical trends. This revenue appears in the University budget in two categories: as a component of UC General Funds and as part of Other Funds. Income distributions after mandatory payments to joint holders and law firms (for legal expenses) were $114.7 million in 2015-16, the most recent year for which data are available. While 2,153 inventions generated royalty and fee income, the 25 most profitable inventions collectively accounted for more than 72.2% of total revenues.

- **Inventor Shares:** The University Patent Policy grants inventors the right to receive a percentage of net income accruing to individual inventions. The terms of the inventor share calculations are established in the Patent Policy. In 2015-16, 2,206 inventors received $62.8 million.
- **General Fund Share:** In 2015-16, the portion of net income allocated to the UC General Fund was $12.3 million, equal to 24% of the amount remaining after deducting payments to joint holders, legal expenses, and inventor shares (excluding inventions managed by LBNL).
- **Research Allocation Share:** For inventions covered by the 1997 Patent Policy, 15% of net income from each invention is designated for research-related purposes at the inventor's campus or Laboratory. This allocation totaled $12.2 million in 2015-16.
- **Income after Mandatory Distributions:** All income remaining after deductions and other distributions is allocated to the campuses. These funds, totaling $21.3 million in 2015-16, are used by the chancellors to support education and research priorities.

Cross-Cutting Issues

Several of the University's budget issues cut across multiple areas. This chapter provides detailed information about several of these cross-cutting issues for 2017-18: the budget framework established between the University and the Governor, Presidential initiatives, University quality, and diversity.

A STABLE BUDGET FRAMEWORK

In May 2015, the University and the Governor established a multi-year budget framework, which provides much appreciated financial stability and includes programmatic initiatives and efficiencies that reflect a shared goal of enhancing the educational experience at UC. Elements of the framework are described below.

Annual increases in State funding. In 2013, the Governor proposed regular annual increases in direct appropriations to the University of 5% in 2013-14 and 2014-15 and 4% in 2015-16 and 2016-17. As part of the budget framework agreement, the Governor committed, subject to agreement with the Legislature each year, to extend the 4% increases for two additional years, through 2018-19, giving the University predictability in its fiscal outlook. This represents a total increase in State funds of more than $500 million in UC's base budget over a four-year period.

One-time funding for deferred maintenance. The 2015-16 and 2016-17 budgets included one-time funding, $25 million and $35 million respectively, to support high-priority deferred maintenance needs across the University's ten campuses.

Modest and predictable tuition increases. UC agreed to continue to freeze Tuition at 2011-12 levels for the 2015-16 and 2016-17 academic years. Beginning in 2017-18, the framework provides for predictable Tuition adjustments, pegged generally to the rate of inflation. It also provides that the Professional Degree Supplemental Tuition (PDST) and Student Services Fee plans adopted by the Regents at their November 2014 meeting will remain in effect, except that PDST for the University's four law schools will remain at 2014-15 levels through 2018-19.

Shared commitment to addressing UC's long-term pension liability. The Governor agreed to provide, subject to the Legislature's approval, a total of $436 million in one-time funding over three years to address a portion of UC's pension obligations: $96 million in 2015-16, followed by $171 million in 2016-17 and $169 million in 2017-18. This funding is derived from Proposition 2 funds, which the State Constitution specifies must be supplemental, above contribution rates approved by the Regents, and used to help pay down the University of California Retirement Plan's unfunded liability. This funding was contingent upon UC's implementation of the State's Public Employee Pension Reform Act's pensionable salary cap, effective for new hires on or after July 1, 2016. The University implemented this change as approved by the Regents at the March 2016 Board meeting and thus met the requirement for receipt of these funds.

Academic Initiatives. The framework included 13 performance-related provisions involving delivery of academic programs. They are organized into three broad categories:

- An enhanced commitment to the transfer function;
- Innovations to support student progress and improve time-to-degree, and
- Innovations in the use of technology and data analytics to understand instructional cost and improve student outcomes.

Through the work of the faculty, campuses, and Office of the President staff, the University has made substantial progress on these initiatives, having fulfilled agreements for ten and being on or ahead of schedule for the remaining three. Progress on each of the elements is outlined below.

An enhanced commitment to the transfer function. Under the leadership of the systemwide Academic Senate Chair and Vice Chair, UC faculty developed **Transfer Pathways for ten majors in spring 2015 and another 11 majors in fall 2015**. These 21 majors are the most popular for transfer applicants across the system. Each pathway provides a single set of courses that California community college students can take to prepare for the major on all campuses that offer it. More information about these

pathways can be found at the following site: http://admission.universityofcalifornia.edu/transfer/preparation-paths/index.html.

In addition, the University has committed to **increasing the proportion of California undergraduates entering as community college transfers**, so that by the 2017-18 academic year, assuming the presence of a sufficiently qualified transfer applicant pool, one-third of all incoming California resident undergraduate students will enter as transfers systemwide and at every campus except Merced. In 2016-17, the systemwide ratio, excluding UC Merced, was 2.20 freshmen to transfers and three campuses – Davis, Los Angeles, and San Diego – had met the 2:1 goal with ratios below 2.0. The range for other UC campuses, excluding Merced, was 2.04 freshmen to transfers for UC Berkeley to 4.49 freshmen to transfers for UC Riverside. For the 2016-17 and 2017-18 academic years, the University took important steps to advance this goal, including extending the application deadline for transfer applicants in order to increase the applicant pool and setting aggressive transfer enrollment targets for each undergraduate campus. Based on preliminary campus 2017-18 enrollment reports, California resident transfers increased by approximately 500 transfers systemwide over the prior year (to a record high of over 17,000 transfers). Early estimates suggest that the University will achieve the 2:1 ratio at Berkeley, Davis, Los Angeles, San Diego, and Santa Barbara by the end of the 2017-18 academic year, and will also achieve the 2:1 ratio at the systemwide level (excluding Merced).

The framework agreement also called on the University administration to request that the Academic Senate **examine the State's Common Identification Numbering (C-ID) system**. President Napolitano sent a letter to then-Academic Senate Chair Dan Hare in September asking the Senate to "examine adoption of the C-ID system to further simplify identification of similar courses across the University's undergraduate campuses and transferable courses at California Community Colleges." The topic was discussed by the Academic Senate at various leadership meetings in fall 2015. Senate Chair Hare forwarded the President's letter to the appropriate systemwide Academic Senate committees, and they have been investigating the extent to which a unique set of C-ID numbers can be used to facilitate UC's process of confirming transferable courses related to the UC Transfer Pathways already in place. The University administration's work on this academic element is complete and it is under consideration by the Academic Senate, which is responsible for the final decision.

Innovations to support student progress and improve time-to-degree. The framework agreement called for the University to **review upper-division major requirements** for attaining undergraduate degrees for the top 75 percent of undergraduate majors, with the goal, where possible, of reducing the number of units needed to complete these requirements to the equivalent of a full year of academic work by July 1, 2017. The Office of the President identified the top 75 percent of majors on each campus and confirmed the list with each campus. Faculty at every UC campus have conducted a thorough review of close to 650 majors in order to ensure that programs effectively and efficiently prepare students well for work or graduate study. Faculty recommended changes to 211 majors, all of which were approved by the campuses. Changes to 206 of these majors have also been approved by the campus Academic Senates, with the remaining five still pending Senate review.

The University also committed to **identifying three-year degree pathways** for at least ten of the top 15 undergraduate majors on each undergraduate campus (except Merced) by March 1, 2016, and promoting these pathways for use by students where appropriate, with a goal that 5% of students will have accessed these accelerated tracks by summer 2017. The top 15 majors for which a three-year pathway to the degree could be developed at each campus were identified by the Office of the President and confirmed by the campuses. Given its much lower number of majors, Merced was responsible for developing three-year pathways for three of its top five majors. By March 1, 2016, faculty on all undergraduate campuses had completed the major pathways for at least the number of majors for which they were responsible. Specifically, the requirement was three majors for Merced and ten majors for the other eight undergraduate campuses. Seven of the campuses exceeded the number required. All three-year degree pathways are now listed and

described on campus websites. Campuses have implemented a process to assess the percent of UC freshmen who accessed the accelerated tracks to graduation by summer 2017. Results from the campuses demonstrated that more than 5% of students in the fall 2016 cohort, the first cohort of students to have access to the three-year pathways at the point of UC entry, had accessed a three-year degree pathway. A report on the three-year degree pathways has been completed, shared with the campuses, and posted to the following site: http://ucop.edu/institutional-research-academic-planning/_files/3-year-paths.pdf. This budget framework agreement item has been completed.

The framework agreement also called on the University to **pilot alternative pricing models in summer sessions** at three campuses by summer 2016 to determine effective strategies for increasing undergraduate summer enrollment.

Three campuses established the following initiatives:

- an enhanced and expanded summer enrollment loan program available to all financially needy current and incoming UC students, including middle-class students. In addition, incoming freshmen will be offered a tuition-free two-unit online course designed to help students find an appropriate major (Berkeley);
- a summer fee cap whereby current and incoming UC students pay no fees for any additional units taken above eight units (Irvine); and
- low-cost summer housing rates for continuing students who enroll in summer (San Diego).

All three campuses implemented marketing plans to ensure the initiatives were widely known, and the three pilot campuses ultimately increased enrollment over the prior year by 638 FTE, compared to a collective increase at the six non-pilot campuses of only 106 FTE. Results were discussed with summer session leaders early in 2017 so that best practices could be used in deciding on summer 2017 offerings. The three pilot projects have now all concluded, fulfilling the terms of the budget framework agreement for this element. A report about these alternative pricing models has been disseminated to all nine undergraduate campuses for their consideration and has been posted to the following site: http://ucop.edu/institutional-research-academic-planning/_files/2016-Summer-Session-Pilot-Outcomes-final-report.pdf.

As part of the framework agreement, the University also committed to **enhancing online courses** for undergraduates and providing information on how the University has prioritized funding for prerequisite courses. This initiative builds on the Innovative Learning Technology Initiative established in 2013-14 that involves all undergraduate campuses and focuses entirely on providing online and hybrid undergraduate courses to address bottlenecks and support timely completion of an undergraduate degree. On November 19, 2015, UC produced a report describing the prioritization efforts for funding these online courses, fulfilling the terms of the budget framework agreement for this element.

The University also agreed to consult with the Academic Senate and request that it re-evaluate **credit provided for Advanced Placement and College-Level Examination Program tests.** President Napolitano sent a letter to then-Academic Senate Chair Hare in September 2015 asking the Senate to "reexamine current policies regarding Advanced Placement and the College Board's College-Level Examination Program tests." The topic was discussed by the Academic Senate at various leadership meetings. Senate Chair Hare forwarded the letter to the appropriate systemwide Senate committees, and they have been investigating current policies and considering whether any changes in policy or practice are called for. With the sending of the President's letter, the UC administration's work is complete.

The framework also called on the University to provide guidance to campuses on **advising practices that support timely graduation of students** and help reduce the achievement gap among different socioeconomic cohorts of UC students. Drawing on a variety of resources including professional organizations (e.g., the National Academic Advising Association), research, and campus best practices, a comprehensive advising guide was completed. Examples from every undergraduate campus were included. It provides advisors with useful guidance to help undergraduates stay on track for graduation within four years if they are native freshmen, two years if they are transfer students, or three years if they are native freshmen on a three-year pathway. The President sent the final report to campus Chancellors and Provosts on January 6, 2016

for use on each campus. It is available on the web at http://www.ucop.edu/institutional-research-academic-planning/_files/Advising_strategies.pdf. The terms of the budget framework agreement have been fulfilled for this element.

Innovation and the Use of Technology and Data Analytics. In order to expand **use of data systems (e.g., predictive analytics) to identify undergraduate students at risk of academic difficulty**, UC campuses summarized their data and technology efforts, such as predictive analytics, how this information is used, and how use of the data supports closing achievement gaps. This information was shared and discussed at the January 7-8, 2016 UC Summit on Data Analytics for Institutional and Student Success. The Office of the President also compiled this information into a report that was sent to campus Undergraduate Deans and Institutional Research Directors on February 18, 2016. Completion and distribution of the compilation of campus uses of data systems to identify undergraduate students at risk of academic difficulty fulfilled the terms of the budget framework agreement for this element.

In addition, in order to review the potential benefits of **activity-based costing (ABC)**, a methodology for estimating the cost of providing a product or service based on a detailed assessment of the resources consumed in its production and delivery, the University agreed that UC Riverside would pilot ABC for its College of Humanities, Arts, and Social Sciences. Two additional campuses, UC Davis and UC Merced, would undertake scoping studies for piloting ABC in at least three departments (within the most popular disciplines) by January 1, 2016, with a goal of implementing ABC in those departments by September 1, 2016, depending on the outcome of the scoping study.

UC Riverside has developed the information technology and budget allocation infrastructure needed to implement ABC for all academic departments at the campus. UC Davis and UC Merced each completed scoping studies showing that implementing a system like that of Riverside would be cost prohibitive, in large part because of difficulties integrating data across systems and establishing a method for allocating indirect costs to courses. Ultimately, UC Davis and UC Merced took an alternative approach to implementing ABC pilot studies for three departments at their respective campuses. The revised approach focused on instructional revenue and costs that can be pulled from one data system. All three campuses have submitted final reports to UCOP. These reports contained explanations of the methodology used at each campus and feedback from key stakeholders in the pilot departments. The University expects this budget framework agreement item to be complete by spring 2018.

Adaptive learning is another element within the framework's academic initiatives. Pilot studies exploring adaptive learning technology at the Davis, Santa Barbara, and Santa Cruz campuses focused on improving instruction and increasing the number of students who master content in particularly difficult courses and persist to completion. For this pilot project, all three campuses used the Assessment and Learning in Knowledge Spaces (ALEKS) platform (two for early chemistry courses and one for early mathematics courses).

For all three pilots, the goal was improved student performance and persistence in chemistry and mathematics course(s) compared to the 2015-16 academic year. Data were collected through the end of winter quarter 2016.

As part of the framework agreement, the University agreed to **convene industry and academic leaders to further identify online programs** that may be developed to enhance delivery of UC's instructional programs to better meet industry workforce needs. The online convening was held at the offices of the Bay Area Council on September 25, 2015. UC Berkeley's Haas School of Business Dean led the discussion among 54 attendees, which focused on how UC can help businesses meet the educational demands of their workforce and how those outside the UC system can navigate the barriers that may exist between UC departments and schools in order to build cross-functional partnerships. This convening fulfilled the terms of the framework agreement for this element.

PRESIDENTIAL INITIATIVES

President Napolitano has launched a series of initiatives that collectively leverage University capabilities across the system for high priorities, both for the future of the University and for other public service goals. The programs

span all three components of the University's mission – instruction, research, and public service.

Several of these initiatives are directly related to developing future generations of students, researchers, and faculty members, with a particular emphasis on diversity and inclusion consistent with UC's historic social contract:

- **Assistance for Undocumented Students.** Recognizing that California's undocumented students face unique challenges, this initiative represents a multifaceted approach to support their success at UC. Elements include supporting the California DREAM Loan program, funding campus student services coordinators, establishing a President's Advisory Council on Undocumented Students, convening a national summit on undocumented students, and providing centralized resources for students and families on a single website (undoc.universityofcalifornia.edu). On November 30, 2016, the University released its "Statement of Principles in Support of Undocumented Members of the UC Community." These principles, which are to be implemented through policies and procedures at all UC campuses and medical facilities, include the following:
  - The University will continue to admit students with its nondiscrimination policies so that undocumented students will be considered for admission under the same criteria as U.S citizens or permanent residents.
  - No confidential student records will be released without a judicial warrant, subpoena, or court order, unless authorized by the student or required by law; no UC campus police department will undertake joint efforts with local, state, or federal law enforcement agencies to investigate, detain, or arrest individuals for violation of federal law.
  - The University will not cooperate with any federal effort to create a registry of individuals based on any protected characteristics such as religion, national origin, race, or sexual orientation.

  The principles can be found in their entirety here: https://www.universityofcalifornia.edu/sites/default/files/Statement-of-Principles-in-Support-of-Undocumented-Members-of-UC.pdf.
- **The President's Postdoctoral Fellowship Program.** The goal of this program is to attract the nation's top postdoctoral scholars whose work contributes to UC's mission to serve an increasingly diverse state, nation, and world. Fellowships are available to support a nationally recruited pool of postdoctoral scholars performing cutting-edge research who have a proven commitment to diversity and equal opportunity in higher education. Funding is also available to hire these talented scholars as UC faculty.
- **President's Diversity Pipeline Initiative.** This initiative seeks to increase the eligibility, admission, and enrollment of underrepresented undergraduates at the University of California, with a particular emphasis on increasing the enrollment of African American students. The Initiative seeks to accomplish these goals through five short-term and long-term strategies:
  - Admissions & Yield: ensure that admissions and yield practices maximize opportunity/access for URM applicants
  - Scholarships: remove financial aid as a barrier to accepting a UC offer of admission for URM students
  - Inclusion: build URM student, family and community awareness of UC as a viable undergraduate or graduate option
  - Identification, Preparation, Cultivation: engage URM students in UC's intellectual life early and often to increase their preparation for UC,
  - Campus Climate: improve campus climate so that students, faculty, and staff feel respected and valued regardless of their backgrounds, identifies or group affinities.

  The Diversity Pipeline Initiative has yielded promising results since it was launched by the UC Office of the President in October 2015. For more information, see Chapter 7 in the 2017 Accountability Report: http://accountability.universityofcalifornia.edu/2017/chapters/chapter-7.html.
- **Partnerships with Historically Black Colleges and Universities (HBCUs).** The UC-HBCU Initiative seeks to increase the number of graduates of HBCU institutions who complete UC Ph.D. programs by investing in relationships and efforts between UC faculty and HBCU institutions. The initiative provides grants for UC faculty to host HBCU students to conduct summer research at a UC campus. If admitted to a UC Ph.D. program, fellows receive competitive support offers.
- **Public Service Law Fellowships.** This initiative created a first-of-its-kind fellowship program to support enrolled UC law students and graduates committed to public service. The program awards $4.5 million annually to students at UC Berkeley, UC Davis, UC Irvine and UCLA, making post-graduate and summer positions in the public interest more accessible.

Other initiatives seek to have a global impact by bringing leadership and resources to issues facing California and the world:

- **Global Food Initiative.** The UC Global Food Initiative (GFI) seeks to address one of the critical issues of our time: how to sustainably and nutritiously feed a world population expected to reach eight billion by 2025. GFI is also addressing topics such as UC student food security, agroecological practices, and resource conservation, as

well as encouraging hands-on agricultural education and increasing the amount of locally produced organic food available to the UC community. The initiative aligns the University's research, outreach, and operations in a sustained effort to develop, demonstrate, and export solutions – throughout California, the United States, and the world – for food security, health, and sustainability.

- **Carbon Neutrality Initiative.** This initiative supports the University's ambitious goal of becoming the first major research university to achieve carbon neutrality by 2025. The initiative builds upon UC's pioneering work on climate research and its leadership on sustainable business practices to improve its energy efficiency, develop new sources of renewable energy, and pursue related strategies to cut carbon emissions.
- **UC-Mexico Initiative.** The UC-Mexico initiative is addressing issues facing our shared populations, environment, and economies. Through sustained, strategic, and equal partnership between UC and educational institutions in Mexico, the initiative will increase student and faculty exchange and provide opportunities for collaborative research in key areas, including education, health, sciences, agriculture/sustainability, arts, and culture.
- **Innovation and Entrepreneurship.** This initiative seeks to leverage the scale and diversity of UC's ten campuses, five medical centers, and three affiliated national laboratories to build a vibrant and innovative entrepreneurial culture across the system. The initiative is intended to enhance all stages of technology commercialization by investing in UC inventors, early-stage UC technologies, and UC startup companies. The initiative received a $22 million grant from the State in 2016 to enhance the entrepreneurial ecosystem at our campuses.

In addition, the President has launched several initiatives to improve campus life and streamline operations. Among these are:

- **Student Housing Initiative.** On January 20, 2016, President Napolitano announced a housing initiative to support current students and future enrollment growth across the University of California system. The goals of the initiative are to provide an additional 14,000 new, affordable beds for undergraduate and graduate students across the system by 2020. UC campuses are located in some of the most volatile rental markets in the nation, with housing rates significantly impacting students' total cost of attendance. The initiative strives to increase the inventory of available housing for students while ensuring that housing options remain as affordable as possible.
- **Cybersecurity.** Risks associated with cyberattacks have increased dramatically for the University. Due to UC being a high-profile research institution possessing significant intellectual property and a healthcare enterprise with 15 million patients, UC has become keenly aware of the threats that exist in today's connected world for its faculty, staff, and students. In response to these threats a five-point cybersecurity plan has been developed to better protect the University's assets, detect nefarious activity in our environments, and respond in an appropriate and expeditious manner to attacks. The plan includes updated governance, enhanced risk management, adoption of modern technology, hardening UC's security environment, and instituting systemwide cultural change.
- **The President's Task Force on Preventing and Responding to Sexual Violence and Sexual Assault.** This Task Force was formed in July 2014 with the goal of establishing UC as a national model for preventing and combating sexual violence and sexual assault. Since its formation, the Task Force has identified steps to improve the University's current processes of effecting cultural change in sexual violence and assault prevention, and developed recommendations for implementing strategies to support excellence in prevention, response, and reporting of sexual violence, harassment, and sexual assault based on evidence-informed solutions and approaches. On January 1, 2016, the University issued an updated University sexual violence and sexual harassment policy. As part of the University's continuing strategy to more effectively prevent and respond to sexual violence and sexual harassment on campuses, the revised policy implemented new systemwide procedures for investigating, adjudicating, and imposing sanctions in student cases of sexual violence and sexual harassment. The new procedures assign specific authority, roles and responsibilities to designated offices to ensure consistency across the UC system, and set projected timeframes designed to promptly and effectively respond to complaints. They outline a fair process in which a student filing a complaint and a student responding to the complaint can be heard, offer witnesses and evidence, and appeal. For more information about these efforts, please see the "Student Services" chapter of this document.

The recent report from the California State Auditor regarding the UC Office of the President budget included certain recommendations related to Presidential initiatives. These recommendations included crafting a clearer definition of the term "initiative," developing spending targets for each initiative, and reviewing initiatives for potential cost savings. The University agrees with these recommendations and is taking steps to implement them.

QUALITY AT THE UNIVERSITY OF CALIFORNIA

What defines quality at a major research university? There are clear metrics that are commonly used when rating great universities, which include maintaining an outstanding faculty, measured in terms of individual achievements as well as adequate numbers to teach and train; recruiting and educating outstanding undergraduate and graduate students, as well as graduating them expeditiously; sustaining or enhancing those activities that receive positive evaluations from students and faculty with respect to the quality of education provided; and supporting core academic needs. Key indicators of instructional performance show that to date, the University has managed to sustain and even improve outcomes for its students. Maintaining these outcomes, however, is a challenge the University must address, given the reality of limited State resources.

The 2018-19 budget plan includes a fourth investment of $50 million over a multi-year period intended to represent a reinvestment in UC quality. These funds will be used to help restore faculty ranks and rebuild the academic infrastructure needed to ensure quality is maintained at UC.

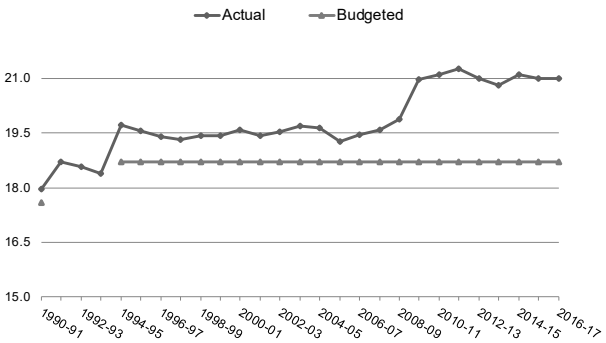
A Distinguished Faculty

The quality of the University of California is founded on its distinguished faculty. UC faculty members provide stellar instructional programs, research and creative work, professional leadership, and public service. The faculty fulfill the University's goals on behalf of the State of California by:

- delivering excellence in teaching;
- driving intellectual engagement, discovery, economic vitality, and cultural vibrancy;
- educating the workforce to keep the California economy competitive;
- providing health care to millions of Californians; and
- attracting billions of research dollars, creating new products, technologies, jobs, companies, and advances in healthcare, and improving the quality of life.

In fall 2016, UC employed 10,893 faculty (headcount) with appointments in the Ladder Rank and Equivalent series, the core faculty series charged with the tripartite mission of teaching, research, and public service. The University employs additional faculty in Adjunct Professor and Lecturer titles, plus visiting faculty and others, including retired faculty recalled to part-time service, to provide depth and breadth in fulfilling UC's mission. In 2016-17, expenditures on base salaries for appointments in all faculty series (from all revenue sources including State funds, student tuition and fees, contracts and grants, gifts and endowments, and clinical services) totaled over $2.4 billion.

Display III-1: General Campus Student-Faculty Ratio



State cuts have led to increases in the budgeted student-faculty ratio. The University's long-term goal is to improve the ratio to 18.7:1 or lower. (Note: enrollment was not budgeted during the budget cuts of the early 1990s, so there is no student-faculty ratio data available during those years.)

Current data reveal continuing faculty achievement at the same time that recruitment and retention challenges have increased.

Faculty continue to perform at top levels marked by awards for both established and early career faculty. Nevertheless, several trends illustrate major challenges facing the University that, if not addressed, will threaten the University's ability to sustain access and excellence:

- Over the last two decades, student enrollment has far outpaced growth in faculty. This growing imbalance between enrollment growth and growth in the number of faculty is troubling and must be addressed in the coming years.
- A 2014 study of total remuneration for ladder rank faculty on the general campus reveals that salary and benefits lag UC's comparison 8 institutions by 10%. The value of benefits no longer makes up for the salary lag.
- Challenges of hiring a diverse faculty vary by discipline. Campus efforts to increase the representation of women and underrepresented minorities among the faculty have historically yielded limited progress.

Since 1994, the University's *budgeted* student-faculty ratio has been 18.7:1. However, the *actual* student-faculty ratio has deteriorated dramatically since the budget cuts of the early 1990s (as shown in Display III-1), currently standing at 21:1 systemwide and ranging from 18.1 to 27.2 on individual campuses. Improving the student-faculty ratio would permit the University to:

- offer smaller class sizes where appropriate,
- enhance the quality of the educational experience and richness of course offerings, and
- help students complete degree requirements and graduate more quickly.

A lower student-faculty ratio also increases opportunities for contact outside the classroom, guidance in internships and placements, and undergraduate participation in research and public service. Moreover, an improved ratio helps attract and retain high quality faculty who are both dedicated educators and outstanding researchers.

Although decreasing the student-faculty ratio has been an important goal of the University for many years, funding for this purpose was not available for many years during fiscal crises. One of the University's quality initiatives proposed in recent budget plans, including the 2018-19 plan, is to improve the student-faculty ratio over the next several years.

Maintaining the quality of the faculty is critical to both the University and the State. Although faculty numbers declined in 2010-11 and 2011-12, UC is slowly replenishing faculty ranks; totals of ladder rank faculty have finally surpassed 2009-10 levels and hiring has out-paced separations for the past three years after years of remaining below those levels, although, as already noted, the ratio of students to faculty remains high.

Timely Graduation

The University remains committed to ensuring that undergraduate students are able to complete their degrees on time and to maintaining its excellent record of improving persistence and graduation rates among all students. As mentioned earlier in this chapter, the University agreed to strengthen its advising activities as part of the budget framework agreement with Governor Brown. A guide on advising strategies to support timely graduation was released in December 2015, identifying strategies from both UC campuses and national best practices. This guide can be found at http://www.ucop.edu/institutional-research-academic-planning/_files/Advising_strategies.pdf

Campuses also continue to ensure course availability by sustaining increases in faculty teaching effort, creatively managing the curriculum and its delivery (for example, through targeted and broader summer offerings), and expanding the use of instructional technology.

For UC undergraduates, the average number of terms enrolled has dropped from 13.4 enrolled quarters (where a four-year degree equals 12 quarters) for the 1984 freshman class to 12.3 for the 2009 cohort. (Recent progress is illustrated in Display III-2). Over 60% of UC freshmen graduate in 12 or fewer registered quarters. Students may take more total units or take longer to graduate if they change majors, pursue a double major, major in a field with a higher unit requirement, or take a lighter load some terms. In recent years, campuses have worked to increase the average number of units taken during a term while reducing excess units taken over a student's career, thereby enabling more students to graduate in four years and making room for additional students.

Freshman and transfer persistence and graduation rates have steadily risen over time. Among recent freshman cohorts, 93.5% of students persist into the second year and over 60% graduate within four years (graduation rate data are shown in Display III-3). Despite severe fiscal challenges, UC's four-year graduation rate steadily improved and is 64.3% for the most recent cohort. Those who do not graduate in four years often require only one more academic quarter to earn their degree; 82% of the 2010 entering freshmen earned a baccalaureate degree within five years and 85% within six years. UC graduation rates far exceed the national average; among first-time students entering four-year institutions nationwide, only about 40% earn a bachelor's degree within four years and 60% within six years.

Students beginning their higher education at a community college have historically done very well after transferring to UC. Among California Community College (CCC) transfer students, 93% persist to the second year and 88% earn a UC degree within four years, taking on average 6.9

quarters to complete their degrees (graduation rate data for CCC transfers are shown in Display III-4). Transfer students' UC grade point averages upon graduation are about the same as those of students who entered as freshmen.

Among graduate academic doctoral students, a special study by the National Research Council several years ago found that the percentage of UC students finishing in six years (or eight years for arts and humanities) was overall higher than for UC's four comparison American Association of Universities (AAU) publics for three of five disciplinary areas, and that average time to degree for the academic doctoral degree is exactly the same – 5.7 years – for UC as for its eight AAU comparison institutions. Moreover, the number of academic doctoral degrees per UC ladder rank faculty member had increased from 0.4 in 2005-06 to 0.5 in 2014-15, a higher number than UC's public and private AAU comparison institutions.

Student Satisfaction

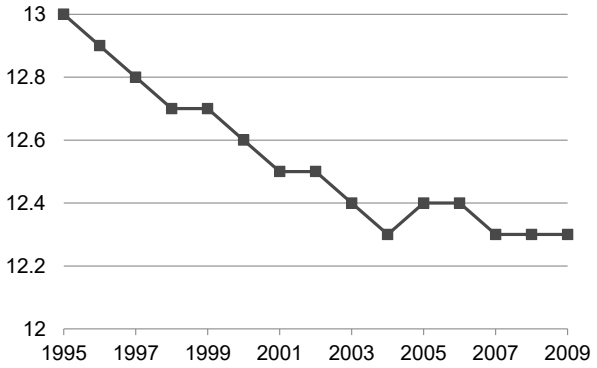
The University measures undergraduate student satisfaction, along with a host of other indicators of students' well-being, using the University of California Undergraduate Experience Survey, or UCUES. In 2016, 80% of survey participants reported that they are very satisfied, satisfied, or somewhat satisfied with their overall academic experience at UC.

Core Academic Support

Several areas of the budget are critical to academic quality, but have been underfunded historically. Collectively referred to as core academic support, these areas require ongoing support and new investments to ensure that the University is able to recruit and retain the best faculty and students. Core academic support includes:

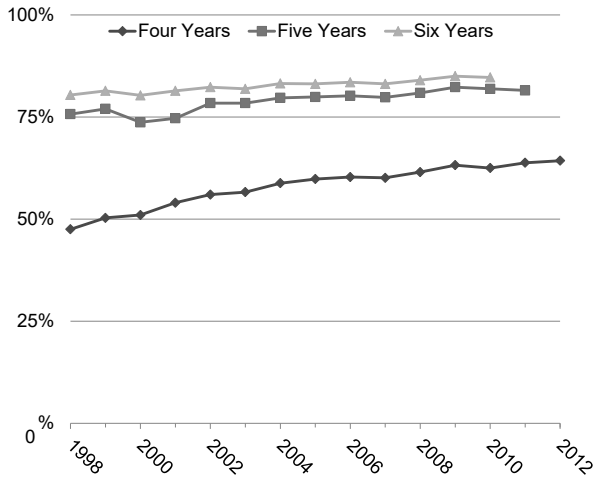
- instructional technology to enhance and enrich students' learning experiences and prepare them for employment in a global knowledge-based economy;
- instructional equipment replacement, providing up-to-date computing, laboratory, and classroom materials for teaching and research;
- library resources to build and make available print and digital collections and to continue strategic investments in advanced, cost-effective reference and circulation services; and

Display III-2: Time to Degree among Freshmen by Cohort



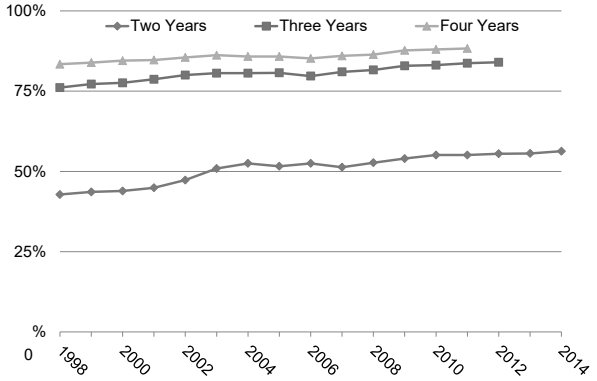
Time to degree, measured in quarters enrolled, has declined over time to 12.3 for the most recent cohort.

Display III-3: Graduation Rates by Freshman Cohort



Over 60% of freshman entrants obtain their degree within four years and over 80% finish within six years.

Display III-4: Graduation Rates by CCC Transfer Cohort



CCC transfers to UC also exhibit strong graduation rates, with more than half finishing in two years and 88% graduating within four years of transfer.

- ongoing building maintenance to support the janitorial, groundskeeping, and utility costs associated with maintaining facilities.

The Partnership Agreement with former Governor Davis recognized the shortfall in these areas and planned a 1% adjustment to the base each year to help address the gap. Funds were provided for this purpose for two years. Once the State's fiscal crisis began during the early 2000s, however, not only were increases discontinued, but program cuts erased the progress that had been made from earlier funding increases. The shortage in these areas was estimated in 2007-08 to be well over $100 million.

Former Governor Schwarzenegger again recognized the critical nature of the shortfall in these budget areas and proposed a 1% annual adjustment in the base budget beginning in 2008-09 to help address the shortfall. The additional 1% base budget adjustment was funded in the Governor's 2008-09 budget proposal before applying a 10% budget-balancing reduction. Between 2009-10 and 2011-12, no new funding was provided for this purpose; in fact, deep base budget cuts were initiated, further exacerbating the chronic funding shortfalls in these areas. The University's investment in quality initiative proposed in recent budget plans, including the 2018-19 budget plan, calls for renewed investment in many of these areas.

Performance Outcome Measures

The University believes that in evaluating instruction at UC, quality is better measured in terms of outcomes than in terms of inputs. The Governor has placed a major emphasis on the need to develop performance outcome measures for both UC and California State University (CSU) undergraduate students. Working with the Department of Finance, UC identified quantifiable performance outcome measures (most of which were already collected and reported on by the University) to benchmark its current performance and track its improvement over the coming years. Reports required by budget trailer language (AB 94) indicate the following:

- Both the number and percentage of UC transfer entrants have grown over the past decade;
- UC enrolls a higher proportion of Pell grant recipients than do comparable research universities;
- Four-year freshman and two-year transfer graduation rates have improved over time at UC;
- UC degree completions have risen steadily, except for a very slight decline in 2012-13 and 2013-14 (attributable to a substantial reduction in the size of the freshman classes in 2009-10 and 2010-11 related to the large budget cuts necessitated by the recession);
- Most students are on track to graduate in four years after their first year at UC;
- Engineering/computer science majors and students with more than one major have slightly more UC units at graduation; and
- UC graduates in STEM fields have steadily increased and it is expected that the trend will continue in the future. UC also awards the most STEM degrees of all California postsecondary institutions.

The most recent report and findings can be reviewed at http://www.ucop.edu/operating-budget/_files/legreports/16-17/PerformanceOutcomeMeasuresLegRpt-03-23-17.pdf.

DIVERSITY

UC is dedicated to achieving excellence through diversity in the classroom, research laboratory, and workplace. It strives to establish a climate that welcomes, celebrates, and promotes respect for the contributions of all students and employees.

In 2007, the Regents adopted as policy the UC Diversity Statement defining diversity as the "variety of personal experiences, values, and worldviews that arise from differences of culture and circumstance. Such differences include race, ethnicity, gender, age, religion, language, abilities/disabilities, sexual orientation, gender identity, socioeconomic status, geographic region, and more" (www.universityofcalifornia.edu/diversity/documents/diversityreport0907.pdf). The value of diversity in all aspects of UC's educational programs is fundamental to its mission as a land grant institution. A diverse University community enhances the quality of education by infusing perspectives and experiences from people of all walks of life in California and beyond, enriching and contributing to the educational, scholarship, research, and public service environment. An important aspect of this environment is the ability to take advantage of the social, cultural, and intellectual contributions enabled by having a diverse population of students, faculty, and staff.

To that end, the Regents requested an annual accountability report on diversity at UC. Moreover, in 2012-13, UC conducted a campus climate survey that

yielded results across 13 locations: the 10 UC campuses, Lawrence Berkeley National Laboratory, Agricultural and Natural Resources, and UC Office of the President.

The annual accountability reports have focused on diversity by gender, race, and ethnicity of the University community and have provided information about efforts to enhance that diversity, while the campus climate survey gathered a wide range of data related to institutional climate, inclusion, and work-life issues to evaluate and improve climate. Detailed data on diversity and other accountability measures can be found at UC's Accountability Report website: http://accountability.universityofcalifornia.edu/.

On the UC campus climate survey website, at http://campusclimate.ucop.edu/, the UC system and each location provided information on recent efforts or initiatives aimed at promoting equity and inclusion. The results of the survey show that overall, the UC community is generally comfortable with the University climate: 79% of respondents indicated that they were "comfortable" or "very comfortable" with the University climate, with the highest rates of comfort reported among students and lower rates reported among faculty and post-docs. Over three-quarters of staff and faculty feel that UC values diversity in staff and faculty, two-thirds feel UC is supportive of flexible work schedules, and 69% of undergraduates and 78% of graduate students feel satisfied with their academic experience at UC.

The climate survey also identified opportunities for improvement. Some members of the University community experienced exclusionary conduct, with some groups more likely to report such issues – for example, a higher percentage of people of color experienced exclusionary conduct. Respondents with a disability were less comfortable with the overall climate than respondents with no disability, and a small but meaningful percentage of respondents (3% overall) reported experiencing unwanted sexual contact, an issue which is being addressed through recommendations from a task force on sexual violence discussed in more detail in the *Student Services* chapter of this document. Although there are many areas of success and innovation, the University is committed to focusing greater and sustained attention on its diversity efforts.

PRINCIPLES AGAINST INTOLERANCE

In 2014-15, the Regents received correspondence and complaints of anti-Semitism and other acts of intolerance and bias. After a series of discussions the Regents formed a "Working Group on Principles Against Intolerance" during 2015-16. The charge of the working group was to develop a statement against intolerance that also reflected the principles of academic freedom and freedom of expression.

In the course of preparing a draft statement, the Working Group convened a day-long public forum on October 26, 2015. It also invited input from recognized scholars on the subjects of discrimination and free speech, and it received extensive comment from many members of the University community and the general public.

At its March 24, 2016 meeting, the Regents voted to adopt the working group's Final Report that included principles against intolerance. The principles state, in part, that, **"**acts of hatred and other intolerant conduct, as well as acts of discrimination that demean our differences, are antithetical to the values of the University and serve to undermine its purpose.

Diversity Within the University Community

UC often describes its diversity aspirations in terms of "reflecting the diversity of California." While the University has made progress in several key areas related to diversity and inclusion, it has not kept pace with demographic changes in California, especially the rapid growth of the Chicano(a)/Latino(a) population.

Racial and ethnic diversity at the University changes slowly over time as populations change. At the undergraduate level, the population changes every four to five years, providing an opportunity for the University to become more responsive to demographic shifts in the graduating high school population. Conversely, faculty careers can last 30 to 40 years, requiring a longer trajectory for these population shifts.

Undergraduates. At the undergraduate level, UC has made progress in expanding access to all Californians. At UC, underrepresented groups include African American, American Indian, and Chicano(a)/Latino(a) students. In fall 1999, students from underrepresented minority groups comprised 17% of all undergraduates. In fall 2016, students from underrepresented minority groups comprised

33% of all undergraduate students. Among new freshmen, students from underrepresented racial/ethnic groups have increased from 17% in fall 2000 to 36% in fall 2016. This increase reflects, in part, the dramatic increases in diversity of California's high school graduating class. Additionally, California Community College transfer students from underrepresented groups have increased from 26.5% in fall 2012 to 34.9% in fall 2017. In fall 2017, UC enrolled its largest and most diverse class ever. Almost 38% of freshmen and almost 35% of California Community College transfers came from underrepresented racial/ethnic groups, the largest share in UC history. In addition, the percentage of new undergraduates who are Pell Grant recipients has increased from 30.5% in 2003 to 37.9% in 2016.

Graduate Academic Students. Similar to graduate programs across the country, UC's graduate academic programs strive to increase racial and ethnic diversity. The percentage of students from underrepresented minority racial/ethnic groups varied by academic discipline in fall 2016, ranging from 19% for social science disciplines to 7% for engineering, computer science, and the physical sciences. In nearly every discipline, UC graduates a higher percentage of students from underrepresented racial/ethnic groups than the average among other AAU public or private institutions.

The percentage of students who are women also varied by discipline in fall 2016, from 54% for social science disciplines to 28% for engineering, computer science, and the physical sciences. Figures for UC graduates in these disciplines are generally comparable to those at other AAU public or private institutions.

Graduate Professional Students. Among graduate professional degree programs at UC, the percentage of students from underrepresented minority racial/ethnic groups varied in fall 2016, from 43% in education to 7% in business. In nearly every discipline, UC graduates a higher percentage of students from underrepresented racial/ethnic groups than the average among other AAU public or private institutions.

In fall 2016, the percentage of students in UC professional degree programs who are women ranged from 73% in education to 37% in business. Figures for UC graduates in these disciplines are generally comparable to those at other AAU public and private institutions.

Faculty Diversity. The ladder rank faculty at the University of California is more diverse, on average, than the faculty at American Association of Universities (AAU) public and private institutions. Among the University's eight public and private comparison institutions, UC is tied for second for the percentage of women faculty, at 33%. Additionally, UC places second for the percentage of URM faculty and women URM faculty, at 10% and 4% respectively.

In fall 2016, 6.2% of ladder- or equivalent-rank UC faculty were Chicano(a)/Latino(a), 0.6% were Native American, 3.0% were Black/African/African American, and 16.4% were Asian or Asian American (figures include both domestic and international faculty).

Despite gains over time, ladder- and equivalent-rank faculty are still 70% white and 67% male. Diversifying faculty is a national challenge for universities, including UC. Because new faculty hires at UC are more diverse than the faculty as a whole, a positive trend in enhancing diversity among UC faculty is occurring.

Annually, all ten campuses are committing funding and personnel to support best practices in recruiting and retaining a diverse faculty. This includes, on all ten campuses, the following: monitoring of recruitment efforts, implicit bias and climate enhancement training, and use of a common on-line recruitment system, which facilitates data collection about the diversity of candidate pools and finalist lists.

The Budget Act of 2016 included an allocation of $2 million on a one-time basis for "a program to support best practices in equal employment opportunity." It also stated that the Regents shall submit to the Director of Finance and the Legislature a report that includes the number of ladder-rank faculty at UC, disaggregated by race, ethnicity, and gender, and a description of the specific uses of these funds to support equal employment opportunity in faculty employment.

The University's report, which was submitted in November 2016, explained that this one-time funding focused on three campus units in 2016-17, enabling the University to supplement its ongoing systemwide efforts with targeted

efforts that might be transferable outside of pilot units. These units included the College of Agricultural and Environmental Sciences at UC Davis, the Bourns College of Engineering at UC Riverside, and the Jacobs School of Engineering at UC San Diego. Four comparator schools/colleges and one campus-based IT unit also received a small portion of the one-time funds to support their role in the project.

The interventions supported by this funding resulted in a substantial increase in the percentage of underrepresented minority (URM) finalists in three pilot units, and two of the pilot units had a substantial increase in the percentage of both URM and female faculty as finalists and of those hired. All three units saw significant changes in practice and conversation. A full report on the results of these interventions will be made available in December 2017.

The Budget Act of 2017 includes a second one-time allocation of $2 million to advance the University's efforts to increase faculty diversity. The University welcomes this additional support. Plans for the distribution of these funds to campus units are underway.

Staff Diversity. The most diversity is seen among UC's Professional and Support Staff, and the least among its Senior Management Group, although UC now has its first female President. Despite some progress over the past decade, in 2016, the Senior Management Group (consisting of 168 employees) was 69% white and 59.5% male. In contrast, among the University's 102,000 Professional and Support Staff, 40% were white and 65.5% were women.

In fall 2016, 28.8% of the University's nearly 115,000 non-academic staff were underrepresented minorities and 53% were racial and ethnic minorities (including Asian Americans), up from 25% underrepresented minorities and 42% racial and ethnic minorities in fall 1996. The largest increase was among Asian Americans, who comprised 17% of all staff in fall 1996 compared to 25% in fall 2016, followed by Chicano(a)/Latino(a) staff (14% in fall 1996 compared to 20% in fall 2016).

Institutional Best Practices in Diversity

Recognizing the need for and importance of advancing the diversity and inclusion of faculty, students, and staff, UC campuses and locations have implemented a wide variety of programs and initiatives. Some of these efforts have been in place for more than 30 years; some are brand new. Selected best practices are summarized below:

Undergraduate Students. UC devotes considerable resources to extensive academic and college preparation support for nearly 185,000 K-12 and community college students in 2015-16, the most recent year for which data is available. Of the high schools served by UC's systemwide programs, more than 50 percent are among the lowest-performing schools in the state, with Academic Performance Index (API) decile rankings of 1 to 5 (on a scale of 1 to 10, with 1 indicating lowest performance). When compared with their peers from California public high schools, program participants have significantly higher UC acceptance rates and rates of enrollment in all three of California's public college segments. In addition, when program participants are accepted to UC, they are more likely to enroll. The University has also launched the President's Diversity Pipeline Initiative, which is described earlier in this chapter.

Graduate Academic and Graduate Professional Students. The UC-HBCU Initiative, first implemented in 2012-13, improves diversity and strengthens graduate programs by investing in relationships between UC campuses and Historically Black Colleges and Universities (HBCUs). Since its inaugural year, more than 400 HBCU scholars have participated in the program, which offers faculty-led summer research opportunities and year-round mentoring. Nearly half of eligible UC-HBCU scholars have applied to UC for graduate education, and 45 Ph.D. and seven master's degree students have enrolled at UC as a direct result of the program.

Medical Education. UC's Programs in Medical Education (PRIME), available at all UC medical schools, is an innovative training program focused on meeting the needs of California's underserved populations in both rural communities and urban areas by combining specialized coursework, structured clinical experiences, advanced independent study, and mentoring. As of 2017-18, UC will enroll approximately 350 medical students in PRIME, with over 60% from underrepresented groups in medicine.

Ladder Rank Faculty. The President's Postdoctoral Fellowship Program (PPFP) is a keystone program at the University of California that supports diversification of UC faculty through financial support and career development training for postdoctoral scholars that show promise to be successful faculty in the UC system. Fellows have a demonstrated record of commitment to diversity in their research, teaching and/or outreach. The fellowship is extremely competitive, awarded to only the top three percent of applicants. The program selects approximately 20 fellows annually. At present, 165 PPFP fellows have been hired into UC tenure-track positions since 2004.

Staff and Management. The University is focused on a broad range of staff diversity issues, including recruitment, retention, and promotion, leadership commitment to staff diversity at each location, and systems for ensuring that best practices in support of staff diversity are woven throughout the fabric of the University. One notable best practice is the Diversity and Inclusion Certificate Program at UC Santa Cruz. The certificate program is designed to offer participants an in-depth examination of diversity and differences in order to gain a greater understanding of how and why to work together to build a stronger and more inclusive campus community. To date, there have been 341 graduates. Approximately 93% of participants in the program are staff.

Campus Climate. In January 2015, each campus and location provided action plans in response to findings from the 2013 Campus Climate Survey Report. Location action plans are available at: http://campusclimate.ucop.edu/_common/files/pdf-climate/location-climate-plans-2015.pdf

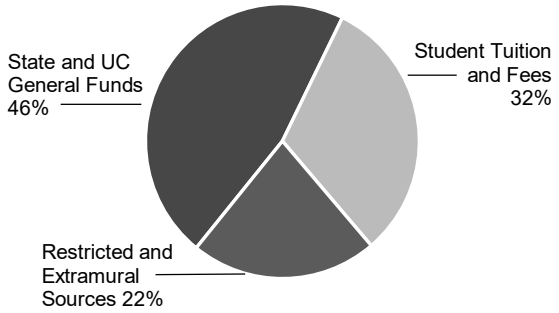
General Campus Instruction

The University of California provides undergraduate, graduate professional, and graduate academic education through the doctoral degree level and serves as the primary State-supported academic institution for research. Consistent with the California Master Plan for Higher Education, a fundamental mission of the University is to educate students at all levels, from undergraduate to the most advanced graduate level, and to offer motivated students the opportunity to realize their full potential. The University continues to offer a space to all qualified California resident undergraduates and provides programs for graduate academic and graduate professional students in accordance with standards of excellence and the growing needs of California, the sixth-largest economy in the world. To do this, the University must maintain a core of well-balanced, quality programs and provide support for newly emerging and rapidly developing fields of knowledge.

What attracts students to a research university is the opportunity to interact with faculty on the cutting edge of their field and to participate in, and even conduct their own, research. UC students are no different. In the 2016 University of California Undergraduate Experience Survey (UCUES), 84% of respondents agreed that attending a university with world-class researchers was important. The survey also found that 70% of senior undergraduates have completed or are completing a research project or research paper as part of their coursework. The close relationship between instruction and research, at both the undergraduate and graduate levels, is the hallmark of a research university.

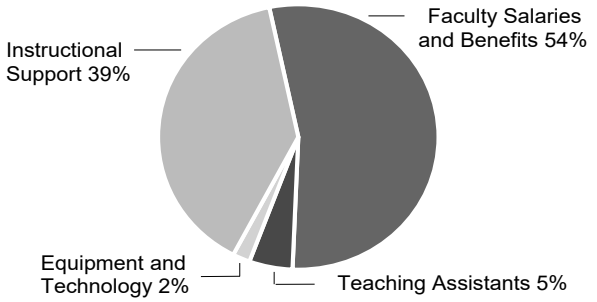
The University offers bachelor's, master's, and doctoral degrees in 790 instructional programs from agriculture to zoology and professional degrees in a growing number of disciplines. The University's Academic Senate authorizes and supervises courses offered within instructional programs, and also determines the conditions for admission and the qualifications for degrees and credentials. UC began awarding degrees in 1870 and conferred 72,322 degrees in 2016-17.

Display IV-1: 2016-17 General Campus Instruction Expenditures by Fund Source (Total: $3.6 Billion)



Core funds (State General Funds, UC General Funds, and mandatory and professional school student tuition and fees) provide 78% of funding for general campus instruction.

Display IV-2: 2016-17 General Campus Instruction Expenditures by Category (Total: $3.6 Billion)



Over half of expenditures in general campus instruction are for faculty salaries and benefits.

The general campus Instruction and Research (I&R) budget includes direct instructional resources associated with schools and colleges located on the nine UC general campuses.[1] I&R expenditures totaled $3.6 billion in 2016-17, 78% of which comes from core fund sources

[1] The San Francisco campus is primarily dedicated to the health sciences, which are discussed in the *Health Sciences Instruction* chapter of this document.

(State General Funds, UC General Funds, and student tuition and fees). Additional resources for instruction are derived from self-supporting program charges, course materials and services fees, philanthropy, and other restricted sources. Major budget elements and their proportions of the general campus I&R base budget are faculty and teaching assistant salaries and benefits (59%); instructional support (39%), which includes salaries and benefits of instructional support staff (such as laboratory assistants, supervisory, clerical and technical personnel, and some academic administrators) and costs of instructional department supplies; and instructional equipment replacement and technology (2%).

ENROLLMENT

The California Master Plan for Higher Education calls for UC to offer access to all eligible California resident applicants. The University establishes criteria designed to identify the top 12.5% of the State's public high school graduates and guarantees freshman admission to all California resident applicants who meet the requirements, apply on time, and choose to attend (though not necessarily at the campus or in the major of choice). In addition, the Master Plan calls for UC to guarantee a place for all California Community College (CCC) transfer applicants who meet the relevant admissions requirements. To enable the University to accommodate all California resident students who are eligible and likely to apply, the Master Plan calls for the State to provide adequate resources.

The University remains committed to the Master Plan as the foundation for one of the finest higher education systems in the world. The interests of the State, its citizens, and the higher education segments in California have been well served by the Master Plan for nearly 60 years. Legislative reviews of the Master Plan have maintained its basic tenets, explicitly reaffirming the access guarantee for all eligible students. Indeed, section 66202.5 of the California Education Code states: "The University of California and the California State University are expected to plan that adequate spaces are available to accommodate all California resident students who are eligible and likely to apply to attend an appropriate place within the system. The State of California likewise reaffirms its historic commitment to ensure that resources are provided to make this expansion possible, and shall commit resources to ensure that [eligible] students ... are accommodated in a place within the system."

UNIVERSITY ENROLLMENT PROJECTIONS

UC's enrollment projections are based on consideration of several factors, including:

- Department of Finance projections of high school graduates and improvements in high school graduation rates;
- assumptions about the proportion of high school graduates who actually enroll in the University (the University establishes criteria designed to identify the top 12.5% of California's high school class, but in the last ten years, the top 7% to 8% have enrolled);
- assumptions about community college transfer rates, consistent with the University's goal to continue to improve these rates;
- need to replace college educated workers as "baby boomers" move into retirement; and
- increases in graduate academic and graduate professional enrollment required to meet workforce needs.

Historically, the State did provide sufficient funds to support enrollment growth as it occurred. Funding for enrollment growth was not provided, however, during the recent Great Recession. Beginning in 2015-16, the State once again began to include undergraduate enrollment growth funding in the University's budget, although in both 2015-16 and 2016-17 only partially funded its share. UC redirected funds from other programs to make up the difference. The State provided no funding for graduate student enrollment growth in 2015-16 or 2016-17. In 2017-18, as mentioned later in this chapter, the State provided funding for an additional 500 graduate students, but directed the University to enroll at least 1,500 additional undergraduates in 2018-19 by internally redirecting existing funding.

When the most recent fiscal crisis enveloped the State, the University did not take action to reduce enrollment or cease its commitment to the Master Plan. Instead, the University took many actions to address budget shortfalls while still maintaining access for California residents. As discussed in the *Historical Perspective* chapter of this document, many of the actions the University took during that time

were of necessity short-term and not sustainable. The University hopes to partner with the State over the next several years to help address areas that were particularly hard hit during the fiscal crisis and should be restored if the University is to be able to maintain the level of excellence in its academic program that has long been its hallmark. To that end, the 2018-19 budget plan includes an additional investment of $50 million in areas directly related to enhancing academic quality such as improving the student-faculty ratio, graduate student support, faculty start-up packages, closing faculty salary gaps, and other areas of core academic support. Without taking such action to address shortfalls, guaranteeing "access" could become an empty promise to the students who have worked hard to be eligible to attend. It is access to the quality of a UC education that these students seek.

Framers of the Master Plan also envisioned maintaining or enhancing the proportion of graduate student enrollment at UC. Though providing undergraduate access for a rapidly growing high school graduate population over the past several decades has been a compelling State priority, adherence to this priority has not been without consequences for the overall academic balance of the University and its impact on the State's supply of highly-skilled workers needed in California's knowledge-based economy. Although the University has expanded access for undergraduates, graduate enrollments have not kept pace as intended in the Master Plan or with comparable research institutions. The importance of graduate student enrollment is discussed in more detail later in this chapter. Demographic details about the University's undergraduate and graduate populations can be found in Displays IV-3 through IV-8.

2018-19 Budget Request

The 2018-19 budget plan was developed within the context of a number of important considerations, including provisions of the Budget Act of 2017, and the University's unprecedented levels of enrollment growth among California resident undergraduates over the past two years.

According to the State Budget Act of 2017, it is the expectation of the Legislature that the University will enroll at least 1,500 more resident undergraduate students in the 2018-19 academic year compared to 2017-18. In a departure from previous Budget Acts, however, the Act provides no assurance of incremental State General Funds to support that enrollment growth. Instead, the Act suggests that this enrollment growth should be funded, at least in part, by reallocating existing resources from other parts of the University's budget. The Act directs the University to consult with the Legislature and the Department of Finance to identify possible areas where funding could be redirected towards enrollment growth.

The 2017 Budget Act also calls upon the University to enroll at least one additional transfer student for every two additional freshmen students enrolled. Under the Act, $50 million of the University's 2017-18 State General Fund appropriation is contingent upon the University

CALIFORNIA'S MASTER PLAN FOR HIGHER EDUCATION

In exchange for the higher education segments agreeing to differentiate functions and admissions pools and to reduce programmatic duplication, State government and taxpayers agreed to provide support for higher education.

Differentiation of function

- UC (10 campuses) – high-cost doctoral education, highly-specialized professional schools
- CSU (23 campuses) – bachelor's and master's level education
- CCC (113 community colleges) – lower division and basic skills education and workforce training

Differentiation of admissions pools coupled with principle of universal access

- UC and CSU are to take all eligible students in the top one-eighth and one-third, respectively, of California public high school graduates.
- CCCs are to admit any student capable of benefiting from instruction.
- Any CCC student has the opportunity to become eligible for four-year instruction.
- UC and CSU give eligible CCC transfer students priority in admission.

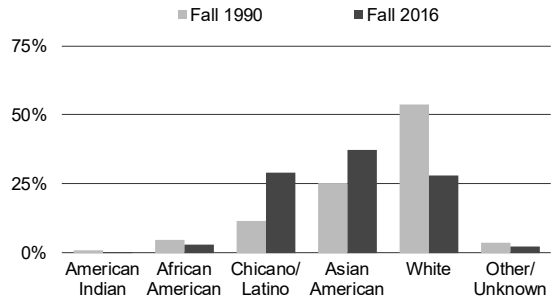
Affordability

- A commitment to the principle of tuition-free education for California residents has been replaced in the last few decades with moderate tuition accompanied by extremely robust financial aid policies.
- Student aid helps ensure finances are not a barrier to higher education and that financial aid is portable to any institution in the state.

Display IV-3: Characteristics of Fall 2016 Undergraduate Students

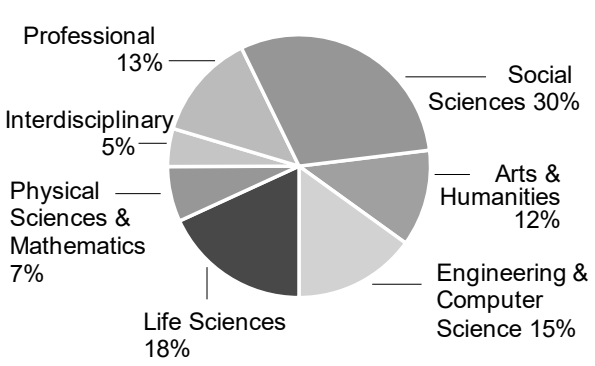
Headcount enrollment	210,369
Female	53%
Underrepresented minority	27%
First-generation college students	42%
Full-time students	97%
California residents	83.5%
Domestic nonresidents	5.6%
International students	10.8%
Upper division	61%
Lower division	39%

Display IV-4: Distribution of Domestic Undergraduate Students by Race/Ethnicity



Since fall 1990, the proportion among UC undergraduates of Chicano(a)/Latino(a) students has risen more than 250% and the proportion of Asian American students has risen nearly 150%.

Display IV-5: 2016-17 Bachelor's Degrees Conferred by Broad Discipline (Total: 53,717 Undergraduate Degrees)

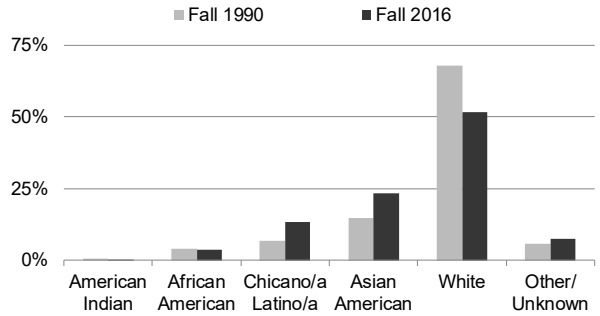


In 2016-17, UC undergraduates earned 53,717 bachelor's degrees. Just over 40% of undergraduate students earned degrees in the social sciences, arts, and humanities, with nearly the same proportion earning degrees in STEM fields.

Display IV-6: Characteristics of Fall 2016 Graduate Students

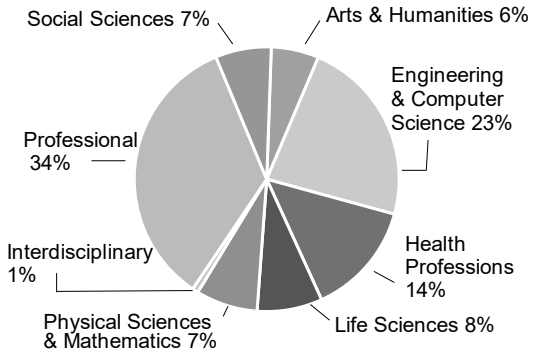
Headcount enrollment	54,057
Female	46%
Underrepresented minority	14%
Doctoral students	48%
Academic master's students	13%
Professional students	25%
Medical residents	10%
California residents	56%
Domestic nonresidents	8%
International students	22%

Display IV-7: Distribution of Domestic Graduate Students by Race/Ethnicity



Since fall 1990, the proportion among UC graduates of Chicano(a)/Latino(a) students has risen nearly 200% and the proportion of Asian American students has risen more than 150%.

Display IV-8: 2016-17 Graduate Degrees Conferred By Broad Discipline (Total: 18,605 Graduate Degrees)



In 2016-17, UC awarded approximately 18,600 master's (11,982), doctoral (3,975), and professional degrees (2,648). Approximately half were in sciences, mathematics, engineering, and health professions, and approximately one third were degrees in other professional disciplines.

demonstrating a good faith effort to satisfy five requirements, including attaining the freshman-to-transfer ratio of 2:1 systemwide and at every campus except Merced by 2018-19. It is anticipated that the Berkeley, Davis, Los Angeles, San Diego, and Santa Barbara campuses will reach this goal in 2017-18.

The University, with the support of the State, achieved an extraordinary level of enrollment growth between 2015-16 and 2016-17. The growth in total enrollment of California resident undergraduates between fall 2015 and fall 2016, for example, was the largest one-year increase since the end of the Second World War. This expanded access has benefited both California high school graduates and California Community College students, who applied to – and enrolled at – the University in record numbers.

This growth, while a boon to California students seeking to enroll at UC, has created challenges for campuses. These challenges have resulted in part because actual enrollment growth far exceeded the funded enrollment growth targets specified in the Budget Acts of 2015 and 2016. Respectively, those Acts provided $25 million in State support for enrollment growth of 5,000 California resident undergraduates in 2016-17 over 2014-15 levels and $18.5 million in State support for enrollment growth of 2,500 additional California resident undergraduates in 2017-18 compared to 2016-17. In both cases, funding was granted by the State after the University demonstrated to the Director of Finance that it would achieve, at a minimum, these enrollment targets.

Both Budget Acts provided funding on an all-or-nothing basis: UC was to receive no enrollment growth funding if it fell short of the specified goal, yet would receive no additional funding for enrolling students in excess of the goal. In order to avoid the prospect of receiving no State funds for enrollment growth, campuses made the rational decision to err high when trying to achieve their enrollment growth targets,

This tendency, combined with the often unpredictable nature of enrollment management, resulted in estimated enrollment growth of approximately 10,100 students between 2014-15 and 2017-18, or 2,600 more than the 7,500 students for which partial funding was provided in the Budget Acts of 2015 and 2016. In lieu of State support to subsidize the cost of educating these students, campuses have instead diverted funds from other pressing budgetary needs to accommodate the larger-than-expected enrollment of California resident undergraduates.

Although the University envisioned sustaining expanded access by increasing total California resident undergraduate enrollment by at least 10,000 students within four years (from 2014-15 through 2018-19), if current projections hold, it will have ultimately enrolled over 10,000 new students in just three years (by 2017-18). Display IV-9 illustrates the extent to which the enrollment growth of California resident freshmen and California resident transfer entrants in 2016-17 and 2017-18 mark departures from that of the previous five years.

Actions taken for 2016-17 and 2017-18 have implications for future years – as classes of students coming in are larger than classes graduating, total enrollment grows, even if new student enrollment does not change.

As the State's research university, UC is also concerned with enrollment of graduate students to complement and support dramatic undergraduate growth. As faculty are added to meet the increased enrollment demand, graduate enrollment must increase to support faculty in the research mission of the University and to help with the teaching and mentoring associated with additional undergraduates. To that end, the University's 2016-17 budget plan requested an additional $6 million in State General Funds above the base budget increase to support the enrollment of 600 additional graduate students by 2016-17. Although the State did not fund this request in 2016-17, it remained a high priority for the University. In an effort to keep pace with the significant growth in undergraduate student enrollment in 2016-17, and in anticipation of further growth in 2017-18, the 2017-18 budget plan requested $9 million to support graduate student enrollment. Ultimately, the 2017-18 Budget Act granted the University $5 million for graduate student enrollment growth (500 students). This augmentation is a welcome reinvestment from the State in graduate student enrollment growth, which is a defining characteristic of the University as a research institution.

History of State Support for Enrollment Growth

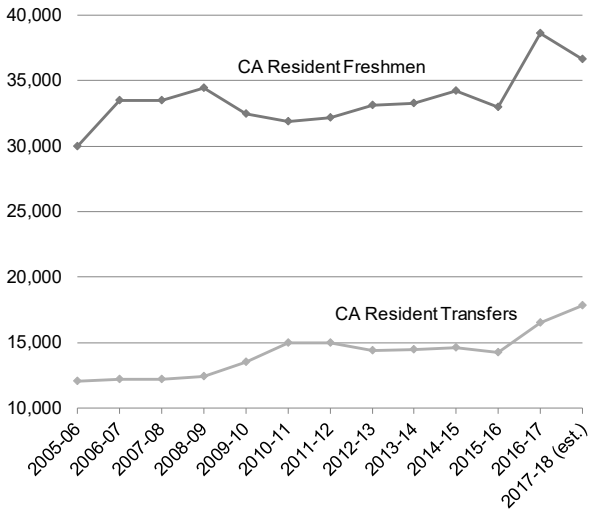
Historically, the State provided funding for each additional FTE student added to the University's current budgeted enrollment level based on an amount known as the marginal cost of instruction, calculated using an agreed-upon methodology with the State and intended to reflect the level of resources needed to educate each additional student at UC's historical level of quality.

The marginal cost of instruction formula includes salary and benefits for additional faculty positions (based on the assumption of a budgeted student-faculty ratio of 18.7:1); related instructional support such as clerical and technical personnel, supplies, and equipment; support for teaching assistant positions; institutional support; and support for operation and maintenance of plant, libraries, and student services. Activities that the State has chosen not to support, such as student health services, plant administration, executive management, and logistical services, are excluded. The methodology identifies the State subsidy provided toward the cost of education as well as the portion of this cost that is paid from student tuition and fees. To the extent that the methodology is based on expenditures, the marginal cost rate does not capture the full costs of instruction.

Funding for enrollment growth at the marginal cost of instruction was included in the 2005-06, 2006-07, and 2007-08 budgets. However, due to substantial demand for enrollment from growing numbers of high school graduates and community college transfers, the University was significantly over-enrolled in both 2006-07 and 2007-08.

The State's ongoing fiscal woes led to reductions in support for UC – and no new funding for enrollment growth – during 2008-09 and 2009-10. In keeping with its commitment to the California Master Plan and California undergraduate applicants who had worked hard to become eligible for admission, the University made a decision in 2008-09 to ask that campuses, to the best of their ability, implement the enrollment increases that had been planned before the onset of budget cuts. This enrollment growth, including growth of planned health science programs, was funded through an internal redirection of existing resources. As a result of this action, and due in part to increased

Display IV-9: California Resident Freshman and California Resident Transfer Entrants (Fall Term)



After years of relatively flat enrollment growth among new California resident freshmen and California resident transfers, the University has once again begun to increase enrollments of these populations of students. The State called upon the University to enroll 5,000 additional California resident undergraduates in 2016-17 relative to 2014-15 enrollment, resulting in the dramatic increase in California resident freshman entrants that year.

IMPORTANCE OF STATE FUNDING

Accommodating enrollment in recent years without sufficient resources has impacted students by eroding UC's traditional high-quality academic experience.

For students, the dilution of resources potentially means fewer course offerings, less access to modern instructional equipment, larger class sizes, reduced interaction with top faculty, longer waits for student services, longer time-to-degree, fewer student jobs, and fewer library holdings and services relative to the number of students enrolled. This negative impact comes at a time when students are being asked to cover a greater share of costs through tuition and fees.

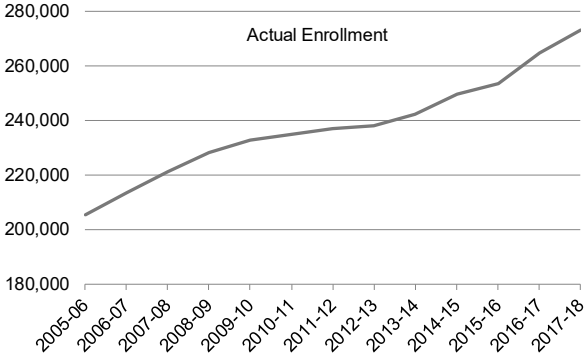
For faculty, the impact is similar. As funding remains constrained, fewer competitive offers can be made to new faculty. Existing faculty must manage the needs of ever-larger classes, with less assistance from additional faculty and graduate students and less time for research or public service. Working with outdated equipment in unmaintained buildings, faculty morale suffers and opportunities at other institutions become more attractive. If top faculty leave, UC's quality will suffer.

nonresident enrollment, the University's total enrollment has continued to grow since 2008-09 (see Display IV-10).

Between 2009-10 and 2012-13, the University took action to slow the rate of enrollment growth. The plan called for reducing the targeted number of new California resident freshmen enrolled by 3,800 students. To achieve this reduction, fewer students were admitted to the campus or campuses of their choice and more applications were sent to the referral pool for accommodation at Riverside and Merced. (Referral is the process by which UC-eligible California applicants who are not selected at any of the campuses where they apply are offered admission to an alternate campus.) Students had fewer campus choices and, in some cases, chose to pursue their education elsewhere. This freshman reduction was to be partially offset by a planned increase of 1,000 CCC transfer students, an action taken to preserve the transfer option in difficult economic times. The actual curtailment of enrollment was somewhat less than planned for freshmen (an average annual reduction of about 1,900 over the preceding four years) and the increase for transfers was somewhat more than planned (an average annual increase of 1,200 over the same four-year period).

The State budget provided $51.3 million to support 5,121 FTE students at UC at a marginal cost rate of $10,012 in 2010-11 (although a few weeks after the budget was signed, UC was informed of the State's intent to cut $500 million from its base – a cut that eventually rose to $750 million – so in essence, this enrollment growth was only temporarily funded). After four consecutive years of no new funding for enrollment growth (from 2011-12 through 2014-15) the Budget Acts of 2015 and 2016 have included enrollment growth funding, although at levels below the State's traditional marginal cost rate.

Display IV-10: Total Student Enrollment (FTE)



University projections called for enrollment growth of 2.5% annually through 2010-11 to accommodate Tidal Wave II and expansion of graduate enrollments. Enrollments grew more rapidly than expected and, in the four years between 2008-09 and 2012-13, the State was unable to provide funding for enrollment growth. Despite such fluctuations in State funding for enrollment growth, the University's total enrollment has continued to grow since 2008-09.

UC MERCED

The Merced campus was established as the tenth campus of the University of California to meet the state's overall needs for higher education as well as the needs of a significant and rapidly growing area of California – the San Joaquin Valley. Since officially opening its doors to freshmen, transfers, and graduate students in the fall of 2005 with just 875 students and 60 faculty members, the Merced campus has achieved critical milestones to mark the further development and expansion of the first new research university in the United States in the 21st century.

As the first new UC campus since 1965, the Merced campus has a rare opportunity to become an extraordinary institution as it builds on a heritage of distinction and legacy of excellence. Faculty, staff, and administrators have been drawn to Merced by the challenge of building and sustaining a unique institution in a traditionally underserved area of California. The collective energy and enthusiasm of those committed to development of the institution have resulted in the promise that the Merced campus will emerge as a world-class center of research, knowledge, intellectual relevance, and significance.

Educational Access

Student interest in the Merced campus has continued to grow since the campus opened 12 years ago (see Display IV-11). Over 22,600 students (freshmen and transfers) applied for admission for fall 2016, an increase of 13.5% over fall 2015. For the fall 2017 admissions process, nearly 25,000 students applied – a 10.4% increase over applicants for fall 2016.

In 2016-17, 93% of undergraduate students at the Merced campus were California residents, and nearly 57% were

members of underrepresented minorities. Display IV-12 provides demographic details about UC Merced's California resident undergraduates in fall 2016. Approximately 30% of the fall 2016 incoming undergraduate class came from the San Joaquin Valley. Moreover, among all fall 2017 undergraduates at UC Merced, 72.3% are first-generation college students. These students will serve as role models for others and help establish a college-going tradition in their families and communities. In academic year 2015-16 (the last year for which data are available), 61% of Merced's undergraduates received Pell Grants.

The Merced campus plays a major role in fulfilling the goals of the Regents and the State to ensure that every eligible student in California who applies is offered a place at UC, thus helping to maintain UC's commitment to the California Master Plan for Higher Education. UC Merced is also uniquely positioned to raise the college-going rate in the San Joaquin Valley and beyond. Continued growth of Merced is a high priority for the system.

Academic Innovation and Excellence

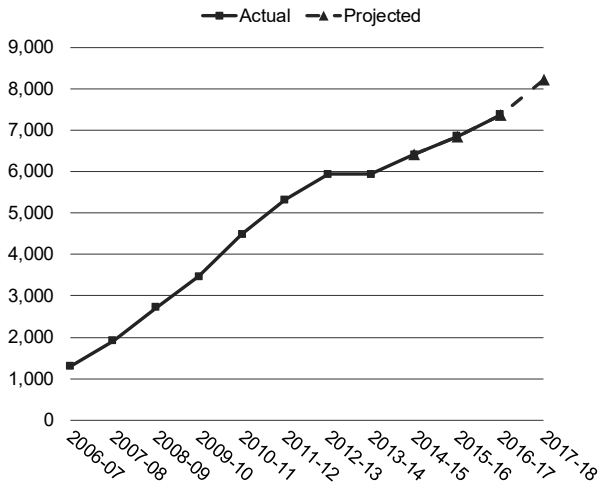
As a research university, the Merced campus is particularly focused on increasing the number of students in California who complete advanced degrees. In fall 2016, the campus enrolled 521 graduate students, 90.6% of whom were pursuing doctoral degrees. Graduate students work closely with distinguished Merced faculty on groundbreaking research across a wide array of disciplines.

The Merced campus is in many ways an educational laboratory. Its faculty and students are deeply engaged in innovative programs in both education and research. The Merced campus's 211 ladder rank faculty members, drawn from around the world, are leading the way in advancing cutting-edge curricula in majors that will support a vibrant range of academic offerings. Currently, students are able to choose from 23 majors and 25 minors.

Research

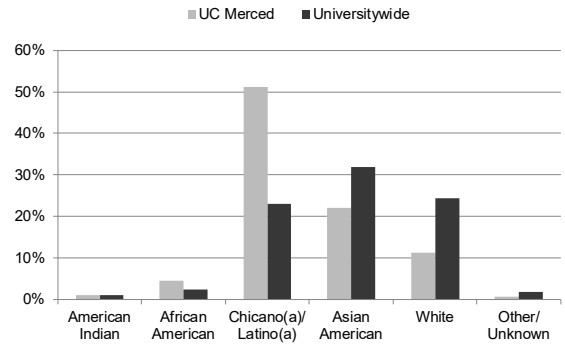
In terms of developing its research enterprise, the Merced campus continues to demonstrate remarkable achievement, having grown its research expenditures over fivefold, from $5.5 million in 2005-06 to $29.1 million in 2016-17 (see Display IV-13).

Display IV-11: UC Merced Total FTE Student Enrollment



Total FTE enrollment at the Merced campus reached 7,376 students in 2016-17. Interest in the Merced campus continues to grow.

Display IV-12: Fall 2016 California Resident Undergraduates by Race/Ethnicity



Among UC Merced undergraduates in fall 2016, more than 55% are students from underrepresented groups.

Awards have been granted by a variety of federal, State, and private sources, including the National Science Foundation, the National Institutes of Health, the U.S. Department of Agriculture, the Department of Energy, the California Department of Water Resources, and a number of private companies. The success in garnering extramural funding allows the Merced campus' innovative faculty and students to conduct trailblazing, multidisciplinary research in the campus' particular areas of strength, most notably climate change, solar and renewable energy, water quality and resources, artificial intelligence, cognitive science, and biomedical topics including complex human health issues and stem cell and cancer research. The faculty's

accomplishments in these areas are vital to the Merced campus' core mission as a research university with a strong commitment to graduate education.

A distinctive mark on research at the Merced campus is being made by its signature organizations: the Sierra Nevada Research Institute, the Health Sciences Research Institute, the UC Solar Research Institute, and the Center for Information Technology Research in the Interest of Society. The newly created arm of the Blum Center for Developing Economies will increase the campus's direct research involvement with communities within the San Joaquin Valley.

At the Merced campus, opportunities for undergraduates to become involved in research projects are a high priority. As with its instructional programs, the Merced campus' research institutes foster collaboration across disciplinary areas – the relationships among environmental science, human health, and environmental and health policy are examples of issues that are particularly important for the San Joaquin Valley. Partnerships with other UC campuses, Lawrence Berkeley National Laboratory and Lawrence Livermore National Laboratory, Sequoia and Kings Canyon National Parks, and Yosemite National Park, also enhance education and research at Merced.

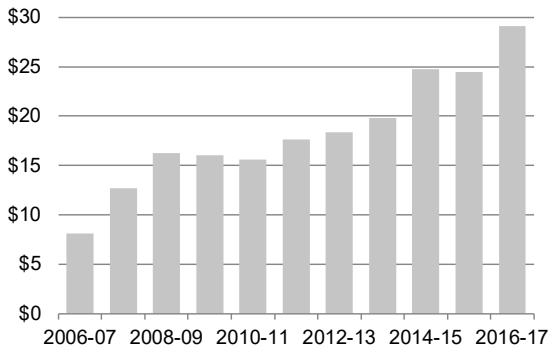
Economic Development

UC Merced serves the San Joaquin Valley as an economic engine. As the employer of more than 1,500 faculty and staff and a major user of local services, the campus continues to be a significant and growing contributor to the regional and state economy: since 2000, UC Merced has contributed more than $1.4 billion to the San Joaquin Valley economy and $2.6 billion to the State economy, including salaries, goods, and construction awards. Most importantly, the campus will continue to produce an educated workforce that will benefit the region and the state.

Essential Growth Funding and Continued Support

With the most diverse student body of any UC campus, UC Merced is the embodiment of the mission of the University of California. The Merced campus' educational and economic impact will continue to grow as the campus matures and as its research agenda continues to produce knowledge and innovations. Despite fiscal challenges, further investment in the Merced campus promises that the tenth campus, as first envisioned, will have a substantial impact on the Central Valley and on the state.

Display IV-13: Research Expenditures at UC Merced (Dollars in Millions)



UC Merced and its faculty are attracting significant research dollars to the San Joaquin Valley. As student enrollment grows and additional faculty members are hired, research awards should also continue to rise.

In order to keep the Merced campus on its intended trajectory, continued enrollment growth funding is essential. Given its small size, the campus is not yet able to realize the economies of scale required to maximize efficiency and absorb fiscal challenges. One of the Merced campus' greatest challenges for accommodating enrollment growth is sufficient and timely capital facilities development. The campus is faced with a growing gap between strong student demand for admission and the campus' limited capacity to provide the capital facilities and infrastructure needed to support that demand.

Merced Capital Development

To meet its goal of accommodating 10,000 students by 2020 and in response to the need for additional space, the Merced campus has embarked on a major initiative to further develop the campus, known as the 2020 Project. This ambitious initiative represents the next phase of campus development under the amended Long Range Development Plan. The project envisions a dynamic expansion of the existing Merced campus with new

mixed-use development that integrates students, faculty, and staff into a sustainable living and learning environment.

The Merced campus has entered into a public-private partnership with a developer to design, build, finance, operate, and maintain the 2020 Project. With an approximate cost of $1.3 billion, the 2020 Project represents the University's largest public-private partnership to date. The 2020 Project, which is currently in construction, will expand the campus by 790,000 assignable square feet of academic, administrative, research, recreational, student housing, and student services facilities that will accommodate the planned enrollment growth. The developer will act as the design and construction contractor, provide debt and equity financing, and operate and maintain major building systems for 35 years. This concessionaire approach is new to the University and represents a comprehensive, albeit complex, privatized delivery model.

The privatized project delivery method has the potential to provide facility design and construction quickly. The privatized approach allows the University to augment its capital delivery system and shift project construction and operating risk, while enhancing long term flexibility in situations where yielding control of the real property is appropriate.

The campus has continued to design and construct several additional facilities beyond the 2020 Project. The new Science and Engineering Building 2 opened in August 2014; the second classroom and office building opened in June 2016; and the critically-needed Central Plant Telecommunications Reliability Upgrade project was completed in fall 2016. The campus has also begun constructing an administrative building in Downtown Merced in order to consolidate staff and help reinvigorate the civic core of its host community.

The University must comply with environmental mitigation requirements, which the campus will meet by purchasing wetland turnkey credits. In addition, the campus is using a portion of the University of California Century Bond proceeds to fund the majority of the Downtown Merced administrative building and a small portion of the 2020 Project, as well as small infrastructure projects on the existing campus.

MAINTAINING FRESHMAN STUDENT ACCESS

In spite of increasing financial pressures in recent years, the University has maintained its commitment to the Master Plan for Higher Education to provide a place on at least one of the UC campuses for all eligible undergraduate California applicants who wish to attend. In recent years, applications for freshman admission from California high school seniors have increased significantly and the University has grown to accommodate all interested eligible students. UC received over 105,000 applications from California high school seniors for fall 2016 admission, or 2.3% more than in the prior year. Campuses received applications for fall 2017 admission from nearly 112,000 California high school seniors, a 6.1% increase over 2016, indicating the continuing demand among California's high school graduates for access to the University of California.

Admission Policies

The University strives each year to meet its commitment under the Master Plan to provide access to all eligible California high school graduating seniors who seek to attend UC. The University also strives to identify and enroll, on each of its campuses, a student body that demonstrates high academic achievement and exceptional personal talent, and that encompasses the broad diversity of backgrounds characteristic of California.

The impact of the University's admissions policy is continuously monitored and reviewed to ensure that the University receives applications from a broad range of students displaying high academic achievement and exceptional personal talent.

Eligibility for guaranteed admission. There are two paths to attaining guaranteed admission to UC for California residents: through the Statewide Context, based on grades and test scores placing an applicant in the top 9% of graduates statewide, and through the Local Context, based on a class rank placing an applicant in the top 9% within his/her high school. Both guarantee a space at UC, though not necessarily to the campus of choice. Consistent with past practice, California residents who are guaranteed

admission but are not accepted by any campus to which they apply are offered admission through the referral pool at one or more campuses with additional capacity. Currently, the Merced campus is the only campus offering admission through the referral pool. California resident applicants who have met all minimum requirements for freshman admission but are not identified in the top 9% in the state or within their high schools are entitled to review of their applications.

Comprehensive Review. The University's "comprehensive review" process, in place since 2002, ensures the admission of highly qualified students by allowing UC campuses to consider a variety of academic and other qualifications that all students present on the application. Data show that students admitted under comprehensive review present increasingly accomplished credentials.

All freshman applicant records are reviewed not only for their grades, test scores, and other academic criteria – important baseline indicators of academic potential – but also for additional evidence of such qualities as leadership, intellectual curiosity, and initiative. This policy sends a strong signal that UC is looking for students who have achieved at high levels and, in doing so, have challenged themselves to the greatest extent possible.

As part of its service to the State, UC is responsible for certifying courses offered in California's high schools as meeting the "a-g" course requirements, which are also required for eligibility to both the UC and the California State University (CSU) systems. For the 2016-17 academic year alone, UC reviewed nearly 30,000 high school courses for UC and CSU eligibility. UC's "a-g" course lists include over 180,000 approved courses from approximately 2,500 high schools and programs.

In recent years, a great deal of attention has been devoted to creating curricula that combine college-preparatory work with Career Technical Education (CTE). Courses that combine academic content knowledge with practical or work-related applications may be eligible for "a-g" approval. Through the work of the University of California Curriculum Integration (UCCI) initiative, which focuses on assisting high schools with the development and implementation of integrated courses that unite academic study with CTE, 253 institutions across California offered more than 475,000 public high school students the opportunity to enroll in "a-g"-approved UCCI courses in 2016-17.

TRANSFER FROM CALIFORNIA COMMUNITY COLLEGES TO UC

For those students who choose not to attend a four-year university directly out of high school, the ability to transfer from a California Community College (CCC) to a four-year institution helps sustain the State's commitment to educational opportunity for all. The California Master Plan prescribes a ratio of 60:40 in upper division to lower division undergraduate students in order to have ample upper division spaces for CCC transfer students. This 60% upper division proportion would be achieved if UC enrolled one upper division transfer student for every two new freshmen, assuming all students proceeded in lockstep. Many new freshmen attain upper division status in fewer than two years, however, through the application of Advanced Placement (AP) and other college credit. As a result, UC has been able to meet the 60:40 ratio without enrolling as many transfer students as were originally envisioned in the Master Plan. To ensure consistency with the Master Plan, UC's Commission on the Future recommended in 2011 that UC instead seek to reach the 2:1 ratio, resources permitting. As a demonstration of its commitment to this goal, the University agreed, subject to the availability of eligible transfer applicants, to work to achieve a ratio of enrolling one California resident transfer student for every two California resident freshmen (excluding Merced) by 2017-18 as part of the budget framework agreement with Governor Brown. It is anticipated that the University will achieve this goal at Berkeley, Davis, Los Angeles, San Diego, and Santa Barbara in 2017-18. As mentioned earlier, demonstrating a good faith effort to reach 2:1 at the remaining undergraduate campuses (except Merced) by 2018-19 is one of the five conditions that UC must meet to receive $50 million of its State General Fund appropriation per the Budget Act of 2017.

In 2017-18, UC enrolled over 17,000 California resident transfer students, the largest California resident transfer class in the University's history.

Transfer students are a crucial part of UC. The President's Transfer Initiative is streamlining the flow of CCC students to UC campuses by improving transfer students' awareness of UC as an attainable option, ensuring that the transfer roadmap is as clear and simple as possible, and supporting transfer students through their transition to UC.

The University's ability to achieve these goals has been enhanced by the development of "UC Transfer Pathways." These Pathways provide CCC students with a set of course expectations that will prepare them for admission to any UC campus. A specific goal to form pathways for a total of 21 top majors by 2016 was also incorporated into the budget framework agreement with Governor Brown. In spring 2015, pathways for 10 majors were completed. An additional 11 majors were developed in fall 2015. These 21 majors (http://admission.universityofcalifornia.edu/transfer/preparation-paths/index.html) are among the most popular with CCC transfer applicants. In spring 2017, UC released a new resource, the Transfer Pathways Guide (http://pathwaysguide.universityofcalifornia.edu/) that lists the courses at each community college that satisfy a Transfer Pathway.

Admission as a Transfer

Among transfer students admitted to the University, the vast majority are admitted at the junior level. In 2012, the UC Academic Senate approved changes to minimum transfer eligibility that respond to the development of new associate degrees for transfers from CCCs.

All UC campuses are open to new transfer students for each fall term. CCC transfer applicants who are California residents and who have met UC's minimum requirements and completed lower division major courses are given priority in transfer admission at all campuses.

As with freshman applicants, campuses use comprehensive review criteria for transfer applicants to select students for admission to majors and campuses. Selection criteria at campuses with more eligible applicants than spaces available include academic factors such as major preparation, including the completion of a UC Transfer Pathway, as well as evidence of such qualities as motivation, leadership, and intellectual curiosity.

TRANSFER MINIMUM REQUIREMENTS

California resident transfer applicants who meet one of the following paths are guaranteed a comprehensive review of their application for admission.

- Completion of at least 60 semester/90 quarter units of transferable coursework with a 2.4 GPA, including seven specific transferable courses with a C grade or better in each, or
- Completion of an approved Associate Degree for Transfer at a California Community College, or
- Completion of an approved UC Transfer Pathway.

Transfer Advising

In order to promote the transfer process, the University provides admission advisors who regularly travel to CCCs to meet with students and staff regarding transfer admission and lower division coursework preparation requirements. Efforts are focused on CCCs with high numbers of educationally disadvantaged students and historically low transfer rates to UC. To assist students preparing for transfer, UC developed the online Transfer Admission Planner (UC TAP), which allows students to begin tracking their completed coursework at CCCs in their freshman year and provides immediate feedback on their progress towards transfer. Furthermore, the tool allows UC and CCC counselors to track and communicate with potential transfer students. Additionally, UC campuses have transfer centers and advisors available to assist prospective and new transfer students who enroll at UC.

Course Articulation

In order to plan for transfer, students must know how the courses they take at a CCC will apply toward a degree at a particular UC campus. Articulation agreements are contracts between educational institutions that specify how a course that a student completes at one institution (e.g., a CCC) may be used to satisfy general education, major preparation, and/or graduation requirements at a second institution (e.g., a UC campus). Course articulation at UC falls into two categories:

- Universitywide Articulation. Transferable Course Agreements, reviewed by the UC Office of the President, designate which courses can be transferred for unit credit at any UC campus and meet University transfer admission requirements.
- Major Preparation Articulation. Each UC campus designates which courses at the community college are comparable to courses taught at the UC campus in a specific major program and will be accepted as transfer credit toward the University's requirements. Each UC campus has articulated high-demand majors with all 113 CCCs, and all campuses (except Merced) have more than 70 majors articulated on average with all of the CCCs.

Students can satisfy lower division general education courses by completing the Intersegmental General Education Transfer Curriculum (IGETC). In addition to completing general education requirements, students must complete specified coursework to prepare for their major.

CCC students have two primary tools to navigate the transfer path. Students can locate course articulation agreements at www.assist.org. ASSIST, the Articulation System Stimulating Interinstitutional Student Transfer, includes all official course articulation established among CCC, CSU, and UC; more than 20 million articulation reports are generated annually for students.

As described earlier, through the President's Transfer Initiative, University faculty have developed a second tool, UC Transfer Pathways, a single set of course expectations a student can take to prepare for a particular major on any of UC's nine undergraduate campuses (that offer the major). Currently there are 21 identified Pathways that will help position students to graduate on time. This information is available at the following site:

http://admission.universityofcalifornia.edu/transfer/preparation-paths/index.html.

In addition, a new online resource, the UC Transfer Pathways Guide, shows prospective transfers which UC-transferable courses from ASSIST meet the specific course expectations of a given Pathway:

https://pathwaysguide.universityofcalifornia.edu/.

UNDERGRADUATE NONRESIDENT ENROLLMENT

UC's priority is to enroll all eligible California residents for whom the State has provided funding. The California Master Plan for Higher Education calls upon UC to offer a space to, and the State to fund, all eligible California resident applicants at both the freshman and transfer levels. Campus enrollment targets for California residents are established on a university-wide level based on available State funding and campus growth plans.

Just as other forms of diversity enhance the educational experiences of students, California's dependence on an increasingly global society and economy requires geographic diversity among the student body. Nonresident students are essential to the University, contributing to the academic quality and educational experience of all students and enhancing the diversity of backgrounds and perspectives on the campuses at which they enroll. Their contributions help prepare all UC students to live and work effectively in an increasingly global world. Nonresident enrollments also help grow and sustain the University's global reach, promoting new opportunities for students and faculty.

A major priority for the University is that campuses ensure that enrollment of nonresident students does not displace funded enrollment of California residents.

Until 2011-12, UC enrollment of undergraduate nonresidents was about 5% of total undergraduate enrollments across the system. With the onset of the recent fiscal crisis, UC began to increase the enrollment of nonresidents in addition to continuing its commitment to continuing resident undergraduate enrollment. For 2017-18, the systemwide total of undergraduate nonresidents is projected to be 35,155, or 17.2% of total undergraduate enrollment. UC continues to enroll a much lower percentage of nonresident undergraduate students compared to its public peer institutions. For example, at the University of Michigan and the University of Virginia, nonresidents comprise more than 44% and 30%, respectively, of undergraduates.

Nonresident enrollment at UC has increased in recent years primarily to help campuses address major funding shortfalls related to unprecedented cuts in State funding.

Nonresident undergraduates pay over $28,000 more than California residents in Nonresident Supplemental Tuition, providing extra revenue that enables UC to improve educational programs for all students. Among other things, Nonresident Supplemental Tuition revenue is used to help recruit and retain high-quality faculty, mount additional courses that help lower class sizes and expand the breadth of offerings, expand library collections and services for students, renew instructional equipment and technology, and otherwise help to ameliorate the challenges to academic quality described earlier in this chapter.

Many nonresident students choose to stay in California after graduation from UC. The State itself reaps benefits from the contributions to California industries of talented and highly qualified nonresident UC graduates. As discussed in the *UC's Role in the State of California* and *Health Sciences Instruction* chapters of this document, California is in desperate need of college-educated workers in many industries. Nonresidents who stay in California after earning their degree at UC bolster the pool of highly educated workers in California and make significant contributions to the State economy.

As noted previously, nonresident students do not displace California residents who are funded by the State. UC sets enrollment targets for California students based on the funding it receives from the State. Targets for nonresident students are set over and above targets for funded California resident enrollment based on its remaining physical and instructional capacity. UC's enrollment of nonresident students is – and will continue to be – low relative to comparable institutions, and will be in addition to enrollment of funded California resident students.

As part of the conditions set by the Legislature for receiving funds to support enrollment growth in 2017-18, the Budget Act of 2016 called upon the University to adopt a policy on enrollment of nonresident students. The UC Board of Regents adopted such a policy in May 2017, reaffirming UC's historic commitment to California residents by limiting the proportion of out-of-state and international students at its nine undergraduate campuses. Under this policy, nonresident enrollment will be capped at 18% at five UC campuses. At the other four campuses where the proportion of nonresident undergraduates exceeds 18% – Berkeley, Irvine, UCLA, and San Diego – nonresident enrollment will be capped at the proportion that each campus enrolls in the 2017-18 academic year. The policy will be reviewed, at a minimum, once every four years to ensure that nonresident enrollment continues to enhance the academic experience, access, and affordability for California resident students.

SUMMER INSTRUCTION

The University, with funding from the State, began expanding summer instruction programs in 2001. Since that time, the University has more than doubled its summer enrollments. As Display IV-14 demonstrates, over 79,700 UC students (or nearly 16,000 FTE) participated in summer instruction in summer 2016.

Campuses have more than doubled the number of primary classes offered in the summer since 2000, totaling nearly 5,600 in 2016. Summer expansion has resulted in more efficient use of facilities and accelerated time to degree for undergraduates, thereby making room for more students during the regular year. Students report using summer as a means to graduate on time or even early; they also report enjoying the smaller class sizes and faculty contact.

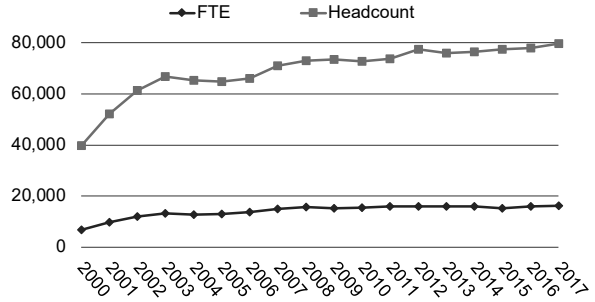
In recent years, nearly 70% of undergraduate students have enrolled in at least one summer session, and nearly 40% enroll more than once (see Display IV-15) even though students can also use summer for other opportunities, such as work, travel, or internships. This participation rate has stabilized in recent years. However, the University believes the potential exists to further expand summer enrollment, which will play an important role in the University's efforts to serve more California resident undergraduates.

As part of the budget framework agreement with Governor Brown, the University agreed to pilot three initiatives aimed at increasing summer enrollment through alternative pricing models. These pilots were established in the 2016 summer session and included the following:

- an enhanced and expanded summer enrollment loan program available to all financially needy students, including middle-class students. In addition, incoming freshmen will be offered a tuition-free two-unit online course designed to help students find an appropriate major (Berkeley);
- a summer fee cap whereby current and incoming UC students pay no fees for any additional units taken above eight units (Irvine); and
- low-cost summer housing rates for continuing students who enroll in summer (San Diego).

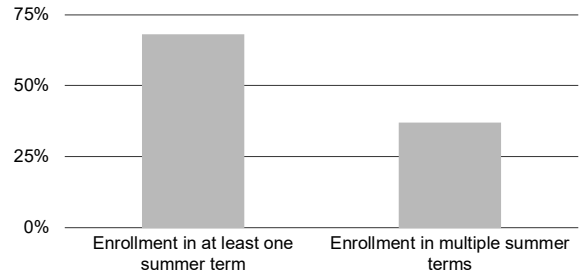
All three campuses implemented marketing plans to ensure the initiatives were widely known, and the three pilot campuses ultimately increased enrollment over the prior year by 638 FTE, compared to an increase at the six non-pilot campuses of 106 FTE. A report about these alternative pricing models has been disseminated to all nine undergraduate campuses and has been posted to the following site: http://ucop.edu/institutional-research-academic-planning/_files/2016-Summer-Session-Pilot-Outcomes-final-report.pdf.

Display IV-14: Summer Term Headcount and FTE Enrollment at UC



FTE enrollment in summer instruction has grown by 139% since 2000.

Display IV-15: Summer Enrollment Patterns of UC Undergraduates



Among undergraduates who entered UC in 2011 and 2012, nearly 70% enrolled in at least one summer term during their undergraduate careers, and nearly 40% enrolled in summer courses during more than one year.

GRADUATE STUDENT ENROLLMENT

Graduate education and research at UC have long fueled California's innovation and development, helping establish California as the sixth largest economy in the world. Indeed, UC is charged by the California Master Plan for Higher Education with the responsibility to prepare professional and doctoral students to help meet California's and the nation's workforce needs.

However, over the last 40 years, while well-justified attention has been paid to accommodating undergraduate enrollment growth as a result of Tidal Waves I and II, graduate enrollment growth has not kept pace with undergraduate enrollment growth.

As noted earlier in this chapter, UC's 2017-18 budget plan included a request for $9 million in State funding to support graduate student enrollment. The State ultimately granted $5 million, which will help the University in its efforts to enroll proportionate levels of graduate and undergraduate students.

Despite high-quality programs and many applicants, growth in graduate programs has been limited due to the lack of State support, creating an imbalance in University programs and preventing the University from keeping pace with growing workforce needs.

Since 1967-68, UC undergraduate enrollments have grown dramatically, from 59,000 FTE to an estimated 220,000 FTE in 2017-18, or more than 270% over 50 years. General campus graduate enrollment has grown at a much slower rate, from approximately 22,400 to an estimated 37,500 FTE in 2017-18, only 67%, during the same period. In fact, during the 1980s and early 1990s, graduate enrollment did not increase at all; much of the growth occurred during the early 2000s (see Display IV-16).

As a consequence of this imbalance, the proportion of graduate students decreased from 27.5% of general campus enrollment in 1967-68 to an all-time low of 14.4% in 2016-17. Although UC's graduate enrollments began to grow again in 1999-00 by an average of 1,000 FTE

students per year, they still have not kept pace with undergraduate growth, as Display IV-17 demonstrates.

The graduate student percentage of total enrollment has declined in recent years though graduate enrollments in raw numbers have risen slightly. (An increase in graduate professional students was partly offset by a decrease in graduate academic students.) UC's enrollments of graduate academic and graduate professional students (including health sciences and self-supporting enrollments) is about 21% of total UC enrollment, while among other Association of American Universities (AAU) institutions, approximately 32% of public and roughly 64% of private enrollments were graduate students. As Display IV-18 illustrates, UC's total graduate percentage is lower than the average among all of UC's eight comparison institutions.

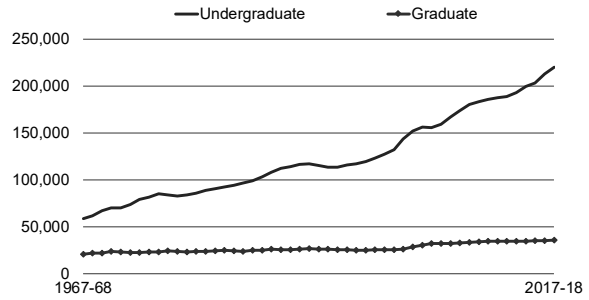
UC has fallen behind in graduate enrollment for several reasons. Because of State budget constraints in the 1980s and 1990s, undergraduate growth was prioritized to ensure access to all eligible undergraduates choosing to attend UC. But graduate enrollment growth has also been slowed in many cases by the inability of departments to secure adequate and competitive student financial support. Higher education norms dictate that programs provide funding to support their Ph.D. students. Competitive funding packages are critical to attract top-quality students.

Graduate enrollments in high-quality UC programs are critical to the State's economic, social, and cultural development. In addition, UC graduate students play a vital role as future faculty in higher education in California, and help enhance the quality of the instructional and research enterprise while enrolled at UC.

UC is committed to training an academic graduate population that reflects the diversity of the state and nation. African-American/Black students are extremely underrepresented in UC graduate and professional programs. The five-year average (2012-2016) for enrollment of African Americans in UC academic doctoral programs is 3.1%.

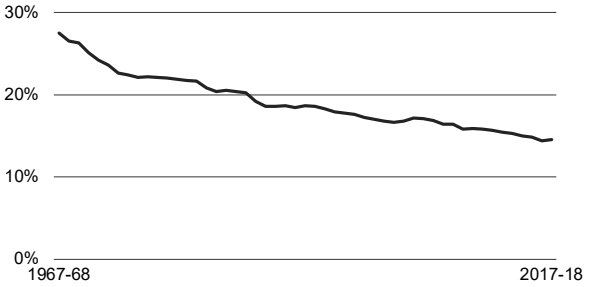
In order to enhance the pipeline of underrepresented minority students who earn advanced degrees, UC launched an initiative that provides fellowships to UC Ph.D.

Display IV-16: Undergraduate and Graduate General Campus FTE Enrollment



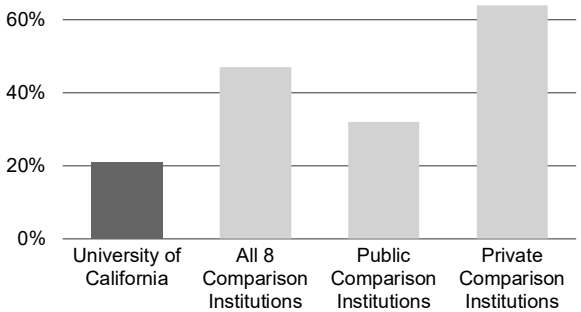
Since the 1960s, UC's undergraduate enrollment has grown rapidly, but graduate enrollment has not kept pace. While undergraduate enrollment has grown over 270%, graduate enrollment has only grown about 70%.

Display IV-17: Graduate Students as a Percentage of General Campus Enrollment



The proportion of graduate enrollment on the general campuses has fallen from nearly 30% in the 1960s to below 15% in recent years.

Display IV-18: Proportion of Graduate Enrollment at UC and Comparison Institutions



In fall 2015 (the most recent year for which comparison institution data are available), 21% of total UC enrollment was graduate academic and graduate professional students (including health sciences and self-supporting enrollments), compared to 32% at its four public comparison universities and 64% at its four private comparison universities.

students who participated in the UC-Historically Black Colleges and Universities (HBCUs) Initiative. The UC-HBCU Initiative seeks to improve the representation of HBCU alumni in UC graduate programs, particularly Ph.D. programs, by investing in relationships and projects with HBCU students and faculty.

A diverse faculty is a crucial part of any strong research institution. The University of California President's Postdoctoral Fellowship Program (PPFP) offers postdoctoral research fellowships, professional development, and faculty mentoring to outstanding scholars across fields whose research, teaching, and service contribute to diversity and equal opportunity at UC. In addition, UC is working to increase the number of PPFP fellows hired as UC faculty at the completion of their fellowships. Indeed, since 2004, 175 PPFP fellows have been hired into tenure-track positions at University of California campuses.

In January 2014, UC President Janet Napolitano committed $5 million to continue the salary hiring incentive and to initiate a new start-up hiring incentive for President's and Chancellors' postdoctoral fellows appointed since 1996 who obtain tenure-track faculty appointments at one of the UC general campuses. The salary hiring incentive supports former fellows in all fields and provides five years of partial salary support to the campus. The $5 million was a one-time allocation committed through June 2017.

As mentioned in the "Cross-Cutting Issues" chapter of this document, the Budget Act of 2016 included an allocation of $2 million on a one-time basis for "a program to support best practices in equal employment opportunity." It also stated that the Regents shall submit to the Director of Finance and the Legislature a report that includes the number of ladder-rank faculty at UC, disaggregated by race, ethnicity, and gender, and a description of the specific uses of these funds to support equal employment opportunity in faculty employment.

The University's report, which was submitted in November 2016, explained that this one-time funding focused on three campus units in 2016-17, enabling the University to supplement its ongoing systemwide efforts with targeted efforts that might be transferable outside of pilot units. These units included the College of Agricultural and Environmental Sciences at UC Davis, the Bourns College of Engineering at UC Riverside, and the Jacobs School of Engineering at UC San Diego. Four comparator schools/colleges and one campus-based IT unit also received a small portion of the one-time funds to support their role in the project.

The interventions supported by this funding resulted in a substantial increase in the percentage of Underrepresented Minority (URM) finalists in all three pilot units, and two of the pilot units had a substantial increase in the percentage of both URM and female faculty as finalists and of those hired. All three units saw significant change in practice and conversation. A full report on the results of these interventions will be made available in December 2017.

The Budget Act of 2017 also includes a one-time allocation of $2 million to continue advancing the University's efforts to increase faculty diversity. The University welcomes this additional support, and is currently planning for the distribution of these funds to campus units.

Graduate Education and the State's Economy

UC graduate education and research have a long history of fueling economic development in California. UC graduate education and research spawned the biotechnology industry, and UC graduates have been drivers in the development of the electronics industry, particularly in communications and semiconductors.

UC graduate programs directly contribute to California's research and development-intensive industry sectors by supplying highly trained alumni and attracting industry to California. Companies in knowledge-based industries tend to form clusters around major universities to take advantage of access to the pool of specialized workers and to benefit from knowledge transfers from the concentration of research, innovation, and specialization.

In the future, California's economy will depend even more on high-tech industries. Stem cell research, environmental research and innovation, global health care delivery, and energy research will have significant impacts on the health and economy of California and the world.

In the coming years, all sectors of California's economy will need many more highly educated workers — engineers, scientists, business entrepreneurs, and others whose innovations will drive California's prosperity. In keeping with its charge under the Master Plan, the University will play a key role in helping to meet the need for these technically and analytically sophisticated workers. In addition, the looming retirement of highly-educated workers in the large "baby boom" generation and the declining in-migration of educated workers from other states and nations create significant challenges for California's economy. Growth in UC's graduate programs would help meet the need for more science and technology professionals.

UC's contribution toward fulfilling the State's need for intellectual resources is not limited to science, engineering, and health care. In addition to the needs of a technology-based economy, California and the nation face many social challenges that require highly-educated individuals to analyze and solve problems as they shape California's future. UC graduate programs in the arts, humanities, social sciences, and professional fields continue to serve these needs.

- Professional and managerial jobs, such as financial managers, marketing executives, software developers, engineers, and research analysts, are among California's fastest growing occupations.[2] These professional and managerial jobs typically require at least a bachelor's degree and often a master's degree or doctorate.
- UC prepares highly skilled and creative school administrators, architects, lawyers, public health and public policy analysts, social workers, urban planners, and other professionals who add to the State's economic and social well-being.
- Creative industries in California, such as entertainment and digital media, also contribute to the State's economic growth. According to the Bureau of Economic Analysis (BEA), the arts contributed $86.79 billion, or 3.5 percent, to California's gross domestic product in 2015.[3] Alumni of UC's graduate programs are represented in every sector of the arts world, leading and building programs and creating new ideas. California's entertainment and digital media industries are thriving precisely because of the many writers, musicians, visual artists, and actors the University trains.

Graduate Students and Higher Education

UC graduate students play a critical role in higher education in California, both as future faculty at UC, CSU, and other California colleges and universities, and as teaching and research assistants while in graduate school. Both UC and CSU depend heavily on the graduates of UC's Ph.D. programs: nearly a quarter of UC and CSU tenure-track faculty members have a doctoral degree from UC.

California's four-year colleges and universities will need to hire tens of thousands of new faculty over the next decade not only to replace retiring faculty, but also to address projected shortfalls in college graduates. Because many doctoral institutions in other states are not planning graduate enrollment increases, even more of these new college faculty than in the past may need to come from UC's graduate programs.

Growth in graduate enrollments is necessary to maintain excellence in instruction and research. New faculty members are attracted to UC in part because of the high caliber of graduate students with whom they can work. In 2016-17, UC attracted significant percentages of students with prestigious fellowships: 13% of NSF fellowship recipients and 16% of Ford fellowship recipients chose to attend UC. Graduate students also work as teaching assistants, helping to meet UC's overall instructional needs, though their primary importance lies in the ways they complement faculty roles: leading small discussion groups and laboratory sections, offering a wider range of perspectives and teaching delivery modes, and serving as near-peer mentors for undergraduates.

Graduate students are vital to UC's discovery and innovation enterprise. Especially in the sciences and engineering, the research process entails teamwork, and graduate student researchers, as key members of these teams, have been central to the creative breakthroughs that

[2] Employment Development Department. "Top 100 Fastest Growing Occupations in California, 2014-2024." *State of California.* 2015. Web. http://www.labormarketinfo.edd.ca.gov/OccGuides/FastGrowingOcc.aspx

[3] BEA. "Real Value Added to The Gross Domestic Product (GDP) of California in 2015, by Industry (in Billion Chained 2009 U.S. Dollars)." *Statista - The Statistics Portal*. Statista. June 2016. Web. https://www.statista.com/statistics/304869/california-real-gdp-by-industry/

have made UC one of the world's greatest universities. Graduate students further amplify UC's research contributions by supervising and mentoring undergraduates engaged in research projects, thus enabling greater involvement of undergraduates in primary research activities.

In the 21st century, access to a graduate education is becoming increasingly necessary to engage in analytic work across fields. For this reason, many Tidal Wave II undergraduates will seek to further their education beyond the baccalaureate level in the coming years. Following the extraordinary growth of high school graduates during the last decade, California's 25-34 year-old population will grow 17% between 2010 and 2020. As a result, demand for graduate education will increase substantially.

It is likely that a portion of this growing demand will be attributable to the University's own baccalaureate degree graduates. About 67% of UC undergraduates state a desire to earn a graduate or professional degree after they graduate from UC.

UC must also be particularly vigilant about ensuring access to graduate education for historically underrepresented groups, including individuals from disadvantaged socioeconomic backgrounds. Within the next 10 to 15 years, underrepresented minorities will be the majority of California's population. For California to meet its growing workforce needs and to maximize the potential of so much unrealized talent within the State, UC must help far more students pursue graduate study. Graduate student support is a key factor in enrolling additional graduate students. The *Student Financial Aid* chapter of this document discusses graduate student support in further detail.

ONLINE EDUCATION AT UC

Interest in and enthusiasm for online learning at UC continues to grow, with increasing recognition of the important role technology and innovation play in providing a high quality and engaging education for UC students. All 10 campuses offer online learning opportunities. Systemwide, UC offers fully online courses and programs, as well as online components of courses to UC undergraduate and graduate students, thereby enhancing learning opportunities, strengthening teaching and learning, and providing increased access to the needed courses for timely graduation and degrees.

Prior to launching a systemwide initiative in 2013 to increase online education, UC offered approximately 2,600 online courses totaling over 90,000 student enrollments. As previously reported, the majority of these online courses and enrollments were associated with certificate and/or other extension programs, as described in the *Self-Supporting Instructional Programs* chapter of this document. These courses and programs are not typically designed or offered for credit towards graduation to UC undergraduate students.

Over the past four years, with input and funding from the Legislature and Governor Brown, UC has emphasized providing enrolled undergraduate students with flexible and innovative learning opportunities that count towards degree requirements. Continuing to leverage the $10 million in annual funding for online education provided to the University, UC operates the Innovative Learning Technology Initiative (ILTI). This program focuses on the development of online and hybrid courses, campus and systemwide infrastructure, cross-campus course instruction, and evaluation and accountability efforts.

In 2016-17, ILTI's accomplishments included:

- awarding funds for the development of 35 online and hybrid undergraduate courses to be offered to students across the UC system during the academic year, including five courses for a fully online minor in education at UCB, and seven courses as part of the Global Health Initiative;
- offering more than 120 online courses to UC undergraduates systemwide during the academic year. In total, more than 30,000 UC undergraduate students enrolled in and completed these courses, including approximately 500 cross-campus students (UC students enrolling in online courses offered at other UC campuses during the academic year);
- increasing the number of online courses that provide General Education (GE), pre-major, major credit and/or course equivalence at other UC campuses through focused and sustained efforts;
- enhancing the central infrastructure necessary to support online cross-campus offerings; and
- creating compatibility between campus registration systems and building a cross-campus enrollment website with a searchable database of courses.

Individual campuses are utilizing innovative online approaches to enhance teaching and learning. Specifically;

- Berkeley's Graduate School of Education has developed a fully online undergraduate minor in education, the most popular minor on campus, with student representation from 70 different majors. The courses utilize a constructivist approach to learning, emphasizing peer-to-peer learning through group work.
- The University of California Global Health Institute (GHI), through ILTI, is developing seven undergraduate courses on a range of topics related to global health, including health equity and social justice, health diplomacy, migration, and the environment. Each course involves cross-campus teams, with all ten UC campuses represented. Because of the transdisciplinary nature of global health, it is difficult for each campus to have all of the expertise necessary to deliver a complete global health curriculum. These courses leverage global health faculty expertise at the individual campuses, making that expertise available to UC students across the system.
- UCLA's Professor William Worger, History, is developing an interactive map of Africa to use in teaching and research. The tool allows layers to be added and removed to display different historical periods and elements of geography and topography. This tool will support the African History course and will enable students and researchers to add their own layers and meta data.
- UCSC Professors Tony Tromba and Frank Bauerle have launched Calculus III and are currently working on Calculus IV to complete UCSC's four course, online sequence in Calculus. The online Calculus sequence employs an online textbook written and piloted by Tromba and Bauerle. That online text is now being used in universities across the nation. Over the last four years, Tromba and Bauerle have also produced a rich video lecture library of approximately 400 short video lectures for the courses.
- UCR's Professor Juliette Levy, History, utilizes podcasts of her lectures to accompany other media for her course on 20th Century History. Students subscribe to the podcasts on their own devices and receive weekly downloads during the course. Students create their own podcasts relating their family histories to major events of the 20th Century.
- UCD's Robert Blake has developed four fully online courses for introductory and intermediate Spanish. Each course has online scenario-based dialog videos and a live lecture component emphasizing small group learning in breakout rooms. The methodology used in the courses represents best practices in the development of reading, writing, speaking, and listening in a second language.

With the development of new tools and applications, by UC and externally, online courses leverage interactive tools and technologies to support quality learning opportunities. These tools support and facilitate UC student engagement with content, faculty, and other students.

UC also offers advanced degree programs with online components. The programs include: a Public Health Master, an Advanced Studies in Integrated Circuits Master, an Information and Data Science Master, and a Journalism Master at UC Berkeley; a Criminology, Law and Society Master and Doctorate, a Human Computer Interaction and Design Master, and a Forensic Psychology Master at UC Irvine; a fully online Engineering Master, an MBA, and an Aerospace Engineering Master and Doctorate at UCLA; an Engineering Master and Statistics Master at UC Riverside; a Computational Science, Mathematics and Engineering Master at UCSD; a Healthcare Administration and Interprofessional Leadership Master, and a Nursing Practice Master at UCSF, as well as a fully online Health Policy Law degree. Many of UC's top-ranked graduate and professional programs offer online executive education and are actively developing more online degree programs.

Additionally, UC has reached out to the broader educational community in California. UC's Scout program makes it possible for high schools to offer approved "a-g" courses online. Schools, teachers, and students can choose from a variety of online "a-g" and College Prep approved Advanced Placement courses. Moreover, the University received $4 million in one-time funds in the 2016-17 budget to expand the UC Scout program by increasing the number of courses offered through the A-G Success Initiative. This initiative entails developing at least 45 high-quality online middle school and high school classes approved by the University to satisfy the "a-g" subject requirements.

Enthusiasm for online and hybrid teaching and learning is accelerating at UC. Students, staff and faculty are increasingly sophisticated in how they interact with and utilize technology to enrich teaching and learning. As UC moves forward with online education, it will continue to evaluate the efficacy of the online environment to better support and enhance teaching and learning.

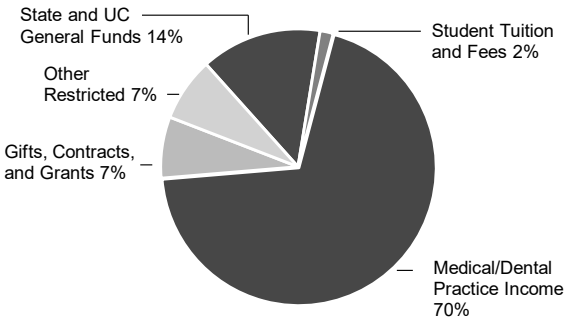
Health Sciences Instruction

The University of California plays a critical role in training health professionals, conducting scientific research, and delivering high-quality health services.

- UC operates the largest health sciences instructional program in the nation, enrolling over 14,900 students across 18 schools at seven campuses. These include schools of dentistry, medicine, nursing, optometry, pharmacy, public health, and veterinary medicine. Across the health professions, UC programs provide an unparalleled integration of education, research, and patient care.
- UC's research discoveries help prevent and cure diseases, create new technologies for diagnosing and treating illnesses, and provide new strategies for staying healthy. Beyond millions in federal and philanthropic dollars invested in the state through research contracts and grants, UC's contributions to the prevention and treatment of chronic medical conditions such as asthma, cardiovascular disease, and diabetes help improve health outcomes and achieve savings and economic productivity.
- UC operates five academic medical centers, providing high-quality health services to millions of Californians every year, as described in greater detail in the *Teaching Hospitals* chapter of this document. In addition, UC provides education, prevention, and early intervention services to thousands of Californians through community health and outreach programs.

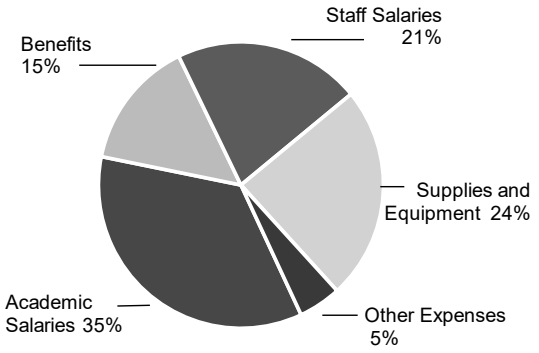
The ultimate goal of all UC health sciences programs is to train skilled, knowledgeable, and compassionate healthcare professionals; to improve healthcare outcomes through state-of-the-art research; and to deliver high-quality health services in California and worldwide.

Display V-1: 2016-17 Health Sciences Instruction Expenditures by Fund Source (Total: $3.0 Billion)



Physician and other professional fee revenue as well as support from the medical centers contribute substantially to funding the cost of clinical training in the health sciences.

Display V-2: 2016-17 Health Sciences Instruction Expenditures by Category (Total: $3.0 Billion)



Academic and staff salaries and benefits constitute over two-thirds of all health sciences expenditures.

FUNDING FOR HEALTH SCIENCES

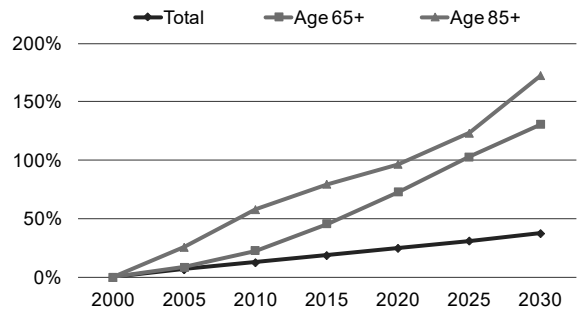
In 2016-17, expenditures for health sciences instruction totaled $3.0 billion, of which $431 million were UC and State General Funds. The patient care services provided by UC health sciences faculty also generate significant revenue, which provides valuable support for health sciences instruction.

To operate the instructional program, the health sciences schools require faculty, administrative and staff personnel, supplies, space and equipment. Faculty requirements for instruction are linked to historic student-faculty ratios initially established for each profession and category of students enrolled. These lower student-faculty ratios reflect the intensity and requirements of both basic sciences and clinical instruction, including associated medical and legal responsibilities for supervision of students engaged in direct patient care.

Because of the high costs associated with health sciences education, State support for these programs remains an important resource. As a result of substantial multi-year budget cuts, however, other revenue sources have become more essential. Physician and other professional service fees, and increasingly, Professional Degree Supplemental Tuition (PDST) charged to students in medicine, dentistry,

veterinary medicine, nursing, optometry, public health, physical therapy, and pharmacy are necessary to support UC instructional programs. During the State's fiscal crisis of the early 2000s, State support for UC's professional schools was substantially reduced and professional fees increased to offset lost State revenue. More recently, PDST has increased in order to maintain quality and academic excellence. Although schools have accelerated efforts to address the consequences of rising tuition by increasing scholarship funds, the collective impact of these rapid increases raises serious concerns about rising educational debt. Continued efforts will be required to contain costs, maintain and enhance access, and keep student debt at manageable levels.

Display V-3: Projected California Population Growth by Age Group



Between 2000 and 2030, the Census Bureau projects that California's population will grow by 37%. During that time, the population age 65 and older will grow 130% and the population age 85 and older will grow 170%.

STATE NEEDS FOR HEALTH SCIENCES EXPANSION

Already the most populous state in the nation, California is projected to grow by an estimated 37% through 2030, faster than the nation as a whole. California's elderly population will grow even more rapidly, with the population age 85 or older growing by 170% by 2030, as shown in Display V-3. California's population is already more racially and culturally diverse than any other state in the nation, with more than one in four Californians born outside the U.S., more than twice the national average of one in 10.

UC has added very little new capacity in health sciences programs for more than four decades. In fact, only recently has the University increased medical student enrollment through new programs in medical education and nursing enrollments through modest growth in existing programs and development of new ones.

In June 2005, the University completed the most comprehensive assessment of health workforce needs undertaken by UC in more than two decades. The report found shortages of healthcare professionals in most areas of the state and noted widening gaps in access to care.

In response, then-President Dynes appointed the Advisory Council on Future Growth in the Health Professions to review the findings and develop profession-specific enrollment plans with annual targets for growth through 2020. The Council found compelling needs for enrollment growth in five professions: medicine, nursing, public health, pharmacy, and veterinary medicine, as well as a need to maintain existing enrollment levels in dentistry and optometry. The Council recommended that growth in the health professions occur in a phased, stepwise manner, contingent upon adequate resources, beginning with enrollment increases that could be accommodated within existing campus infrastructures.

In recommending these enrollment increases, the Council stressed that future growth should provide opportunities for:

- new educational models involving interdisciplinary training and team-based approaches to patient care;
- increased diversity of all UC health professions faculty and students;
- innovative approaches to teaching, including telemedicine, distance learning, and use of new technologies; and
- added value for students, the people of California, and the health professions.

HEALTH SCIENCES FUNDING PRIORITIES

For 2017-18, the University's health sciences budget priorities include securing permanent State support for the School of Medicine at UC Riverside, the recently established Schools of Nursing at UC Davis and UC Irvine, and UC Programs in Medical Education (PRIME).

UC RIVERSIDE SCHOOL OF MEDICINE

The School of Medicine at UC Riverside, which opened in 2013 as the first public MD-granting medical school to open

in California in over 40 years, is helping meet healthcare needs in the state and Inland Southern California by expanding access, educating physicians who are likely to enter residencies and practices in the region and state, training a culturally competent and diverse physician workforce, and undertaking research and clinical care that will improve the health of people living in the region. Of the heavily populated regions in the state, Inland Southern California has the greatest shortage of primary care physicians according to the Healthforce Center at UCSF.

Now enrolling more than 230 medical students, the goals of the Riverside School of Medicine focus on transforming the way healthcare is delivered to the community by:

- selecting students oriented to the mission of the school, with preference for those who have ties to Inland Southern California, and creating new residency training slots in the region;
- improving the population's health through proactive primary and preventive care, effective management of chronic diseases, and filling gaps in the region's subspecialty services;
- enhancing the patient care experience by providing accessible, timely, and culturally sensitive services;
- lowering healthcare costs by implementing a medical home model of care that emphasizes prevention, wellness, and chronic disease management by reducing variations in practice and outcomes and improving efficient use of specialty care services; and
- developing research and clinical expertise in population-based assessment of health and wellness, health interventions, healthcare disparities, and access.

In 2012-13, the Riverside School of Medicine secured preliminary accreditation from the Liaison Committee on Medical Education (LCME) and enrolled its first class of 50 students in August 2013. The School was granted provisional accreditation in June 2015 and received full accreditation from LCME in June 2017. In 2013-14, the Legislature and Governor redirected $15 million from the University's base budget augmentation to fund start-up activities and to begin to build a secure base of resources to open the new school. While this funding helped in starting the first phase of the establishment of the medical school, additional State funding will be required to support full build-out, currently targeted at 500 students. Permanent core support from the State will remain essential for the School of Medicine to grow and achieve its mission.

State funds have been used to continue developing the school's operational infrastructure and faculty as it built its medical student enrollment toward the full initial complement of medical students and developed new residency training programs. State funding has enabled the school to hire the additional faculty necessary to deliver the curriculum to a greater number of students than the Riverside medical program had previously taught, develop the third- and fourth-year educational platform for medical students (which previously took place at the Los Angeles campus), and build new graduate medical education programs to provide the post-MD training required for physicians to become fully independent and board certified. Toward this end, during 2017-18, the School of Medicine is continuing to expand both its basic science and clinical faculty, and to develop new clinical care programs in the community.

The school has additionally made significant progress on two of its other key strategies for retaining physicians in the Inland Empire – expanding student pipeline programs to prepare more of the region's students for careers in medicine and health, and building new residency training programs. These strategies address the two principal determinants of where physicians practice: where they grow up and/or finish residency training.

Supported in part by extramural funding, the Riverside School of Medicine has expanded its pipeline programs for students from the middle school level through a post-baccalaureate "gap" year program. These programs, reaching approximately 1,100 pre-med students, provide enrichment and academic support to improve the educational attainment of youth and to create a clear pathway leading up to and into medical school. In addition, the Riverside School of Medicine has continued the tradition of providing a portal into its medical school exclusively for Riverside undergraduate degree holders; up to 24 of the current medical school seats each year are reserved for these students in the Thomas Haider Program at the Riverside School of Medicine.

To begin addressing the maldistribution of residency training opportunities in California, the School of Medicine has already added a significant number of new residency training slots in Southern California with programs in

internal medicine, family medicine, psychiatry, and obstetrics/gynecology, as well as fellowship programs in child/adolescent psychiatry and cardiovascular medicine. Working with Loma Linda University, a primary care pediatrics track has also been established with the institutional sponsorship held by Loma Linda. The Riverside School of Medicine also partners with hospitals in the region for additional programs in family medicine, general surgery, internal medicine, and neurology. Riverside-sponsored and affiliate-sponsored programs combined are training approximately 230 resident physicians and fellows currently. Development of additional residency training programs and fellowships is anticipated in future years.

UC DAVIS SCHOOL OF NURSING

In 2007, the Gordon and Betty Moore Foundation (GBMF) announced $100 million in founding support, the largest commitment ever made to a nursing school, to launch the Betty Irene Moore School of Nursing at the Davis campus. The GBMF's vision for the School of Nursing was as a public-private partnership between the Foundation and the State in which both would provide funding for the new school. The campus admitted its inaugural class of students in the master's and doctoral programs in fall 2010. In 2013, the School of Nursing added the Master of Science – Nurse Practitioner and Master of Health Services – Physician Assistant Studies programs. A fifth program, which prepares new nurses – the Master's Entry Program in Nursing, opened in summer 2016.

The expectation of the GBMF, as memorialized in the grant agreement executed with the University of California, was that as students are enrolled in the school, funding to support those students would be provided by the State in a manner consistent with funding provided to nursing programs at other UC campuses. This condition was endorsed by the Regents in their approval of the school in March 2009.

UC IRVINE SCHOOL OF NURSING

To help meet the state's future nursing needs, the University has focused primarily on graduate level nursing education, including preparation of new faculty for nursing programs and the education and training of advanced practice nurses. Both the California State University and the California Community Colleges have large undergraduate programs; however, all four UC nursing campuses offer graduate programs to train professional nurses and nursing faculty. The UC Irvine (UCI) Program in Nursing Science was established in 2007. The Irvine campus added a master's degree program in 2009-10 and expanded with an initial cohort of Ph.D. students in fall 2013.

Almost ten years later, in 2016, the William and Sue Gross Family Foundation committed $40 million, the largest gift in UC Irvine history, to establish the Sue & Bill Gross School of Nursing at the Irvine campus. Similar to the GBMF, the combination of public and private support enables UCI to train the next generation of nurse leaders. The foundation gift funds construction of a state-of-the-art building, increasing classroom and research capacity, with a focus on real-world training, and expands nurse-managed community clinics. Construction is scheduled to begin in 2018. UCI School of Nursing's overall enrollment is expected to double in the next decade, from approximately 218 to 432 bachelor's, master's, and doctoral students. Nursing faculty will increase from 17 to 34.

OTHER HIGH PRIORITY HEALTH SCIENCES ENROLLMENTS

Programs in Medical Education (PRIME)

California's physician workforce is vital to the health and well-being of the state's more than 39 million residents. As the most populous and most ethnically and culturally diverse state in the nation, California faces unique challenges in improving access to care and health outcomes for its citizens. Health sciences graduates must be prepared and better trained to address the cultural and socioeconomic factors, health practices, and potential environmental hazards that affect health outcomes. Without comprehensive strategies and focused teaching programs, current health disparities will persist and likely intensify in the years ahead as the state faces a substantial shortfall of physicians and other healthcare workers.

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.

PRIME's focus on medically underserved communities has also resulted in extraordinary increases in racial, ethnic, and socioeconomic diversity across the UC medical education system, with more than 60% of PRIME students from groups underrepresented in medicine.

As of 2017-18, UC will enroll approximately 350 medical students in PRIME. While this program has earned recognition for its innovation and success, the State has been unable to provide the funding needed to fully support the program. Continuation of the program in these circumstances has meant that funding within the medical schools has been redirected to support this program. As such, it has not reached the primary goal of this program, which was to expand the number, as well as the diversified background of, medical school graduates in the State in order to address workforce needs.

PROGRAMS IN MEDICAL EDUCATION (PRIME)

Rural PRIME (Rural California) at Davis
Incorporates the Davis campus' award-winning model program in telemedicine with a commitment to outreach and rural healthcare.

PRIME-LC (Latino Community) at Irvine
Emphasizes Latino health issues, including increased proficiency in medical Spanish and Latino culture.

PRIME (Diverse Disadvantaged) at Los Angeles
Trains physicians to lead and advocate for improved healthcare delivery systems in disadvantaged communities.

PRIME San Joaquin Valley
Provides specialized training with an emphasis on community-based research and educational experiences to improve the health of populations in the Central Valley region of California.

PRIME-HEq (Health Equity) at San Diego
Builds upon research about health disparities and minority health problems to help students learn and contribute to achieving equity in healthcare delivery.

PRIME-US (Urban Underserved) at San Francisco
Offers students the opportunity to pursue their interests in caring for homeless and other underserved populations in urban communities.

Nursing Programs that Meet State Needs

Virtually all Americans will require nursing care at some time in their lives. The recent nursing shortage raises concerns that must be addressed in California and nationwide, especially in light of national healthcare reform and the substantial increase in numbers of Californians who have health insurance as of 2015.

Notwithstanding efforts by former Governor Schwarzenegger's Nurse Education Initiative to increase the state's capacity to train nurses, California remains among the states with the lowest number of employed registered nurses per capita (752 versus the U.S. average of 936 per 100,000). Causes of the nursing shortage include rapid population growth (especially of those over age 65) and an aging nursing workforce (half of California's licensed nurses are age 50 and older). The Patient Protection and Affordable Care Act, combined with the aging baby boomer population, are predicted to result in a nursing shortage twice as large as any since the introduction of Medicare and Medicaid.

Baccalaureate Nursing. UC operates two undergraduate nursing programs (at the Irvine and Los Angeles campuses) as part of its efforts to rebuild the pool of nurses eligible to pursue future graduate work to become nursing faculty, as well as to allow college-bound high school graduates interested in nursing the opportunity to pursue such a degree at UC. In fall 2006, UC re-established the Los Angeles campus' bachelor's degree program in nursing and added a new undergraduate program at the Irvine campus. In recent years, the healthcare industry has seen increased demand for nurses with bachelor's degrees, with many preferring or requiring such a degree for employment.

Self-Supporting Instructional Programs

This chapter describes three instructional program categories that generate their own support and receive no State funds: University Extension, summer session for non-UC students, and self-supporting graduate professional degree programs.

UNIVERSITY EXTENSION

University Extension is the largest continuing education program in the nation, providing 8,911 courses to over 400,000 registrants who are typically employed adult learners with a bachelor's degree. UC Extension is a self-supporting operation and its offerings are dependent upon user demand, which varies due to many factors, including the strength of the economy. In 2016-17, University Extension expenditures for instruction were $282 million.

The University offered its first Extension courses to students beyond the immediate campus community more than 100 years ago. Today, Extension divisions at each of UC's ten campuses offer over 27,000 courses, programs, seminars, conferences, and field studies throughout California and in a number of foreign countries. The majority of UC Extension programs are designed to serve the continuing education needs of working professionals. Programs are presented through open-enrollment courses for individuals, as well as through organizational partnerships supported by contracts and grants with public agencies, non-profit organizations, and private companies. Certificate programs are offered in areas such as computing and information technology, environmental management, graphics and digital arts, and health and behavioral sciences. In 2016-17, UC Extension awarded 14,827 certificates.

UC Extension offers a wide variety of online courses to students in California, across the nation, and around the world, ranging from undergraduate courses carrying UC academic credit to professional-level courses in subjects such as project management, computer programming, and technical writing. These courses extend the instructional resources of the University to the global community.

Extension credit programs are reviewed and presented through policies established by the UC Academic Senate. While they do not offer degrees, Extension programs provide transferrable degree credit, professional development, and personal enrichment classes, as well as public service programs to matriculated and non-matriculated domestic and international students, and to corporate and non-profit agencies and organizations. Various undergraduate and graduate degree credit courses are available, either as equivalents of existing UC campus courses or structured as undergraduate classes but with content not found in an existing campus offering. Extension courses explore history, literature, and the arts in traditional and innovative ways, providing cultural enrichment to Californians. Extension also serves UC's public service mission through organizing lecture series, summer institutes, public affairs forums, and other events for the general public.

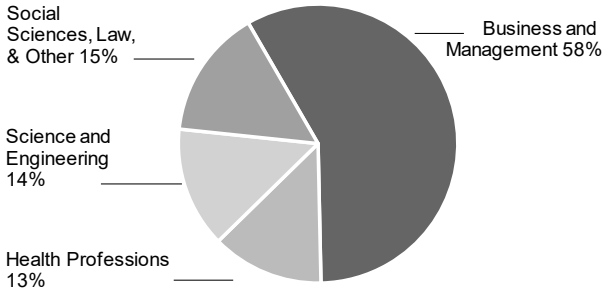
SUMMER SESSION FOR NON-UC STUDENTS

In addition to the University's course offerings during the regular academic year, UC and non-UC students may enroll in courses during the summer session on any of the ten campuses. Before fall 2000, the State did not provide funding for the summer term; State appropriations were only directed toward the fall, winter, and spring terms. Through summer 2000, summer sessions were supported from student course and registration fees set by each campus.

With State support, UC began converting summer instruction for UC students from a self-supported to a State-supported program in 2001-02 and completed the conversion of all general campuses in 2006-07. More recently, declining State support has resulted in cuts to some summer programs and greater reliance on tuition and fee revenues, potentially signaling a gradual return to a self-supporting model. Further discussion of State-supported summer instruction may be found in the

General Campus Instruction chapter of this document. Non-UC students make up a proportion of the summer sessions student population and their fees contribute to the summer sessions program. In 2016-17, out of 94,053 total students, 11,472 non-UC students registered for UC summer sessions, many of whom are regularly enrolled at California State University, California Community Colleges, or other institutions. Non-UC students may pay higher fees to help support the cost of their education and are not eligible for financial aid. In 2016-17, approximately $18.5 million of summer session expenditures were funded from non-UC student tuition and fees.

Display VI-1: 2016-17 Self-Supporting Program Headcount Enrollment by Discipline (Total: 7,207)



Approximately two-thirds of self-supporting program enrollment is in MBA and other management programs for working professionals.

SELF-SUPPORTING DEGREE PROGRAMS

The University operates 83 self-supporting graduate professional degree programs. These programs, developed in accordance with the Presidential *Policy on Self-Supporting Graduate Degree Programs*, are intended to provide alternative pathways to graduate and professional degrees for academically qualified adults to further their education and upgrade their skills. Extending opportunities to working professionals is another way that the University helps to meet state workforce needs.

Self-supporting programs adhere to the same academic standards as do other graduate degree programs at UC, but do not receive State funds. Full program costs, including but not limited to faculty instructional costs, program support costs, student services costs, and overhead, are covered by student fees or other non-State allowable funds. Since fees for these programs are set at market rates and programs are self-supporting, any excess funds generated by these programs are available to support UC's core academic mission. Some programs are administered through University Extension (though degrees are granted by the department), while others are administered directly by professional schools or academic departments.

The University's oldest and largest self-supporting programs are evening/weekend and executive MBA programs. More recently, programs have been established in a range of disciplines, and include online programs, off-site programs, joint programs with other institutions, and programs for foreign-trained students.

When UC was receiving adequate State support to expand graduate academic and professional programs in response to state and societal needs, self-supporting programs at UC were directed towards working adults and other non-traditional student populations and were limited to part-time or alternatively scheduled programs. Given the significant decline in State support during the last recession, the University revised its policy on self-supporting programs to recognize that self-supporting graduate professional degree programs are now a necessary educational strategy to allow the University to serve a greater number of students above and beyond that which State resources will support. Self-supporting programs are no longer required to be part-time or alternatively scheduled.

During 2016-17, a total of 7,207 students enrolled in self-supporting programs. These programs generated over $263 million in revenue during 2016-17.

Research

Established as California's primary academic research institution in the 1960s by the Master Plan of Higher Education, UC alone is charged by the State with developing world-class research universities that serve as the State's research arm. By focusing on this mission, UC has developed the largest number of highly ranked research campuses of any system in the world. UC campuses routinely place among the top five institutions internationally under multiple different ranking systems.

UC's commitment to "teach for California and research for the world" fosters a ready environment for its undergraduate students, graduate students, postdoctoral scholars, faculty, and professional research staff to actively engage in creating new knowledge. They produce works of art, find solutions to the most pressing social and environmental challenges, and push the boundaries of science and technology. They apply this new knowledge to cure diseases, develop industries, enhance our security, and train the leaders of tomorrow's knowledge- and innovation-centric economy. They also publish extensively, principally in peer-reviewed outlets. Over the past six years, from 2011 to 2016, UC has published, on average, well over 100 original scholarly articles every day.

Citation measures reflect and are indicators of the University's pursuit of excellence, showing that the impact of UC's scholarly outputs collectively exceeds norms for the nation and the world.[1] UC's pursuit of excellence is also evident in the following achievements: UC has more winners of the Nobel Prize, more Pulitzer Prize recipients, and more members of the National Academies of Science, Engineering, and Medicine than any other university system.

Spanning the full spectrum of academic and professional disciplines, UC research is of enormous benefit not only to California, but to the world at large in this era of increasing globalization. The University's researchers contribute to state, national and global health, security and wealth by, for example, discovering better ways to fight drought and fire, prepare for earthquakes, reduce traffic and greenhouse gas emissions, improve public health, and identify sustainable sources of energy. With over 800 research centers, institutes, laboratories, and programs spread across ten campuses; five medical centers; a 39-site, 756,000-acre Natural Reserve System; and three National Laboratories, UC tackles some of the most urgent problems facing California and the world and creates knowledge that will improve lives over many decades. The tremendous size, scope, and quality of UC's research enterprise are the fruits of California's long-term planning and investment: UC performs nearly 10% of all academic research in the United States and, for every State dollar spent (from State General Funds and Special State Funds) to support research, UC spends nine dollars from federal, private, and other non-State sources, providing a substantial stimulus for growing the economy.

California's support for UC's research capabilities is a long-term investment that has performed well even during economic downturns. Years of research funding constraints and increasing global competition for the world's best scholarly talent, however, could compromise UC's research capabilities. While UC faculty members have been extraordinarily successful at attracting federal and private funds to California, UC's share of these funds and their associated economic impact will diminish if UC's scholars are recruited by other institutions. Similarly, without continued investment, the University is less equipped to attract pre-eminent scholars and graduate students from around the world. Continued investment in UC's faculty and research infrastructure is critical to sustain the research enterprise at UC and its beneficial impact on the state's knowledge- and innovation-driven economy.

2018-19 RESEARCH GROWTH: UC UNDERGRADUATE RESEARCH INITIATIVE

Among the University's goals in 2018-19 is to secure $10 million to fuel a UC-wide Undergraduate Research Initiative (URI) that could be sustained at a level of $5 million per year in subsequent years. This initiative will

[1] See http://accountability.universityofcalifornia.edu/2017/chapters/chapter-9.html

shine a spotlight on UC's unique capability to provide undergraduate students with deeply rewarding intellectual experiences, and allow growth toward the goal of giving all UC undergraduates the chance to make original discoveries in their fields of study.

Undergraduate research not only benefits UC's students but the University and the state as well. From the standpoint of professional development, UC's students develop their sense of curiosity and self-confidence by working on original scholarly projects, attributes that serve them well in securing their first positions upon graduating and throughout their professional careers. UC's alumni often report that conducting research as an undergraduate was one of the best experiences they had at the University, one that they treasure for what they learned and the connections they made with their classmates and faculty mentors.

From the University's and state's perspectives, undergraduate research provides benefits in at least three ways. First, as more undergraduates participate and learn about research in their field, UC is simultaneously developing a larger, more diverse and better prepared pool of prospective graduate students for itself, the state, and the nation. Second, undergraduates are increasingly taking advantage of opportunities available to create intellectual property (IP) through, for example, the articles they publish, the products and processes they invent, and the performances and exhibitions they hold. Third, undergraduates who have conducted research can be superb ambassadors for the value of research and how it benefits Californians as they present their work to family, friends, and various audiences across the state.

The 2016 UC Undergraduate Experience Survey (UCUES) revealed that nearly 40% of UC's undergraduates have been involved in one or more research or creative projects outside of regular course requirements by the time they graduate. The URI would provide the stimulus to engage UC's campuses to substantially expand undergraduate involvement in original scholarship. The funds requested would be used to provide many more options for bolstering undergraduate participation.

THE TEACHING-RESEARCH NEXUS

Research is inextricably linked to the University's instructional and public service programs. As a system of higher education, UC offers unique opportunities for students at both undergraduate and graduate levels to learn about and contribute to scholarship at the cutting edge of their disciplines, and UC prioritizes the expansion of these opportunities. Moreover, the UC system is without peer in its distributed excellence, with six of the ten UC campuses already members of the prestigious Association of American Universities (AAU). The nation's top undergraduate and graduate students and postdoctoral scholars pursue an education at UC because of the outstanding reputation of its academic and professional programs.

The strength of UC's scholarly programs is structured around its world-class faculty. UC recruits faculty from around the globe, who bring excellence to their teaching and original scholarship. Throughout their UC careers, faculty members are expected to continue to push the envelope toward excellence, advancing the leading edge of their fields. Adherence to this pursuit of excellence has created a robust, enterprising research culture that touches almost all aspects of University life, attracts billions of dollars in federal funding annually to the University, and draws many of the best students in the world to learn and work in California.[2]

Students experience research both in and out of the classroom. As part of formal instruction, faculty scholarship underlies the entire undergraduate curriculum; it exposes undergraduate students to the core skills and knowledge of a discipline and the discipline's overarching questions, latest findings, and scholarly methodology.

Beyond formal instruction, undergraduate students have increasing opportunities to conduct original scholarship. It is noteworthy that the 2016 UCUES found that about 70%

[2] For additional information on UC's pursuit of collective excellence, please visit http://www.ucop.edu/research-graduate-studies/_files/research/documents/Collective%20Excellence.pdf.

of senior undergraduates have already engaged in research projects as part of their coursework, while nearly 25% of survey respondents have assisted faculty in conducting research. The Internet and other technological tools are enabling the democratization of the discovery process, helping to increase and enrich undergraduate participation in original scholarship and the creation of new knowledge in their disciplines of study. This close engagement with research allows undergraduates to understand how new knowledge in their fields is created. As they participate in scholarly and research activities, UC undergraduates are also mastering valuable critical thinking, communication, and problem solving skills. These skills, along with international experience, will help UC undergraduates become engaged global citizens and competitive contributors to the global economy.

For graduate students, research conducted in laboratories, field stations, studios, and other settings is at the root of their development as scholars. In the 2013 UC Graduate Alumni Survey, a majority of doctoral alumni, working both within and outside of academia, identified academic skills, the practice of research methods, and presentation of work at conferences as the three most valuable elements of their doctoral education. UC attracts exceptional graduate students, postdoctoral scholars, and professional researchers who work closely with faculty to help attract research dollars to the state that are used to advance knowledge and train the next generation of teacher-scholars.

In 2015-16, UC trained about 16,000 graduate students as paid research assistants and employed or hosted 6,300 postdoctoral scholars. Funding for graduate enrollment growth helps expand the pool of individuals who engage in and support research programs and who often are future UC and CSU faculty. As part of its commitment to high quality graduate education, UC has launched a set of "academic pipeline" initiatives to encourage students to pursue UC graduate studies and focus on building an academic graduate population reflecting the diversity of the state and the nation.

In order to enhance the representation of underrepresented minority students earning advanced degrees, UC developed the UC-HBCU (Historically Black Colleges and Universities) Initiative which specifically seeks to increase the number of HBCU graduates in UC Ph.D. programs by investing in relationships between UC faculty and HBCUs. Grants are competitively awarded to UC faculty members to host HBCU students as summer research interns and facilitate faculty research collaborations and other educational activities that serve the goals of the Initiative. As part of the Initiative, UC provides fellowships to participants who enroll in UC Ph.D. programs. UC is developing a similar pipeline initiative in collaboration with the CSU system to increase enrollment in UC Ph.D. programs of CSU's diverse community of scholars (almost all CSU campuses are Hispanic Serving Institutions).

An important aspect of the teaching-research nexus is internationalization. Research is an intrinsically global enterprise; scholars from all parts of the world participate in the creation of knowledge and broadly share their contributions. UC's scholars are already highly international, with 24% of all ladder rank faculty and 23% of all other academic appointees coming from overseas. This level of overseas engagement, when combined with the 32% of graduate academic students and 65% of postdoctoral scholars from abroad, provides a diverse community of teacher-scholars that raises multicultural awareness at the campuses and national laboratories of the UC system.

An area that is ripe for growth is overseas research opportunities for UC students. The 2016 UCUES notes that just over 11% of undergraduates reported participation in a UC study abroad program. Through the many international connections that UC scholars possess, the UC system plans to double the percentage of undergraduates going abroad over the next five years and to enhance the infrastructure available overseas to support education and research activities of UC faculty, academic staff, and students. As part of this initiative, UC will be exploring the possibility of offering joint undergraduate, masters, and doctoral degrees with leading overseas academic institutions. These academic credentials are expected to enhance the competitiveness of UC graduates by demonstrating their ability to study and contribute to original scholarship in two or more culturally diverse settings. The students' performance will also help to benchmark to

SPOTLIGHT ON STUDENT RESEARCH

Student research is a key part of a UC education, and the University strives to provide students at all academic levels and across all disciplines with the opportunity to create new knowledge in their field. Communicating their discoveries to an audience is also a valuable skill; UC campuses work with their students to assist them in honing their communication skills and offer opportunities for them to present their findings to the public and to targeted audiences throughout the state.

In April 2017, UC convened undergraduate students from its nine undergraduate campuses to speak with UC alumni about their research projects. The students described how their projects benefited California and how participating in research influenced their post-graduation plans and professional development.

Bianca Dunn, a UCSB undergraduate student, focused her research on bacteriophages, which are viruses that kill bacterial cells with high specificity and efficiency. With strains of antibiotic-resistant bacteria on the rise, fatal infections unresponsive to standard medical antibiotic treatment are becoming a greater threat. Bianca's research has the potential to target some of these difficult-to-treat bacteria.

At the graduate level, UC campuses provide numerous opportunities for their students to explain the impact of their dissertation research. Every year, graduate students from every UC campus travel to Sacramento for Graduate Research Advocacy Day. Selected by their graduate dean, these students spend the day speaking with legislators from their local districts about the importance of graduate research and its contribution to California's health, economy, and security.

For example, UC Davis ecology graduate student Matthew Savoca studies why marine animals like sea turtles are drawn to eat plastic they find in the ocean – often with tragic results. He found that certain marine animals are attracted by a sulfurous odor from some of the materials that signals that the plastics are food.

Other opportunities for graduate students include the annual Grad Slam competition, which offers them the chance to convey the significance of their research in three minutes or less. Leslie Rith-Najarian, a UCLA Ph.D. student in psychology, won the 2017 UC-wide Grad Slam Championship for her work on the challenges in making mental health more engaging and accessible through marketing and distribution of research-based online mental health treatment tools. Modest changes in how these mental health treatment tools are presented can substantially improve how they are perceived and accessed. For individuals suffering from depression and anxiety, these research outcomes can be life-saving.

international standards the quality of academic preparation that the UC system provides. UC will study the impact of international and other student experiences on graduates' employment using educational data science methods to inform students' academic decisions while they are at UC.

UC RESEARCH CREATES JOBS AND IMPACTS THE LIVES OF CALIFORNIANS

Strengthened by the State's long-term investment, UC research has contributed to California's emergence as the intellectual and economic power that it is today. California is the epitome of the entrepreneurial ecosystem where risk-takers look for new opportunities to create disruptive change and drive economic success. The "49ers" of the gold rush gave way to the technology pioneers of the 20th century who created entire industries based substantially on innovations derived from fundamental research undertaken at universities. Advances in such areas as semiconductors, microelectronics, personal computers, biotechnology, wireless communication, and web-enabled commerce can be traced to research discoveries made in California, and reflect the efforts of myriad individuals who received their training in the UC system.

Almost all of the industries in which California is among the world leaders – including agriculture, biotechnology, computers, digital media, entertainment, environmental technologies, semi-conductors, and telecommunications – grew out of university-based research. Not only do UC's research and intellectual property have global reach – with 5,138 active foreign patents, 745 of which were issued in 2015-16 – but UC's research enterprise also helps stimulate the state economy through deploying new technologies and creating new jobs, companies, and industries. An important aspect of UC's public service mission is to ensure that results of its research are used for public benefit. This transfer of knowledge into the private sector is accomplished in many ways: through educating students, publishing research results, and ensuring that inventions are developed into products for public use.

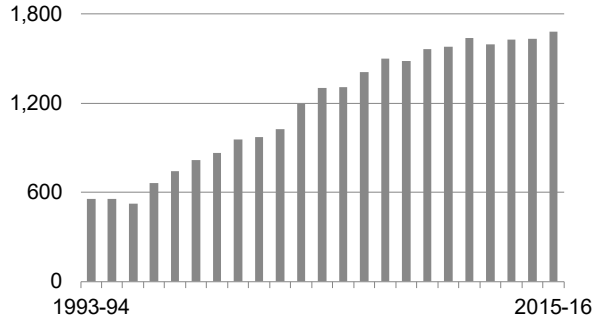
For the past 20 years, UC has led the nation's institutions of higher education in obtaining patents. UC's faculty and graduates are responsible for 12,420 active inventions, a 1.8% increase from the prior year's level. The annual

number of invention disclosures since 1993 is shown in Display VII-1. In 2015-16, UC disclosed 1,803 new inventions (includes Lawrence Berkeley National Laboratory inventions), the largest number among universities in the United States, with over a third created by graduate student (co-)inventors. Some of these inventions are patented and licensed to companies to develop products that enhance the lives of Californians. Many of these early-stage UC technologies are licensed to startup companies, which stimulate economic growth in communities adjacent to UC campuses. In 2015-16 alone, 93 UC startup companies[3] were founded, bringing the total number of startup companies founded through UC patented innovations, since 1980, to 1,029 (see Display VII-2 on the following page).

Nearly half of recent UC startups have been founded on an innovation (co-)invented by a graduate student. For example, Nanosys, which stemmed from Ph.D. research, is using tiny, artificial crystals to boost the color vibrancy of digital displays. Imprint Energy, co-founded by a UC Ph.D. student in 2010 based on her graduate research, creates ultra-thin, flexible batteries that can be screen-printed in virtually any shape and size.

A review conducted of UC startups in 2016 indicated that UC startups are contributing to the state's economy, employing over 18,000 people and bringing in more than $14 billion in revenue in fiscal year 2014-15. Since 2005, over $11 billion in venture capital and $390 million in federal Small Business Innovation Research (SBIR) grants have been invested in UC startups. Beyond spurring the creation of startup companies, many of UC's 4,656 active U.S. patents have led to the creation of some of today's leading industries, which have improved our health, changed the way we do business, and enriched our lives. UC patents include the Nicotine Patch; the vaccine for Hepatitis B; drugs to treat prostate cancer; mobility bionics and exoskeletons that enable paraplegics to walk; and market-leading varieties of strawberries and citrus, to name just a few examples.

Display VII-1: UC Invention Disclosures



The annual number of invention disclosures has tripled in the last two decades at UC campuses, excluding the Lawrence Berkeley National Laboratory.

Display VII-2: Impact of UC Technology Transfer*

Royalty and Fee Income for fiscal year	$158 million
UC Portfolio of Active Inventions	12,420
UC Portfolio of Active U.S. Patents	4,656
Number of Active Licenses	2,359
Companies founded based on UC technologies	1,029

* Total as of June 30, 2016.

UC startups provide jobs for Californians as well as tax revenues for the state. As one of the largest research, innovation, and economic development hubs in the world, UC will continue to generate and support the industries of the future.

As a land grant institution, UC has worked closely with California's agricultural industry. In the late 1800s, UC researchers discovered how to remove salts from the soils of California's Central Valley, transforming barren land into the most productive agricultural region in the world. Since then, UC has remained committed to supporting the agricultural industry, developing new technologies in crop management and pest control, and helping the industry adapt to changing regulations while remaining competitive. Today, the industry is at the cusp of an era of "precision agriculture," in which new technological tools offer the potential to enhance agricultural productivity as has never before been possible.

[3] UC startups are independently operating companies, which formed to commercialize UC technology, and whose licensing of UC technology was deemed critical to the business.

OFFICE OF INNOVATION AND ENTREPRENEURSHIP

The University launched the Innovation and Entrepreneurship Initiative in 2014 to enable UC research to be better leveraged by the state, capitalize on the scale and diversity of the research enterprise to address some of California's most pressing problems, and provide significant stimulation to the state's economy. In May 2016, President Napolitano established what is called the Office of Innovation and Entrepreneurship (I&E) at the recommendation of her Innovation Council, which is comprised of a broad array of successful industry leaders. President Napolitano charged the new office with advancing UC's Innovation and Entrepreneurship Initiative.

Among the goals of the I&E office are:

- Promoting the UC innovation and entrepreneurship brand nationally and internationally;
- Accelerating UC's cultural embrace and prioritization of innovation and entrepreneurship; and
- Enhancing the scope, scale, and strength of partnerships across UC's campuses and ecosystems.

One immediate priority for I&E was to implement a rigorous design, review, and implementation process around $22 million in one-time fiscal year 2016-17 State funding via AB 2664. Each campus developed a proposal to leverage its applied research and education capabilities with specific investments into innovation and entrepreneurship infrastructure and programming. After a two-stage review process by Innovation Council members, campuses received funds in January 2017 and have already launched maker spaces, proof-of-concept grant programs, and entrepreneurial workshops with the State funds.

More information about the I&E office is available at the following site: http://www.ucop.edu/innovation-entrepreneurship/index.html.

UC RESEARCH HELPS SET THE PACE OF CALIFORNIA'S ECONOMY

California's current economy is supported by its preeminent position in technology-centric industry sectors that define a 21st century quality of life, and by the State's ability to leverage natural resources to support a diverse agricultural economy that feeds the nation. Research universities in California – and UC in particular – have played a seminal role in growing the state's economy and creating the many benefits Californians enjoy today. UC's role in shaping and developing California into a global research and economic powerhouse is built on the foundations of the State's historic investments in higher education. California faces increasing national and global economic competition as other states and nations seek to replicate California's research enterprise and economic successes. Buttressed by continued State support, the University – through its research, technologies, and highly trained and talented workforce and students – will play an even more significant role in maintaining and spurring the state's future economy.

As a system of ten campuses, five medical centers, and three national laboratories, UC research is well positioned to address critical issues from multiple perspectives through team-based scholarship, and UC's commitment to excellence across all research disciplines has created an unparalleled resource on which to build California's economic future. UC research teams may take vastly different approaches to solving a given problem based on their curiosity and expertise, and peer review of grant applications ensures that funded projects clear a very high bar. The diversity of research perspectives enables UC scholars to make progress in areas ranging from the large-scale mysteries of the universe to nanoscale phenomena to the molecular basis of disease to the ways in which we as humans interact with each other and our surroundings. UC researchers receive the support and the access to research infrastructure they need not only to be successful and globally competitive in their fields but also to define the future of their disciplines.

Locally, regionally, nationally and globally, society faces tremendous challenges created by increasing populations, shrinking natural resources, and climate change that will redefine our place in the global ecosystem. UC's research enterprise is poised to address these challenges, harnessing UC research excellence for productive use and benefit by the state. UC has identified areas of research excellence that have the potential to effectively address the most significant challenges and opportunities facing California for years to come.

Water, Agriculture, and Food Security

Water may well be the limiting factor to California's continued economic success in the 21st century. Climate-driven decreases in water resources will require

California to develop alternative approaches to agricultural, commercial and residential water use. Whether it is conservation, recycling/reuse of existing supplies, or growth of the potable water supply through desalination, solutions will require innovative approaches that address technical challenges, environmental impacts, and the socio-cultural implications of significantly less water that is potentially far more expensive.

UC researchers are already working to develop solutions that address the scale of California's water problem, and are creating new remote sensing and water resource models. This will allow for more accurate measurements of the currently existing water resources, and better models to predict the future availability of water based on precipitation patterns and agricultural, industrial and residential use.

If climate change proceeds as predicted without significant mitigation, the bountiful Californian agricultural economy may no longer be able to help meet the nation's needs. To continue to serve as America's "produce market," California will have to address the challenges of supplying the nation with fresh, nutritious, and safe produce and the impact of reduced agricultural productivity on the rural economy of the state. Beyond addressing immediate needs of agricultural production, solutions also must factor in food storage, transportation, and distribution to consumers in ways that prevent spoilage and contamination while also minimizing waste. UC researchers are working to develop sustainable, holistic agricultural solutions that encompass plant physiology, plant genetics/genomics, agricultural production technologies, post-harvest physiology, and preservation technologies that ensure that agricultural products remain nutritious, healthy and disease-free from farm to table.

Carbon Neutrality and Energy Sustainability

Global climate disruption is negatively impacting the planet, requiring the creation of new renewable energy sources and the development of more effective and efficient energy distribution and usage mechanisms. The University has been deeply engaged historically not only in climate science research, but in climate adaptation, mitigation, and resiliency as part of its planning around climate solutions.[4]

Moreover, the University has aggressively worked with federal representatives to stress the importance of the federal agency funding streams that have traditionally supported climate-related research.

In cooperation with industry, NGOs, and government partners, UC researchers are developing alternatives to fossil fuels to blunt the impact of climate change driven by increased levels of atmospheric greenhouse gases. Alternative sources of energy range from solar, wind, and geothermal power sourced from the earth's physical environment, to renewable biofuels derived from the products of photosynthesis. Throughout the UC system, efforts are underway to design novel energy distribution infrastructures that encompass a broad range of new and customized industrial facilities, to develop synthetic biology techniques that facilitate the synthesis of biofuels, and to develop decentralized fuel and electricity production models that incorporate transportation and storage strategies.

Additionally, UC researchers are actively creating new energy-efficient designs and technologies that impact public and private infrastructure, modeling new methodologies and technologies that address climate adaptation and mitigation, and developing environmental monitoring and assessments that are applicable within underlying biological or societal constraints. In conjunction with each of these efforts, UC researchers are developing policy, economic, and behavioral impact models to better understand how society will interact and interface with newly implemented technological solutions.

For additional information about programs addressing Carbon Neutrality and Sustainability topics, see the Spotlight on Research Excellence at the end of this chapter.

Health and Healthcare Delivery

Improving Californians' health and their access to affordable healthcare will be a major challenge in the 21st century. Beyond the education of the next generation of physicians who will treat California's population through the daily provision of health care, UC researchers are tackling some of the most challenging issues in human biology,

[4] See http://ucop.edu/sustainability/.

disease causation, and medical treatment in the following topical areas:

- **Clinical and predictive genomics.** The sequencing of the human genome in the early 2000s heralded the genomics revolution that underpins many elements of healthcare and precision medicine. Researchers are now beginning to understand the basic biological processes that define healthy and diseased states, and are developing personalized, precision medical treatments that target interventions to the underlying molecular basis of disease and facilitate faster approvals of novel, mechanism-driven therapeutics while lowering costs.
- **Sensors, networking, and telemedicine.** The convergence of communications technology with healthcare will create opportunities for remote, predictive sensing and diagnosis of medical conditions. This will enable better utilization of expensive health care infrastructure and provide early diagnosis and efficient and affordable access for remote populations. Such benefits are of immediate value not only to California with its large geographical size and widely distributed population, but also across the nation and world as the availability of broadband communications infrastructure expands to remote locations.
- **Bioengineering and regenerative medicine.** The evolution of bioengineering and regenerative medicine, supported by Proposition 71 funding, offers potentially ground-breaking alternative treatments to chronic illnesses such as kidney disease, cardiovascular disease, neurodegenerative disease, and traumatic neurological damage. These conditions also comprise a vast proportion of health care expenditures and take a significant toll on individual and societal productivity. Solutions developed from advances in bioengineering and regenerative medicine may substantially impact both our personal and economic health. Recently, applications of bioengineering advances have expanded beyond areas like prosthetics and hospital equipment to include engineering at the molecular and cellular level, with applications in energy and the environment as well as healthcare.

In many of the aforementioned areas, UC recognizes that advances created by breakthrough science and engineering – like gene editing through UC's CRISPR/Cas9 technology – will generate complex ethical and regulatory issues. For example, in genetic and genomic medicine, UC researchers from multiple disciplines collectively examine the moral foundations of medicine through the lenses of the humanities, anthropology, and the social and behavioral sciences. This interdisciplinary approach is especially useful to address the bioethical and privacy issues that advances in genomics are creating for patients, families, physicians, counselors, business, and government.

Intelligent Manufacturing and the New Industrial Economy

As technological advances drive the next generation of products and services, California has the opportunity to redefine itself as a center for advanced manufacturing for both specialty and commodity products. California still retains a broad manufacturing base, especially in small to medium sized enterprises (SMEs) that have the opportunity to leverage new manufacturing modalities to supply parts or finished goods to the nation and the world. With proximity to UC and other research universities, and the addressable local market of early adopters, California businesses are well positioned to be the test bed for innovative manufacturing approaches that will create good-paying jobs for our citizens. These approaches can reduce labor costs, but may also change the nature of manufacturing and distribution. Employees in this new paradigm will need a very different skill set from 20th century industrial workers, and it will fall to multiple sectors of higher education to develop the appropriately trained leaders, managers, and skilled workers who will power the new industrial economy. Through their research in the following areas, UC teacher-scholars are envisioning, designing, and building the new industrial economy:

- **Intelligent manufacturing.** Combining information, technology, and human ingenuity to bring about a rapid revolution in the development and application of manufacturing intelligence will fundamentally change how products are invented, manufactured, shipped, and sold. This will improve worker safety and protect the environment by leading to zero-emissions, zero-incident manufacturing.
- **Sustainability.** The new manufacturing economy will have to address the challenges of ensuring that processes in use are as environmentally sustainable as possible and that the next generation of manufacturing technologies, such as 3-D printing, is created with sustainability and efficiency as integral design elements.
- **Nanotechnology.** The increasing importance of nanotechnology in materials, life sciences, and engineering is driving new product concepts and designs. UC campuses have a broad range of programs that study the applications of nanoscale structures and provide access for industrial partners to use advanced research facilities. Nanoscale science has applications in energy, health care, environment and information

technology, which are all sectors of strategic and economic importance to California.

Transportation and Urban Infrastructure

Urban infrastructure will take on an increasingly prominent role in California, as the State seeks to support higher population densities in ways that maintain a high quality of life, with affordable, environmentally sound and efficient access to employment, education, and recreation. This growth in urbanization is requiring cities and regions to develop proactive and environmentally sustainable transportation plans that connect citizens to jobs, schools, and entertainment in ways that were not envisioned when the current infrastructure was developed. European cities established their integrated transportation infrastructure over the last century or more. During the same period, California cities eliminated much of their equivalent infrastructure, leading to increased capital investment and opportunity costs for re-creating and re-constructing an integrated transportation infrastructure. UC is poised to address these issues in a variety of ways:

- **Effective transportation.** Transportation systems will be a key contributor to a sustainable economic future and will impact Californians who commute to school or work, who wish to access shopping and recreation, and who benefit from moving goods from manufacturers to markets. Expanding urban populations will need more holistic solutions beyond better roads and more fuel-efficient vehicles, requiring engineers, architects and sociologists to collaborate on building the transportation infrastructures needed to sustain community and economic development in the future.
- **Urban and regional planning.** Along with transportation, regional planning will be a foundational component of the creation and redevelopment of 21st century cities. These cities will have to find economically and ecologically sustainable means of balancing the need for higher density housing, the preservation of historic structures, and access to open space and recreation. UC researchers are already working to meet these needs.
- **Smart residential and commercial buildings.** UC researchers are developing technologies for smart residential and commercial buildings as part of the effort to develop sustainable urban and suburban environments. These technologies include design and structural elements that deliver energy and resource efficiencies as well as attractive working and living environments. Approaches that use advances in building materials, sensor-coupled lighting and heating systems, and information technology-based controls will change living and working environments. Many of these approaches are already deployed at UC campuses as "test beds" to demonstrate their potential.

The Information Age and Artificial Intelligence (AI)

Information is a defining element of today's society. Individuals, institutions, and businesses are collecting, retaining, and using data for everything from creating and maintaining personal relationships through social media to developing new businesses that deliver personalized products or services. Maintaining the security and capacity of the associated networks is a vital component of responsible data management.

- **Cyber-Infrastructure.** Information technology is becoming increasingly integrated in large-scale infrastructure projects such as those involving energy, water, and transportation. UC researchers are working to develop the critical cyber-infrastructure that must be built to withstand events ranging from natural disasters to terrorist attacks to human control errors. Enhanced cyber-infrastructure will also be useful in addressing the long-term consequences of climate change, such as increasing temperatures and rising sea levels. Using information technology to develop a strong, sustainable cyber-infrastructure incorporating transportation, water, and energy systems will enable future responsiveness and resiliency.
- **Cyber-Security.** Faculty conduct cyber-security research at the forefront of areas that include secure voting, cryptography, privacy, and network security. Additionally, UC researchers collaborate with industry partners to make computing safer for users, with research focused on making personal computers safer from malware, developing innovations in platform and mobile computing security, managing and adapting to security threats, protecting personal data, avoiding data breaches, and giving people more control over their personal data and making it more secure regardless of storage location.
- **Big data.** As the data landscape continues to grow exponentially, effective data storage and utilization become increasingly important. UC researchers from disciplines as diverse as medicine, environmental sciences, computer science, and library sciences are collaborating on strategies for cataloguing and indexing datasets. Research in the field of big data focuses not only on the best strategies for using the data, but also on ensuring individual privacy, overcoming sociocultural hurdles, and creating a new scientific culture around data sharing. In 2015, a cross-disciplinary team of UC researchers received an NSF grant to establish the Pacific Research Platform (PRP), a massive regional data-sharing architecture which will enable teams of interdisciplinary researchers across the entire West

Coast to access and use ultra-large datasets, driving new discoveries in fields as wide-ranging as astronomy, biomedicine, environmental management and climate mitigation, and particle physics.

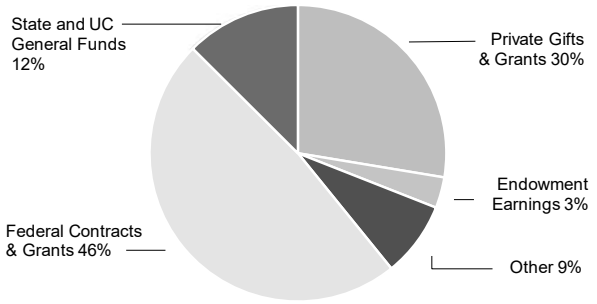
Intimately related to the aforementioned developments is the emergence of artificial intelligence (AI). AI is proving to be transformative. Whether its use involves comprehensively scanning clinical trial data for potential treatments for patients, providing personal assistants for use around the home, or carrying out tedious and labor-intensive tasks reliably and efficiently,

AI will affect our society in profound ways. UC has an enormous reservoir of interdisciplinary expertise and talent that allows formation of strong teams that can holistically evaluate the dynamic landscape, which not only includes technological developments, but policy and workforce implications, as well. We anticipate that the humanities, for example, will be a critical contributor to understanding the evolving nature of work and how this evolution affects future human behavior.

LEVERAGING THE STATE'S INVESTMENT IN THE UC RESEARCH ENTERPRISE

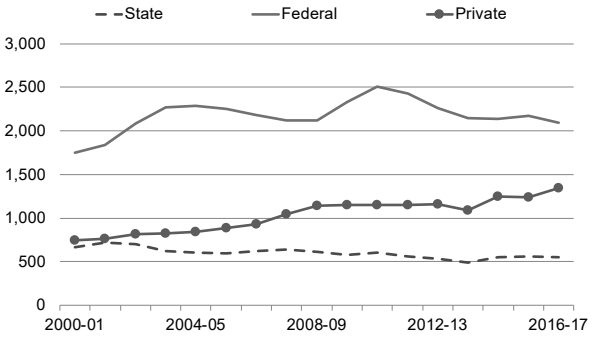
To maintain and enhance its competitive advantage, UC's world-class research enterprise requires the best faculty, research staff, postdoctoral scholars, and graduate and undergraduate students, along with state-of-the-art equipment, and well-maintained facilities. State investment is the basis for UC's research success and is essential to its sustainability and continued excellence. State funds are used to support a large portion of the salaries paid to faculty during the academic year, purchase equipment, staff laboratories, and support graduate student research assistants. State funds are also used to build and maintain facilities for conducting cutting-edge research, such as the California Institutes for Science and Innovation (CalISIs). These four world-class centers of research focus on telecommunications, quantitative biosciences, nanotechnology, and advanced electronics, which are some of the most promising new areas of growth for high-tech industries. The CalISIs, Multicampus Research Units (MRUs), and other Multicampus Research Programs and

Display VII-3: 2016-17 Direct Research Expenditures by Fund Source (Total: $4.6 Billion)



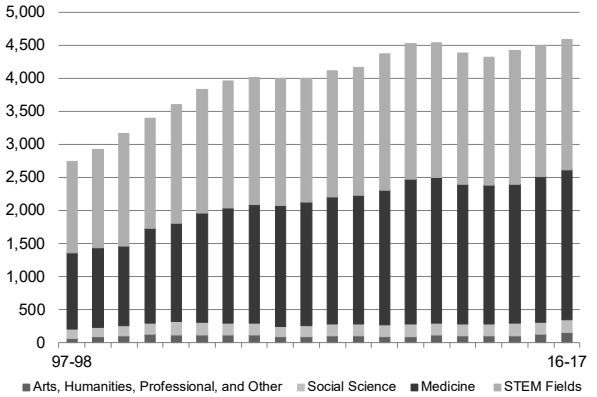
Over 75% of research funding is derived from federal agencies and private sources.

Display VII-4: Trends in Direct Research Expenditures by Source (Dollars in Millions; Inflation-adjusted)



Adjusted for inflation, direct research expenditures grew by about 35% since 2000-01. During this period State research funds (includes UC General Funds) have declined by 18% while federal and private research funds combined have grown by 38%.

Display VII-5: Direct Research Expenditures by Discipline (Dollars in Millions; Inflation-adjusted)



Expenditures for research in the medical fields have almost doubled since 1998, compared to an increase of 46% for all other disciplines.

and Initiatives, which are discussed further at the end of this chapter, provide the UC system an advantage in creating new knowledge and competing for large multi-site studies. Not only are such facilities used to conduct research, but they also serve an important pedagogical role as sites at which UC's faculty train and mentor graduate and undergraduate students and postdoctoral scholars, many of whom then enter the California job market as a highly trained workforce and contribute to California's economy.

UC researchers are very successful in securing external support for sponsoring their research. In 2016-17, UC received nearly $5 billion in research awards. The University's success in attracting extramural funds to California has been dependent on the State's continual investment and recognition that UC is an important contributor to the state's economic prosperity.

In 2016-17, direct research *expenditures* (as distinct from *awards*) totaled $4.56 billion, a 1.3% increase from the prior year.[5] Federal, State, and private sources are major providers of UC research funding. Federal agencies are the largest source of support for research, accounting for about half of all University research expenditures in 2016-17.[6] Display VII-3 shows direct research expenditures by fund source for 2016-17. Adjusting for inflation, Display VII-4 shows changes over time by source, and Display VII-5 presents trend data about research expenditures in the various disciplines.

State Funds

In 2016-17, 12% of direct research expenditures came from State Funds (includes State General Funds and State Special Funds) and UC General Funds to support coordinated statewide programs and State agency agreements. For many UC research programs, State and UC General Funds provide seed money for research projects vital to California, whether the subject is earthquake engineering or improved crop varieties, and allow programs to attract extramural funds.

State and UC General Funds provide support for direct research, including:

- the California Institutes for Science and Innovation;
- organized research units on individual campuses that support interdisciplinary research;
- Multicampus Research Programs and Initiatives (MRPIs);
- systemwide programs to support research on, for example, AIDS, tobacco, and breast cancer; and
- agricultural research through organizational units called Agricultural Experiment Stations (described in greater depth later in this chapter).

In 2017-18, State Special Funds are expected to provide about $104 million for a range of research initiatives, including a coordinated statewide program of tobacco-related disease research administered by the University ($10.1 million) and available to researchers from other institutions on a competitive basis. Part of the State's tobacco tax supports the Medical Research Program ($82 million) and the Breast Cancer Research Program ($7.2 million). The State personal income tax check-off also supports the California Breast Cancer Research Fund ($178,000) and the Cancer Research Coordinating Committee-managed research program ($425,000). State Special Funds will also support Type 1 Diabetes Research ($250,000).

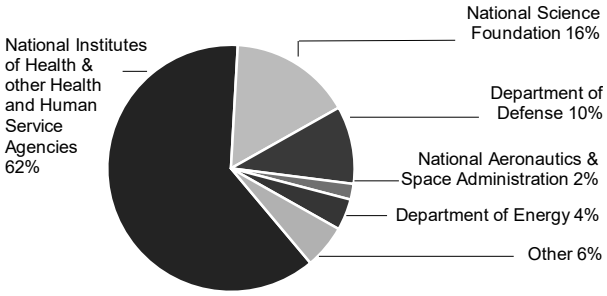
California State agencies also provide contracts and grants to the University for research. In 2016-17, expenditures from State agency sources were over $175 million. Major providers of State agency agreements include the California Departments of Public Health, Transportation, Health Care Services, Social Services, and Food and Agriculture, as well as the California Energy Commission, the California Emergency Medical Services Authority, and the California Institute for Regenerative Medicine.

Federal Funds

Federal awards remain by far the most significant source of support for UC's research enterprise – with an immediate effect on UC's ability to support graduate students and post-doctoral scholars. The University was awarded about

[5] This rate of growth differs from the rate of growth in extramural awards noted later, reflecting the multi-year nature of research awards.
[6] In addition, approximately 10% of UC's research expenditures from non-federal funds originated as federal awards to other institutions and come to UC as subawards.

Display VII-6: 2016-17 Federal Research Awards by Sponsor (Total: $2.9 Billion)



Federal agency sources supply about 60% of all research awards. NSF, NIH and other Health and Human Services agencies provide 78% of UC's federal research awards.

$2.85 billion in federal research funding alone in 2016-17. Display VII-6 shows the federal research awards distribution by agency. Awards from the National Science Foundation (NSF), National Institutes of Health (NIH), and other Health and Human Services (HHS) agencies accounted for 78%, or $2.2 billion, of the University's federal research funding, with the Department of Defense (DOD), National Aeronautics and Space Administration (NASA), and Department of Energy (DOE) making up most of the rest. Historically, UC researchers have successfully competed to win nearly 6% and 8% of the NIH and NSF annual R&D appropriations, respectively. The UC system receives more NIH funding than any other entity in the country, and about two-and-one-half times more than the next highest ranked institution, the Harvard-affiliated Partners Healthcare System.

Federal funds are primarily targeted at research in STEM (science, technology, engineering and mathematics) and medical fields, which combined total over 90% of direct research expenditures each year during the past decade. This proportion should not overshadow the vibrant research activity that also occurs in the social sciences, arts and humanities, and professional disciplines. These fields make important contributions to scholarship, yet have relatively little access to external research funding.

Owing to the dominance of federal funds as a source of UC's research funding, the outcome of the annual federal budget process has the largest impact on the University's research budget. While UC's proportional share has been relatively steady, fluctuations in UC's federal research funding closely parallel trends in the budgets of federal research-granting agencies. Display VII-8 provides a recent history of these fluctuations.

Although federal government funding for all university research decreased in 2005-08, an influx of American Recovery and Reinvestment Act (ARRA) funding in response to the Great Recession temporarily reversed the downward trend. UC researchers were awarded $1.1 billion in ARRA contract and grant funding for research and research infrastructure. As with regular federal research awards to UC, NIH and NSF were the primary sponsors of these ARRA funds. All ARRA funds were required to be expended by September 2013.

In 2012-13, as a consequence of the Budget Control Act of 2011, federal budget sequestration produced a sharp downturn in research funding to UC and other US academic research institutions, which exacerbated the impacts of the funding trough created after all emergency ARRA funds were expended. The Bipartisan Budget Act of 2013 and subsequent federal appropriations restored some of the R&D funds that had been cut by the 2013 sequester. Moreover, the passage of the Bipartisan Budget Act of 2015 raised discretionary budget limits, allowing fiscal year 2016 and 2017 appropriations for federal R&D programs to increase by an average of 8% compared to fiscal year 2015 levels, with NIH appropriations increasing by 6.6%. For fiscal year 2017, the NIH received a $2 billion (6.2%) increase over fiscal year 2016 under appropriations legislation finalized in May 2017. This $34.1 billion NIH funding level includes $350 million in 2017 for three health research programs in which UC has a strong record of achievement: $300 million for the Cancer Moonshot, $40 million for the Precision Medicine Initiative, and $10 million for the BRAIN Initiative.

In May 2017, the Trump administration's fiscal year 2018 Budget Request proposed dramatic cuts in a wide array of education and research programs, including a 22% cut to the National Institutes of Health (NIH), an 11% cut to the National Science Foundation (NSF), and a 17% cut to the Department of Energy Office of Science. Deep cuts were also proposed for student aid programs at the Department of Education, as well as in health professions training, the

Display VII-7: History of Federal Funding for UC Research

1992-93 to 1996-97	Focus on reducing the federal deficit resulted in much slower growth; federal support for UC rose 4% annually on average, with no increase in 1996-97.
1997-98 to 2001-02	Strong growth in the national economy led to funding increases for federal R&D, including a bipartisan commitment to double the NIH budget over 5 years. UC support grew 7% to 9% each year.
2002-03 to 2003-04	After the 9/11 terrorist attacks, federal budgets contained record increases for federal R&D due in part to new spending on homeland security and defense. UC support grew by more than 10% each year.
2004-05 to 2008-09	The federal budget was constrained due to military commitments to Iraq and Afghanistan, and growth of entitlement programs such as Medicare. Growth in research funding for UC again slowed, with annual increases of less than 4%.
2009-10	Due to an influx of funding from the American Recovery and Reinvestment Act (ARRA), federal contracts and grants funding to UC increased by 9%.
2010-11	With the end of ARRA funding, the fiscal year award total declined 3%. However, non-ARRA funding from both federal and private sources showed a modest increase, mitigating somewhat the ARRA fall-off.
2011-12	The federal funding base remained essentially unchanged from 2010-11. The most striking change was a 29% increase in funding provided by corporate sponsors for a total of $464 million in 2011-12. This reflected the slowly improving economic climate and reinvestment in academic R&D.
2012-13	The Budget Control Act of 2011 (BCA) required deep reductions in federal discretionary spending for ten years through 2021. The initial year's sequester cut was about $3.5 billion in federal academic research support nationwide. This translates to an approximately $175 million decline in federal research funding for UC and an additional decline of $25 million in non-research contracts and grants.
2013-14 to 2015-16	Together with the 2013 Bipartisan Budget Act and subsequent federal appropriations legislation, the passage of the 2015 Bipartisan Budget Act increased the flow of research funds to UC from federal agencies, particularly the National Institutes of Health. This restored funding to pre-sequester levels, after adjusting for inflation.

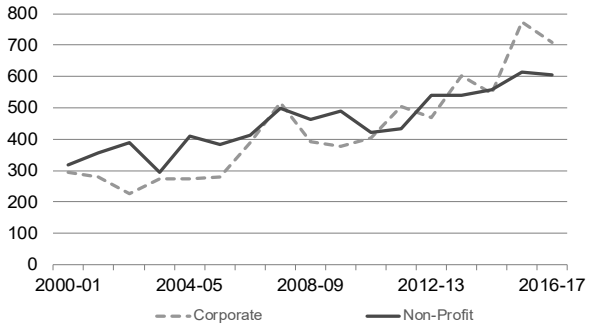
arts and humanities, and environmental, earth, and ocean sciences research at several other agencies.

Congress has taken steps to reject some of the proposed cuts. In fact, the House and Senate have each proposed a significant increase for NIH research in fiscal year 2018 -- $1.1 billion and $2 billion, respectively, above the fiscal year 2017 funding levels. However, progress on final appropriations legislation has stalled since a stop-gap funding resolution was passed in September to keep the federal government operating through December 8th. Until an overall budget and appropriations agreement is reached, federal funding in fiscal year 2018 for UC's core research mission remains at risk.

Private Funds

Research investment in UC by private organizations has kept pace with federal funds as an important source of research funding. From 2000-01 to 2016-17, private support for research has doubled in inflation-adjusted dollars (see Display VII-8); the more recent increase in corporate funding is due largely to an increase in the number and cost of clinical trials. Private foundations, industry, and partnerships with faculty at other institutions contributed over a quarter of total research wards in 2016-17. The global economic recession caused a decline in new corporate awards, as shown in Display VII-9, but corporate support has increased since 2010-11, showing that the business community is reinvesting in UC research. Sponsorship from non-profits has been increasing since 2010-11 and exceeds pre-recession levels. Among the

Display VII-8: Private Research Awards by Type of Sponsor (Dollars in Millions; Inflation-adjusted)



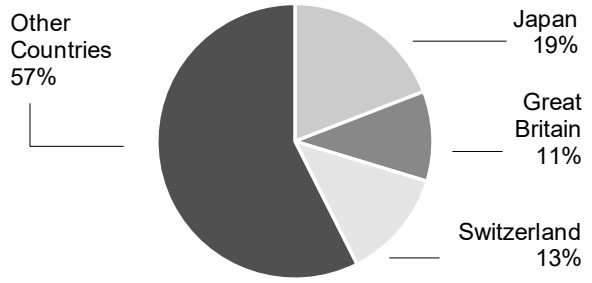
About 26% of all UC research awards, corporate and non-profit funding are above pre-recession levels.

largest awards from non-profits were those from the Bill and Melinda Gates Foundation ($64 million), the Tsinghua Education Foundation ($19 million), and the Gordon and Betty Moore Foundation ($12 million).

International Funds

Funds from international sponsors, a significant subset of private research awards, are important to the UC research enterprise and enable UC researchers to directly engage with researchers from around the globe. Moreover, as noted above, research is a global enterprise, and overseas investment in UC research is a measure of its quality against international standards. It is noteworthy that recent data indicate that roughly 40% of UC's scholarly outputs have international co-authors[7]. As shown in Display VII-9, UC has received nearly $1.06 billion in international research support from over 80 different countries since fiscal year 2011. Great Britain, Switzerland, and Japan contributed 43% of total international funding during that period, primarily in the medical and energy research disciplines.

Display VII-9: Research Awards by Foreign Sponsors FY 2011-17



Although international sponsors provide a relatively small portion of total research funding to UC ($1.06 billion over seven years, compared to almost $5 billion in research awards for fiscal year 2017 alone), this funding provides the valuable opportunity for UC scholars to engage directly with the global research community.

Department of Energy National Laboratories

UC oversees three Department of Energy (DOE) laboratories: the Lawrence Berkeley National Laboratory (LBNL) and two national security laboratories, Lawrence Livermore National Laboratory (LLNL) and Los Alamos National Laboratory (LANL). UC receives fees to manage the two national security laboratories and generally uses some of this money to fund collaborative research projects between UC scholars at the ten campuses, LBNL, LLNL, and LANL. The Lab Fees Research Program supports projects on a range of issues, including high energy density science, mesoscale materials science, and biological applications of advanced computing.

The Lab Fees Research Program gives UC faculty and students access to premier researchers in fields of strategic importance to the nation, as well as distinctive research facilities. The DOE laboratories also benefit from this program, as it is an important component of their long-term workforce development strategies; undergraduate and graduate students and postdoctoral scholars working with DOE researchers on their projects often go on to build their careers in national security laboratories. UC has managed these DOE laboratories since their creation during and immediately after World War II, and it maintains close intellectual ties to its DOE laboratories through this program. The DOE laboratories are discussed in more detail in the *Department of Energy – Office of the National Laboratories* chapter of this document.

INDIRECT COST RECOVERY

Budgets for externally funded research projects include direct and indirect costs. The direct costs are those items easily assigned to specific research projects, such as the salaries of the researchers and the equipment and materials that are uniquely used to conduct the research. Indirect costs cover the facilities and administrative expenses that are shared among many projects and thus are supported by the University.

At present, UC only recovers a portion of these indirect expenditures and has to subsidize the rest from other revenues. UC's federal Indirect Cost Recovery (ICR) rates are estimated to run 18-20 percentage points below the true indirect costs of conducting research. Moreover, research projects funded by the State of California, corporations, foundations, endowments, and gifts often have policies that preclude payment of indirect costs at

7 Source: *SciVal*® database, Elsevier B.V., http://www.scival.com (downloaded on September 14, 2017).

anything close to federal levels. These policies and practices place an even greater burden on the University's limited resources.

The University is working to recover more of its indirect costs from research sponsors by increasing its negotiated federal rates and tightening waiver management. Campuses periodically renegotiate their federal rates, which may rise relatively slowly over time. In future indirect cost rate negotiations, UC intends to continue to press its case to close the gap in the federal rate in comparison to its peer institutions, both public and private, which often receive a higher return on their overhead costs; progress has already been made on this front at some UC campuses. Although lower negotiated federal rates at public institutions are often justified by federal agencies under the argument that public institutions receive State support, State funding to UC has declined over the years and does not compensate for lower federal rates. Closing the gap in the federal rate would lessen the burden on University resources and allow greater flexibility in the use of discretionary funds.

PROTECTING THE STATE'S INVESTMENT IN THE UC RESEARCH ENTERPRISE

California's long-term investment and planning in support of the wide array of research conducted at UC impacts local communities, the State, and the country in countless ways. As discussed above, many industries for which California is among the world's leaders were based on UC research. UC patents have spawned over 1,000 startup companies, and UC researchers attract billions of federal and private research dollars to California, creating thousands of jobs and supporting the graduate and undergraduate students and postdoctoral scholars who will be among the state's next generation of leaders.

Numerous factors pose challenges to the UC research enterprise, including federal funding constraints and increased competition for the world's best scholars and students. Fiscal year 2017 federal funding levels for most programs were extended by Congress through the close of the 2017 federal fiscal year (end of September) at roughly fiscal year 2016 levels. However, unless additional legislation is enacted, spending cuts will resume in 2018 through 2021 for discretionary programs, and through 2025 for some mandatory programs. The President's fiscal year 2018 Budget Request, released in May 2017, proposes dramatic cuts in many federal research agencies' appropriations, and caps to some indirect costs that would reduce UC's federal support by hundreds of millions of dollars annually. Through its appropriations process, Congress has taken steps to mitigate or reject some of the proposed cuts. However, final fiscal year 2018 budget and appropriations agreements have not yet been reached. As such, federal funding in fiscal year 2018 for UC's core research mission remains at risk.

Consequently, the longer-term picture for federal award funding remains uncertain, which presents challenges for the stability and growth of UC's research enterprise, including support for graduate students and post-doctoral scholars, as well as payments for facilities developed under the assumption of higher revenue from contracts and grants. Additionally, the cost of conducting cutting-edge research in science and engineering is growing, there is increasing competition internationally, and the costs of compliance with extramural contract and grant requirements have risen rapidly as the federal government has added new regulations.

While the growth of awards from corporate and non-profit sources may help pick up some of the federal award funding slack, awards from such sources tend to be less predictable than the proposal-driven federal award system and often involve waivers leading to lower indirect costs rates. Increased core support provided by the State for the University's research staff and infrastructure would provide increased stability, particularly when State funding has not kept pace with the amount of extramurally funded research. It is vital that the State protect and enhance its long-term investment in the University's research enterprise, which, as noted above, helps fuel the state economy and impacts society.

SELECTED RESEARCH PROGRAMS

To illustrate the vitality and strength of the UC research enterprise and its substantial contribution to California and its economy, the rest of the chapter provides examples of currently or previously State-funded research programs.

California Institutes for Science and Innovation

In the early 2000s, the State, UC, and hundreds of pioneering businesses joined together in an unprecedented partnership to create the California Institutes for Science and Innovation (CalISIs), using $400 million in State-supported capital funding matched two-to-one from federal and private sources. The four Institutes, each jointly operated by multiple UC campuses, engage UC's world-class research faculty directly with California, national, and international companies in tackling large-scale issues critical to the state's economy and its citizens' quality of life. Information technology, telecommunications, nanotechnology, quantitative biosciences, health and health care delivery, environmental management, cyber-infrastructure and cyber-security, and energy systems are among the areas of focus for new research and innovation.

The Institutes have vastly increased technology development and exchange with California's industry and government. For example:

- California Institute for Telecommunications and Information Technology (Calit2) is developing innovative approaches to combining high speed data analysis with fundamental research in biomedicine and neuroscience and advances in wireless wearable or implantable sensors. Low-cost sensors and wireless systems create a constant monitoring capability at home, at work, and in conventional point-of-care environments that will allow the detection of "signature" changes in an individual's biological, behavioral or environmental status compared to the population as a whole. Early detection can lead to therapies that correct problems and provide feedback about behavioral changes that promote wellness while also allowing for more efficient treatment of existing conditions. Under this emerging paradigm, fewer people will develop extended episodes of chronic illness, allowing resources to be redirected to the promotion of children's health as a foundation for lifetime health for all. The continuing expansion of personal health tracking data requires an increasingly sophisticated biomedical cyberinfrastructure to store, integrate, compute, visualize, and model patterns of data important to health.
- California Institute for Quantitative Biosciences (QB3) fosters collaborative research in which scientists take on challenges in molecular biology using the techniques of physics, chemistry, and computer science. Faculty at QB3 have made advances in genome engineering and genetic engineering, in synthetic biology and biofuels, and in developing innovative medical devices. QB3 partners with industry to provide support (including access to research facilities, internships, mentoring, incubators, and seed funding) for entrepreneurial scientists as they bring their research to market.
- California Institute for Technology Research in the Interest of Society (CITRIS) is building on research strengths and developing areas of emerging expertise in information technology to develop four initiatives: Sustainable Infrastructures, Connected Communities, People and Robots, and Health. Within each initiative, CITRIS researchers are working to solve specific, large-scale problems while simultaneously addressing themes encompassing all four initiatives, such as physical and cyberinfrastructure resilience, big data analytics, and advances in nanotechnology. Advances in information technology allow researchers to recognize interrelationships across critical systems, enabling new approaches to solving problems involving far-reaching societal challenges.
- California Nanosystems Institute (CNSI) is focused on exploring the opportunities for nanoscale research in various sectors of California industry. In the energy area, nanoscience is helping create new configurations for solar cells and batteries that will increase efficiency. In health care, these technologies can create new drug delivery modalities, and biosensors. In the environment, nanoscale structures could offer new alternatives for water purification and desalination as well as carbon dioxide capture. In information technology, nanomaterials could help engineers design the next generation of microprocessors with higher processing power and lower energy use.

While capital funding allowed the development of these state-of-the-art facilities, funding for operations has been inadequate. Operations require funding for advanced technology infrastructure, specially trained technical personnel to operate the advanced instrumentation, and seed money for building new research teams across disciplines and campuses, as well as for attracting large-scale extramural contracts and grants from industry and governmental sources.

In 2012-13, the State provided $4.8 million for support of the Institutes; this funding was supplemented by $8.4 million from both permanent and one-time UC sources. The Institutes continue to be a systemwide priority and, accordingly, base support for the Institutes was increased by $3.5 million in 2013-14. Currently, total support for the Institutes is $16.6 million: $4.8 million in State support and $11.8 million in other UC funds.

Institute of Transportation Studies

The Institute of Transportation Studies (ITS) is a multicampus research unit (MRU) with branches on four campuses that brings together researchers from more than 30 disciplines across the UC system to address critical State goals in high priority areas such as traffic congestion and management, climate change, urban sustainability and air quality, infrastructure and energy, transportation system performance/optimization, and taxation and finance. Recognized as one of the premier centers of transportation research in the world, ITS researchers are committed to building effective collaborations with state and federal partners, to enable new ways of thinking about transportation.

Since 1947, ITS has been funded with a small portion of the fuel taxes that have supported the Public Transportation Account (PTA) and receives an annual PTA allocation of $980,000. In fiscal year 2016-17, ITS received a $3 million one-time funding augmentation, and will receive $5 million per year for ten years under the terms of the transportation infrastructure package passed by the Legislature in SB 1. This much appreciated State investment is critical to enabling ITS researchers to help address California's research priorities, and ITS is developing a multi-tiered research initiative focused on increasing statewide transportation research engagement (including with other UC and CSU campuses).

Multicampus Research Programs and Initiatives

By leveraging the best talent from throughout the UC system to address the most challenging social, economic, and environmental problems, UC's Multicampus Research Programs and Initiatives (MRPIs) make critical contributions that fulfill the University's mission and benefit California. Selected through rigorous independent peer review, MRPI awards fund multicampus research collaborations to advance innovative scholarship, create new knowledge, support graduate and undergraduate students and postdoctoral scholars, and work directly with communities and State agencies to disseminate the expert knowledge of UC faculty in areas of importance to California.

The MRPI awards use modest UC support, typically in the range of $100,000 to $500,000 annually per research project, to stimulate multicampus engagement, as well as to dynamically link research across the ten campuses, five medical centers, and three national laboratories into a network of shared information, resources, and dissemination, which in turn helps secure outside support in emerging areas. Awards are made in all fields of university scholarship. The next competition will be held in 2018. Below are some examples of multicampus research endeavors launched in 2017 that use UC's unique combination of depth and breadth:

- Fighting Drought with Stormwater is a multidisciplinary research-to-practice collaboration aimed at revolutionizing how urban stormwater is collected and managed to both safely augment water supplies and minimize flood risk. The team brings together faculty from the Irvine, Los Angeles, Riverside, San Diego, and Santa Barbara campuses to develop the science, engineering, and policy innovations needed to address critical water supply management in southern California and statewide.
- The UC Valley Fever research collaboration among scientists at the Berkeley, Merced, Riverside, San Diego, and San Francisco campuses will leverage UC expertise and special laboratory facilities to assemble and sequence the DNA of the soil-borne fungal pathogen strains that cause Valley Fever, then map and test the genes for virulence to address a significant public health issue affecting California's Central Valley and the American southwest.
- Humanists and cultural studies scholars at the Berkeley, Los Angeles, Merced, Riverside, and San Diego campuses are collaborating to better understand one of the defining issues of the 21st Century: the past and present refugee experience as war and climate change continue to displace millions of people around the world. The Critical Refugee Studies project is aimed at informing the policies and practices that shape the lives of over 700,000 refugees who have settled in California since the mid-1970s and others worldwide.
- Seeking to determine whether California's new electorate will reflect the changing demographic patterns of California, a multi-campus team of social scientists from Berkeley, Davis, Merced, Riverside, and San Diego will examine the impact of election reforms in California. In the context of an increasingly diverse population and low voter turnout, the team will work with state lawmakers and students on whether new laws fulfill the goals of increasing and broadening participation in California elections.

The MRPI portfolio of awards represents a shared resource supported by all ten UC campuses. Funding levels for the program declined by $11.6 million between 2009-10 and

2014-15. In 2014-15, the President approved a one-time increase of $2.61 million, and in 2015-16, a permanent increase of $2 million annually was approved. The annual award budget is now approximately $8.3 million.

President's Research Catalyst Awards

Recognizing the value of systemwide investment in multicampus research, in December 2014, President Janet Napolitano launched the President's Research Catalyst Awards initiative. Over three annual competition cycles, the Catalyst Awards have directed nearly $10 million to fund multicampus research in areas of strategic importance, including climate change, cultural preservation of world heritage sites, equity and social justice, education innovation, health care, and basic science. Selected awards involve multi-campus, multi-disciplinary efforts; incorporate research, teaching, and learning for undergraduate and graduate students; and take advantage of the shared facilities, expertise, and economies of scale available through UC's ten campuses. Twelve awards have already been conferred under the initiative.

From among the diverse and compelling Catalyst Awards portfolio, two examples highlight the value and breadth of this key investment for California. Addressing critical education needs in the state, faculty from the nine undergraduate campuses, in collaboration with the CSU System, the California Department of Education, and the Commission on Teacher Credentialing, will research the efficacy of teacher preparation programs, create an infrastructure for statewide data collection, and serve the state through research on policy implementation. This team will also develop a cross-campus doctoral program in teacher education. Leadership by UC and its collaborators will inform national debates about improving academic outcomes across the United States.

A second example focuses on food, agriculture and drought management. A team of scientists at four UC campuses, partnering with Lawrence Berkeley National Laboratory and the Agricultural Research and Extension stations, is undertaking cutting-edge research on the soil microbiome that holds promise for understanding soil-carbon dynamics as they relate to dwindling water supplies. This research will examine the intersection of farming practices, irrigation methods and production of key California crops, and will inform agricultural systems around the world that face water shortages.

Natural Reserve System (NRS)

Established by the Regents in 1965, the NRS is a unique assemblage of protected wildland sites throughout California. The NRS's marine and terrestrial reserves, field stations, and research centers encompass nearly all of the state's major ecosystems and are managed to support UC research, teaching, and public service programs. The ecosystems and facilities offered by each reserve are available to faculty and students from all UC campuses and other institutions, public and private, from around the world, as well as approved users from the general public. The 39 sites of the NRS encompass more than 756,000 acres and provide research access to several million more acres of protected public lands. The NRS network spans more than 500 miles north to south and 470 miles east to west. Overall, the NRS is the largest and most diverse university-operated system of natural reserves in the world.

As part of its mission, the NRS fulfills a variety of public service roles. These include providing public science lecture series; fostering citizen science projects studying topics such as biodiversity and phenology; hosting K-12 classes including underrepresented minority children from areas such as Los Angeles and Mammoth Lakes; and supplying expertise in land management and environmental policy decision making. Four NRS reserves also have been designated as part of UNESCO-designated biosphere reserves. The Man and the Biosphere Programme employs science to harmonize relationships between people and their environments. Reserves provide study ecosystems for projects researching subjects such as biodiversity loss, climate change, environmental monitoring, and sustainable development to formulate solutions relevant to local cultures and ecosystems.

In addition, under the California Environmental Quality Act (CEQA), the University of California is designated as a "Trustee Agency" with regard to its NRS reserves. According to CEQA Guidelines (Section 15386), "Trustee Agency" means a state agency having jurisdiction by law over natural resources which are held in trust for the people of the State of California. As one of only four legislatively

designated Trustee Agencies in the state, the University bears a fiduciary responsibility to the people of the State of California with regard to its NRS reserves. This fiduciary responsibility imposes on the University a duty to manage and use its NRS reserve lands in a manner that protects the long-term integrity of the land's natural resources, avoids or mitigates significant impacts on the reserve environment, and seeks to prevent such impacts on these reserve lands by others. Because of this responsibility, the Systemwide NRS Office serves as the state-identified recipient of, and responder to, legal environmental notices received by the University as Trustee Agency for projects that may impact its NRS reserves.

Researchers use NRS reserves as outdoor laboratories where they can analyze natural systems, investigate important ecological and evolutionary principles, and attain a better understanding of how humankind impacts the Earth and how the Earth supports humankind. The large-scale canvas of the NRS enables researchers to compare species and conditions in one portion of the state with those in another, at a spatial magnitude relevant to species and their management. The ability to conduct such studies over the long term is crucial at a time when anthropogenic changes are occurring to the environment across the globe.

Research within the NRS addresses such pressing global problems as climate change, wildland conversion, environmental deterioration, declining water quality, and disappearing biodiversity. Reserves are also used to investigate human history in California, look for supernovae, and listen for earthquakes, among many other projects. Research conducted at NRS reserves spans the breadth of intellectual endeavor, from anthropology to the performing arts.

The NRS offers educational programs for students at all levels. It has a growing citizen science program, hosts K-12 class field trips, and offers hands-on workshops and training courses that complement a wide range of undergraduate and graduate courses taught at NRS sites. Several NRS reserves host *Adventure Risk Challenge*, a leadership-literacy-outdoor education program offered to high school students from underserved communities. This program improves academic skills, exposes students to a range of natural environments and wilderness experiences, and helps them build the confidence needed to accomplish goals, succeed in high school, graduate from college, and become engaged citizens.

The NRS's undergraduate field ecology and conservation course, *California Ecology and Conservation*, brings together students from the nine undergraduate campuses for seven weeks of intensive scientific training at NRS reserves. Guided by experienced instructors, students complete a series of increasingly independent research studies while learning to detect natural patterns, frame questions into feasible research projects, and apply field techniques. At the conclusion of each project, students analyze their data and present their findings in oral presentations, posters, and written reports. Students hone their research, public speaking, and scientific writing skills with constant practice and feedback while gaining a working familiarity with California's diverse ecosystems. Students are in the field at various NRS reserves for the duration of the course. The NRS is developing a new program that will offer a diverse group of undergraduate students the opportunity to conduct independent field-based scientific research on NRS reserves with the guidance of UC faculty and graduate student mentors. This program, aligned with systemwide diversity and engagement efforts, will encourage underrepresented minority students to consider field research careers.

The NRS receives modest funding from State General Funds, which is matched by campuses to provide for the responsible administration and stewardship of the reserves. In the last decade, the NRS also benefited from a matching fund program that provided for facilities construction, improvements, and land acquisition via the 2006 Proposition 84 bond fund managed by the Wildlife Conservation Board. However, the NRS faces significant challenges as it readies its land stewardship, infrastructure, and operations for the demands of 21st century research, education, and public service.

To address its financial needs, the NRS has initiated a multi-year capital campaign to raise $50 million. This funding will address deferred maintenance, support existing research and educational programs, provide student scholarships, bolster or establish reserve endowments, and strengthen NRS programs. The NRS 50th Anniversary

Capital Campaign is critical to achieving financial sustainability for the NRS.

Behavioral Health Centers of Excellence

Beginning in 2014-15, the Davis and Los Angeles campuses launched the Behavioral Health Center of Excellence, with each campus receiving $7.5 million in funding from the Mental Health Services Act (MHSA) to be expended over 3 years. Working with county and local agencies, the Centers facilitate the rapid dissemination across California of innovative research and evidence-based practices. The Centers will provide pathways for translating research to benefit their communities. At the Los Angeles campus and its Semel Institute, MHSA funding complements the American Recovery and Reinvestment Act-funded Clinical Translational Research Center, as well as research, communication, education, and outreach programs that address disparities across demographic groups through innovations in community engagement and information strategies developed at UCLA's Centers for Health Services and Society. At the Davis campus, MHSA funding supports grants for its researchers, graduate students, postdoctoral fellows and early career faculty whose research in neuroscience, mental and behavioral health, and similar fields are linked to Proposition 63-supported programs, Veteran Affairs, other health organizations, or government-related institutions in Northern California and rural counties.

Agriculture and Natural Resources

The Division of Agriculture and Natural Resources (ANR) is a statewide network of UC researchers and educators dedicated to the creation, development, and application of knowledge in agriculture, natural, and human resources. ANR's mission is to maintain and enhance connections that fully engage UC with the people of California and achieve innovation in fundamental and applied research and education that supports sustainable, safe, nutritious food production and delivery systems; economic success in a global economy; a sustainable, healthy, productive environment; science literacy; and positive youth development. ANR is unique in its three-way partnership with federal, state, and county governments to provide local and statewide research and extension programs that address the critical issues of California. ANR's research and public service programs are delivered through two organizational units: the Agricultural Experiment Stations (AES) and Cooperative Extension (CE). While both units conduct research, CE also is the outreach arm for ANR, extending research to communities across the state, as described in the *Public Service* chapter.

AES is located within three colleges on the Berkeley, Davis, and Riverside campuses, as well as at the School of Veterinary Medicine at Davis. There are approximately 600 AES faculty housed in 38 academic departments. The AES faculty hold split appointments, with an average of half of their salaries paid for from AES funds for their research responsibilities and the remainder funded from the general campus for their teaching responsibilities. AES faculty represent a variety of disciplines and, consistent with the University's land grant status, are charged with conducting fundamental and applied research related to contemporary and relevant problems facing agriculture, natural resources, nutrition, and youth development. ANR statewide programs focus on specific issues that engage AES academics and faculty from all UC campuses, allowing teams to work on complex issues that require multidisciplinary approaches. In addition, ANR's nine research and extension centers, located in a variety of ecosystems across the state, provide a core research and extension base.

ANR continues to strategically invest resources to reduce administrative overhead while focusing ANR programs and people on the future through its 2025 Strategic Vision. In 2016, ANR completed a rigorous strategic planning effort to operationalize the vision. Three of the 15 strategic plan goals include: generate revenue and optimize resource deployment, expand and diversify fundraising, and streamline administrative functions. All goals include key strategies, targets, and metrics.

Examples of recent research conducted by AES and CE scientists that help to address the current, complex challenges facing California include:

Innovation and Climate Adaptation in Natural Resource Management. The Cal-Adapt project (a collaboration with ANR scientists, UC Berkeley's Geospatial Innovation Facility, and other partners) developed a web portal

showcasing California's climate research. It allows decision-makers, scientists, and residents to turn climate projections into effective adaptation policies and practices. The site has had more than 68,000 unique visitors from 170 countries. The Governor's Office of Planning and Research has used Cal-Adapt for the Climate Adaptation Guide.

Innovation in Forest and Wildfire Management. UC ANR's Sustainable Natural Ecosystems Initiative includes projects to better understand forest dynamics and improve management strategies. For one project, UC ANR researchers resampled large areas of Sierra conifer forests that were inventoried in 1911 to create an unprecedented comparison of forest structure and fire effects over time. The robust forest ecology data are now being used by the U.S. Forest Service to make forest plan amendments, and has provided insights about the effects of the 2013 Rim Fire, the third largest fire in California history.

Innovation in Water Quality and Quantity. UC ANR's Water Quantity, Quality and Security Strategic Initiative supports projects that are essential to sustaining California's water resources. Improvements in irrigation efficiencies can lead to increased salinity in groundwater. One ANR study identified acceptable salinity levels to assist growers in their use of salt-affected groundwater. Additionally, field experiments that could influence fertilizer regulations have identified optimal fertilization of irrigated crops to minimize leaching of fertilizers into groundwater. Another project has identified strategies for the commercial vegetable industry to remediate nitrogen-laden surface water.

Innovation in Market Expansion in Agriculture. ANR's Agriculture Issues Center conducts cost and return studies that estimate the economic effects of growing conventional and organic crops, and producing cattle. The studies show a range of market scenarios and help growers and ranchers understand what to expect from a well-managed operation.

ANR researchers provide producers with additional market opportunities by developing new cultivars of fruits and vegetables. For example, California today has more than 4 million Tango mandarin trees, which was a low seed variety developed by the UC Riverside citrus breeding program.

Innovation in Food Supply Safety. Outbreaks of highly pathogenic avian influenza have killed birds at commercial poultry farms, spurring ANR scientists to research the risk factors that lead to the spread of avian influenza and to develop more safeguards to protect poultry in California. As a result, ANR scientists created and made available a free survey for poultry owners to identify the farmers' biosecurity strengths and weaknesses, and then provide research-based recommendations to minimize risks.

Innovation in Invasive Species Prevention and Control. AES researchers have identified strategies to reduce insect pests. For example, one study demonstrated that mixing insecticidal baits and "trail following pheromones" significantly improved the ability to successfully bait invasive Argentine ants, a technique which could revolutionize the way insecticidal baits are used in the industry. Other research teams, working with low-income, multi-occupancy housing complexes, identified a combination of integrated pest management strategies to substantially reduce the incidence of bed bug infestations. Results from surveys conducted in both English and Spanish indicated that tenants were more satisfied with the bed bug-control strategies implemented by UC researchers than previous attempts to alleviate bed bug infestations.

Labor Research and Education

Growing international economic integration, policy changes, transformations in business organization, new technology, and other changes have brought many positive developments, but have also resulted in emerging issues and concerns for communities, researchers, and policy makers. The UC labor program engages in research and education that advances knowledge and understanding of these new challenges and opportunities from a variety of perspectives and disciplines, including historical, comparative, and institutional approaches.

State funding for the Institute for Labor and Employment (ILE) was first provided in 2000-01, when the State added $6 million in the University's budget to establish a multicampus research program focused on issues related to labor and employment. Since that time, however, funding for the program has been unsteady. During the early 2000s, the State's fiscal crisis necessitated cuts to the

University's State-funded research budget, including funding provided for ILE, and funding was eliminated entirely in 2005-06. State funding was restored for 2006-07 and 2007-08, but not for the ILE. Instead, $6 million was provided for labor research and, of that amount, 40% ($2.4 million) was provided for labor education and training programs. The ILE, as it had been established, was disbanded.

During the recent fiscal crisis between 2007-08 and 2013-14, the University continued support for labor research by providing $4 million in 2008-09 and $2 million in 2009-10 and 2010-11, which was split between the Berkeley and UCLA Institutes. In 2011-12, temporary funding of $1 million to each center was provided by redirecting funds from existing programs. The 2014-15 Budget Act appropriated $2 million in permanent funds and another $2 million in one-time funds for the Labor Centers. The State Assembly provided an additional $2 million from its own operating budget to further augment the Labor Centers budget for one year only, bringing the total funding to $6 million in permanent and one-time funds for 2014-15. In 2015-16, the Legislature augmented the University's budget to bring permanent funding for the program to $6 million, or $3 million for each Center.

SPOTLIGHT ON RESEARCH EXCELLENCE: CARBON NEUTRALITY AND ENERGY SUSTAINABILITY

UC's research enterprise is poised to address the many challenges related to carbon neutrality and sustainability in alignment with President Napolitano's Carbon Neutrality Initiative and the University's goal of becoming the first major research university system to achieve carbon neutrality by 2025. UC's commitment to create public benefit from its research endeavors incentivizes researchers to study both the causes of and the solutions to this global challenge, and to engage students in this important research. With this in mind, a systemwide faculty steering committee is working with the Carbon Neutrality Initiative Faculty Engagement & Education Workgroup and UCOP's Innovative Learning Technology Initiative to develop an online course titled "Bending the Curve: Scalable Solutions for Carbon Neutrality and Climate Stability." This course will be offered across all UC campuses beginning in 2017. Additional programs highlighted below discuss the wide variety of approaches across topic areas previously discussed in this chapter.

Alternatives to a Fossil Fuel-driven Society

Economical and sustainable alternatives to fossil fuels have the potential to mitigate climate change impact caused by increased levels of atmospheric CO_2. UC researchers are already leveraging their individual expertise and the power of systemwide and industry collaboration to find alternative fuel solutions.

Based at the Merced campus, UC Solar is dedicated to designing and developing innovative solar energy generation technologies that are more efficient, more affordable, and easier to integrate into existing infrastructure. In collaboration with utilities, industry and other stakeholders, UC Solar researchers are creating solar technologies that can be brought to the marketplace quickly and integrated seamlessly.

In biofuels research programs, UC researchers are transforming biomass sugars into energy-rich alternative transportation fuels by applying advanced biological knowledge to the area of bioenergy development. At the Department of Energy-funded Joint Bioenergy Institute, UC Berkeley and Lawrence Berkeley National Laboratory researchers use the latest tools in molecular biology, chemical engineering, computational and robotic technologies, and pioneering work in synthetic biology to create alternatives to petroleum, diesel and jet fuel.

Other research at UC Davis' Energy Institute and UC Riverside's Center for Environmental Research and Technologies focuses on turning agricultural and human organic waste into biogas as a renewable alternative to natural gas. This effort relies on optimizing microbiological and chemical engineering processes to develop facilities that can be deployed at a local level or integrated with existing waste management infrastructure.

Energy Distribution Infrastructure

Alternative and potentially decentralized modes of energy production will demand novel approaches to energy distribution that cannot rely on existing infrastructure. Biofuels do not need the traditional refining capacities needed for oil-derived liquid fuels, but may need other

chemical modifications requiring new and different industrial facilities. In the future, synthetic biology may allow us to create these chemical modifications biologically. Fuel transportation and storage may need to change to accommodate a more decentralized production model. Alternative electrical generating modalities, with many smaller generation sites rather than large centralized plants, will likewise challenge our current power distribution system. This "grid" will have to be flexible and adaptable to balance supply and demand across large regions.

UC researchers are addressing topics such as electric vehicle integration, automated demand response, microgrids, distributed and renewable supply integration, energy storage integration, and the development and deployment of efficient, environmentally-sensitive, sustainable power generation and energy conversion worldwide. In September 2016, UC researchers and energy storage industry representatives held a Battery Research Workshop with the goal of ensuring that academic research on energy storage is informed by industry's needs.

Energy Efficiency

Another important element of energy sustainability is energy efficiency. Whether through transportation systems or green building design and construction, this challenge will require additional research to develop an energy-efficient public and private infrastructure. UC researchers are at the forefront of many of these areas.

In 2006, the Energy Efficiency Center (EEC) was established at the Davis campus, and was the first university-based energy efficiency center in the United States to focus on accelerating the development and commercialization of energy efficiency technologies and training future leaders in energy efficiency.

UC researchers are also revolutionizing the lighting industry. Dr. Shuji Nakamura, a key member of the Solid State Lighting Center at the Santa Barbara campus, was a recipient of the Nobel Prize in Physics in 2014 for research which led to the invention of efficient blue light-emitting diodes (LEDs). These devices have transformed the lighting industry, including production of bright and energy-efficient white light sources.

Beyond lighting, next-generation building design must incorporate energy efficiency into its architectural and engineering fabric. The Green Building Research Center at the Berkeley campus was created to advance and promote sustainable building design and operation on the Berkeley campus, and provide resources to aid other universities in similar efforts across the State. The Center developed hardware and software for a wirelessly networked campus lighting control system that can be inexpensively retrofitted in existing buildings.

Climate Adaptation and Mitigation/Environmental Monitoring and Assessment

Understanding how ecosystems and societies adapt to climate change is essential to creating approaches that mitigate the harmful effects of such changes. Any attempted mitigation needs to recognize and adapt to underlying biological and societal constraints. Technologies for monitoring and assessing adaption and mitigation are being developed across UC in both rural and urban settings. Notable examples include:

- The UC Natural Reserve System Climate Modeling Network, which consists of 19 new automated weather and climate monitoring stations operating in UC's Natural Reserves. The stations are all constructed from similar, high precision equipment and use the same set of data collection protocols.
- The Sierra Nevada Research Institute at the Merced campus uses the San Joaquin Valley and the Sierra Nevadas as its "outdoor laboratories" to conduct basic and applied research on the impact of rapid population growth; competition for natural resources; air, water and soil pollution; climate change; and competing land usage.
- The California Center for Sustainable Communities at the Los Angeles campus creates real-world solutions that improve the sustainability of urban locations by developing cities as centers of sustainability that mitigate impact on their surrounding landscapes.

Policy, Economics, and Behavioral Impacts

No matter what technological solutions are created, understanding how society will interact with them will be critical. Policies may attempt to dictate implementation, but economics and human behavior will determine whether they succeed. Across UC, social science researchers and economists are already tackling these issues, focusing on energy and climate policy, energy efficiency, market-based

environmental regulations, and behavioral economics, while also working to bridge the gap between the frontiers of economic and scientific energy research and the marketplace. Policy centers throughout the UC system are working to leverage world-class scientific expertise and engage directly with decision-makers to deliver credible, relevant, and timely information and analysis. The Center for Energy and Environmental Economics at UC Berkeley's Energy Institute, for example, focuses on energy and climate policies and environmental regulations, energy efficiency, and behavioral economics to bridge the gap between economic and scientific energy research and the marketplace. The Center for Climate Change Solutions at the Los Angeles campus operates at the intersection of science and policy by bringing researchers and decision-makers together to catalyze and create effective policies to address the threats and challenges posed by climate change, and to conduct cross-disciplinary research on technological and knowledge-based solutions to the causes and consequences of climate change. Other policy-centric research centers include the Climate and Energy Policy Institute at the Berkeley campus, which provides an interdisciplinary forum for research on a wide range of aspects of climate policy spanning social sciences, engineering, and climate science; and the Policy Institute for Energy, Environment and the Economy at the Davis campus, which promotes the use of UC Davis' broader research expertise in policy-making in California, nationally, and internationally on issues related to low-carbon transportation, clean energy, and climate change adaptation.

SPOTLIGHT ON PRESIDENTIAL INITIATIVES: UC-MEXICO INITIATIVE

California operates in an increasingly global context, and UC is working to ensure that its academic community reflects this reality. The UC-Mexico Initiative is a prime example of these efforts. The UC-Mexico Initiative expands the opportunities for collaborative research efforts and education policy development by creating a sustained, strategic partnership between the University and institutions in Mexico to address issues of common interest and educate the next generation of leaders. Every UC campus has existing programs on Mexico, ranging from vibrant centers to individual faculty research collaborations, to student travel via the UC Education Abroad Program. The UC-Mexico Initiative brings together these many existing programs and activities, providing a central entry point for external audiences and partners in Mexico, and creating synergies among current efforts. This Initiative leverages UC's network of Mexican partners and stimulates development of new programs and partnerships in academia, government, private, and non-profit sectors through faculty involvement in the Initiative's working groups on energy, education, health, environment, and arts and culture.

Part of the foundation supporting the UC-Mexico Initiative is the University of California Institute for Mexico and the United States (UC MEXUS), established in 1980, as a multicampus research unit (MRU) based at the Riverside campus that serves all ten UC campuses and three national laboratories. UC MEXUS provides a coordinated University-wide approach to Mexico-related studies through its support and facilitation of research, education, public service, and exchanges that pertain to Mexico and Latino populations in the United States.

Through an agreement with CONACYT (a Mexican funding agency), UC MEXUS provides support for doctoral students from Mexico coming to study in the UC system; and for postdoctoral researchers from both countries within the UC system. The program also provides funding for binational collaborative research projects. UC MEXUS research encompasses all academic disciplines within five key areas:

- Mexican Studies, as related to Mexican history, society, politics, culture, arts, and economy;
- United States-Mexico relations in contemporary and historical contexts, including the economic, political, demographic, and cultural interactions between Mexico and the United States;
- Latino Studies, related to the history, society, culture, and condition of Mexican-origin populations in the context of American society and institutions, including their interactions with other U.S. immigrant groups;
- Critical Issues in terms of urgent public policy and academic topics affecting Mexico, the U.S.-Mexico relationship, or Mexican-origin populations in the United States; and
- UC-Mexico Collaborations between U.S. and Mexican scholars in all disciplines, including the basic and applied sciences, humanities, and the arts.

Public Service

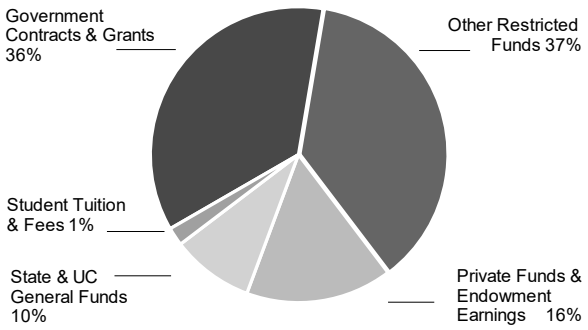
Public service includes a broad range of activities organized by the University to serve state and local communities; students, teachers and staff in K-12 schools and community colleges; and the public in general. Consistent with its mission as a land grant institution, UC's public service programs help improve the quality of life in California by focusing on major challenges, whether in business, education, health care, community development, or civic engagement, that affect the economic and social well-being of its citizens.

State funds support a variety of public service programs at UC. This chapter describes five major State-supported public service efforts:

- Student Academic Preparation and Educational Partnerships,
- the California Subject Matter Project,
- COSMOS,
- Cooperative Extension, and
- the Charles R. Drew University of Medicine and Science.

Campuses also conduct other public service programs that are supported by State funds, as well as by student tuition and fees, user fees, and other non-State fund sources. These programs include arts and lecture programs and student- or faculty-initiated community service projects.

Display VIII-1: 2016-17 Public Service Expenditures by Fund Source (Total: $653 Million)



While State funds play an important role in UC's public service programs, significant funding for Cooperative Extension and other major programs is generated from government contracts and grants and private sources.

STUDENT ACADEMIC PREPARATION AND EDUCATIONAL PARTNERSHIPS

Student Academic Preparation and Educational Partnerships (SAPEP) programs seek to raise student achievement levels and close achievement gaps among groups of students throughout the K-20 (kindergarten through university) pipeline, tasks critical to keeping California's economy competitive. In fall 2016, students from a large majority of traditional California public high schools matriculated to UC: UC freshman enrollees came from 1,173 (88.5%) of the 1,326 schools open in 2015-16. However, over half of these students came from 239 (20.4%) of the 1,173 high schools. With a focus on serving students who attend historically under-resourced schools in California, UC's 13 SAPEP programs reached students at more than 1,100 K-12 public schools and all 113 community colleges in 2015-16, raising college eligibility rates, increasing transfer from community college to four-year institutions, and preparing undergraduates for graduate or professional education.[1] The Regents have identified closing achievement gaps, improving access to college, and increasing diversity at UC as among the University's highest priorities.

Through SAPEP programs, UC reaches students and schools in most need of assistance. More than half of the high schools in California served by UC SAPEP programs are in the five lowest Academic Performance Index (API) deciles. SAPEP tends to serve schools wherein the majority of students qualify to receive free or reduced-price meals. More precisely, 73% of the high schools served by SAPEP's three largest high school programs in 2015-16 were those in which more than 60% of all students are eligible for free or reduced-price meals. By contrast, 57% of all California public high schools in 2015-16 enrolled students in which more than 60% were eligible for free or reduced-price meals.

The impact of the University's SAPEP programs on students from underrepresented minority groups is

[1] The most recent SAPEP data are for the 2015-16 year unless otherwise noted.

significant. While enrollment at UC is not the specific goal of UC's academic preparation programs, the ability of students to compete successfully for UC admission is a strong indicator of increased access to postsecondary opportunities. At the same time, these programs increase the diversity of the University. In fall 2016, 19.5% of African-Americans and 12.2% of Chicano/a and Latino/a students in the incoming freshman class at UC campuses were 12th-grade participants in UC's student academic preparation programs in 2015-16.

Budget constraints notwithstanding, UC has created innovative ways to help generate systemic changes in California's educational system through long-term partnerships with K-12 schools, businesses, community-based organizations, and parents and families. For example, the University's K-20 Regional Intersegmental Alliances align SAPEP programs with their local and regional K-12, community college, educational, community, and business partners. Activities and strategies vary by region depending on the needs and priorities of partner schools, and include direct student and family services, as well as academic enrichment and student academic and career advising; dissemination of research and best practices on teaching and learning; professional development and coaching in specific content for teachers; and collaboration with schools, districts, and community agencies on grant writing and resource development. Alliances design systemic strategies for improving academic achievement and college and career readiness for the state's underserved student populations.

The University collaborated with these partnerships to implement the Transcript Evaluation Service (TES), which tracks coursework progress and UC/CSU eligibility for individual students and entire schools. In addition, TES provides data for school administrators to diagnose course completion obstacles and improve UC/CSU course requirement completion on a school-wide basis. In 2014, TES was recognized by Achieve[2] for the role it plays in diagnostic assessment of where students are falling short of the courses needed for admission to the state's university systems.[3] A TES implementation study conducted by MPR Associates, Inc. presented evidence of the potential efficacy of TES, particularly for those schools

STUDENT ACADEMIC PREPARATION PROGRAMS WERE DEVELOPED OVER 40 YEARS AGO

As early as 1872, then-University President Daniel Coit Gilman called on the University to collaborate with schools in enhancing student preparation for a college education so that the "work of the University shall clearly forward the welfare of the state, of the whole body politic."

The current generation of student academic preparation programs took shape in the 1960s, when the civil rights movement drew attention to issues of access to the University. During this period when there were no fiscal constraints on enrollments, the Regents addressed access issues primarily through aggressive and innovative admissions policies.

In the 1970s, the University began providing underrepresented students with academic assistance and information to help them meet University admission standards. The Legislature passed the Meade Bill in 1975 (AB 2412), marking the first time that State resources were devoted to increasing the number and persistence of eligible minority students. With it was born the concept of developing a pipeline of academic preparation programs beginning with students in the seventh grade and continuing through their college careers. Academic preparation programs expanded gradually during the 1980s and early 1990s.

In July 1995 the Regents adopted Resolution SP-1, which eliminated consideration of race, ethnicity, and gender in UC admissions. At the same time, the Board called on the President to appoint the Outreach Task Force (OTF) to identify ways in which outreach programs could help to ensure that the University remain accessible to students from educationally disadvantaged backgrounds. Coupled with the passage by California voters of Proposition 209 in Fall 1996, which essentially placed the tenets of SP-1 in the State's Constitution, these events elevated academic preparation programs to become the University's most critical tool for promoting access to the University for educationally disadvantaged students in California.

[2] Founded in 1996 by a bipartisan group of governors and business leaders, Achieve is an independent, nonpartisan, nonprofit education reform organization that works with states to raise academic standards and graduation requirements, improve assessments, and strengthen accountability. Achieve helped develop the Common Core State Standards.
[3] Achieve, January 2015, "Closing the Expectations Gap: 2014 Annual Report on the Alignment of State K-12 Policies and Practice with the Demands of College and Careers."

that implement TES consistently for three or more years. The report also found that UC application rates of graduates from TES schools increased over time. By year five, TES schools, on average, have experienced a 4.1% increase in graduates applying to UC compared to their base year.

Program Descriptions and Outcomes

In addition to partnerships with K-12 and community organizations, UC's portfolio of SAPEP programs raises college eligibility rates, increases transfer from community colleges to baccalaureate-degree granting institutions, and prepares undergraduates for graduate programs.[4]

College Access and Preparation. With a focus on academic advising and building college knowledge, the ***Early Academic Outreach Program (EAOP)***, UC's largest academic preparation program, helps disadvantaged students complete a rigorous college preparatory curriculum in high school, complete UC and CSU coursework and exam requirements, and apply for college and financial aid. EAOP provides academic enrichment, such as intensive workshops and summer courses; advising; test preparation; and information for parents such as how to apply for financial aid and college options in California. EAOP also supports schools by providing educators with valuable assistance in updating "a-g" course lists and submitting "a-g" courses for review, and explaining UC admissions and eligibility to teachers and counselors.

With a focus on science, technology, engineering and mathematics (STEM) and workforce preparation, the ***Mathematics, Engineering, Science Achievement (MESA)*** program helps middle and high school students excel in math and science so they can graduate from college with degrees in science, engineering, computer science, or other math-based fields. MESA offers classes during the school day that allow advisors to work with students on academics and MESA activities. MESA"s academic development curriculum included math and science coursework that is 'a-g' approved and based on California Math and Science Standards. MESA also offers

SAPEP FUNDING SINCE 1997-98

In 1997-98, after the adoption of SP-1 and Proposition 209, the Legislature considered the University's academic preparation programs to be an effective means by which to increase access to college for educationally disadvantaged students and promote diversity at UC. The University's budget for student academic preparation programs grew from $18.1 million in State and University funds in 1997-98 to a peak of $85 million in 2000-01.

Due to the State's fiscal crisis in the early 2000s, the SAPEP budget was reduced by $55.7 million over several years, including a 56% reduction in 2003-04, bringing the total budget to $29.3 million in 2005-06.

In 2006-07, a $2 million augmentation to expand community college transfer programs brought the SAPEP budget to $31.3 million.

The Governor's proposed budget for 2009-10 originally slated SAPEP programs for elimination, but the Legislature converted the cut to an undesignated reduction. As permitted by the 2009-10 Budget Act, campuses were instructed to limit cuts to any program within the portfolio to no more than 10%, which was only half the percentage cut to the University's State funds.

For 2010-11, the Budget Act called for the University to maintain funding for SAPEP programs at 2009-10 levels.

In 2011-12, the University experienced a 21.3% reduction in State funding. Budget Act language authorized reductions of no more than that percentage in SAPEP programs; however, the SAPEP portfolio experienced an overall budget reduction of only 17%.

Consistent with Budget Act language, the programs in the SAPEP portfolio were not eligible for budget reductions in 2012-13 as the Governor's revenue-enhancing initiative passed in November 2012 and no further cuts occurred to UC's budget. These programs also have not been eligible for budget reductions since that time; campuses have been asked not to reduce funding for these programs. The SAPEP budget currently is $24.6 million in State and University funds.

SAPEP programs use State resources efficiently. The cost per student of most programs is substantially less than the cost per student of comparable federally funded programs. In 2015-16, programs leveraged the State and University investment of $24.6 million by securing an additional $39.2 million in support of K-20 efforts.

[4] Detailed descriptions of each SAPEP program can be found in the most recent SAPEP legislative report, available at http://www.ucop.edu/diversity-engagement/_files/sapep-full-report-rscpsb.pdf.

individualized academic planning, tutoring, math workshops, study groups, and career exploration services. Parent involvement workshops and events help parents learn how to become effective advocates for their children's academic success.

With a focus on literacy development, ***The Puente Project*** prepares middle and high school students – many of whom are English language learners – for college through rigorous academic instruction in writing and literature, intensive college-preparatory counseling, and mentoring from successful members of the community. Students in the program study with the same Puente-trained English teacher for ninth and tenth grades in a college-preparatory English class, work closely with a Puente-trained counselor to prepare an academic plan and stay focused on their goals, participate regularly in community involvement activities, and attend field trips to college campuses.

Other programs promoting college access and preparation include ***ArtsBridge***, ***Student-Initiated Programs***, ***UC Scout***, ***University-Community Engagement (UCE)***, and ***UC Links***.

UC's college access and preparation programs have been recognized nationally as models of best practice. Specific program achievements include the following:

- Increased college eligibility: participants are more likely to complete the 'a-g' courses required for UC/CSU eligibility and to take the SAT or ACT than non-participants. In 2015-16, 80% of 12th-grade participants in EAOP, MESA, and Puente had completed 'a-g' coursework (compared to 43% of all California public high school graduates), and 68% took the SAT or ACT (compared to 52% of non-participants at the same schools); and
- Increased college attendance: class of 2016 high school seniors from UC's three largest college access and preparation programs enrolled at California public colleges at higher rates than their peers in fall 2016: EAOP (62%), MESA (69%), and Puente (70%). An estimated 41% of all California public high school graduates enrolled at California public colleges.
- Increased Community College Transfer: SAPEP programs also promote transfer from community college to baccalaureate-granting institutions.

Community College Articulation Agreements are agreements between individual California community colleges and individual UC campuses that define how specific community college courses can be used to satisfy subject matter requirements at UC.

ASSIST, California's official statewide repository for college course articulation and transfer information, provides counselors and students with detailed course transfer and articulation information to streamline the transfer process.

The ***MESA Community College Program (MCCP)*** provides rigorous academic development for community college students who are pursuing transfer to four-year universities in majors that are calculus-based. All MCCP students are required to attend Academic Excellence Workshops, student-led supplemental instruction/study groups that emphasize the most challenging aspects of classes within the student's major. Additional services include individualized academic planning; college orientation for math-based majors; career exploration and professional development; and summer internships in business, industry, and academia.

Students enrolled in ***The Puente Community College Program*** take a demanding two-course English sequence, receive transfer requirement counseling, and meet regularly with a Puente-trained mentor from the professional community. Teachers and counselors receive training in innovative counseling and teaching methodologies for educationally disadvantaged students.

Community College Transfer Preparation (CCTP) Programs increase opportunities for California community college students to transfer to four-year institutions by providing comprehensive academic guidance and support for prospective transfers. Services include assistance with course selection, informational workshops on academic requirements for transfer admissions, and professional development and training for community college counselors and faculty. Students enrolled in these transfer programs are more likely to transfer to a baccalaureate-granting institution than other students.

Other CCTP program achievements include:

- In 2015-16, over 1.7 million website visitors used an online tool called ASSIST (Articulation System Stimulating Interinstitutional Student Transfer; see http://www.assist.org) to generate more than 20.8 million articulation reports in order to determine course

transferability between CCC, CSU, and UC systems. In addition, as of 2015-16, ASSIST tracks 101,632 CCC-UC articulation agreements by major,177,950 CCC-CSU agreements by major, 49,609 CCC courses that can be transferred by general credit to any UC campuses, and 21,721 Intersegmental General Education Transfer Curriculum approved CCC courses that can be transferred to any CSU or UC campus;

- UC continues to simplify the transfer process for prospective students and counselors by implementing tools like the online UC Transfer Admissions Planner (UC TAP) to help more than 265,000 CCC students stay on-track to transfer successfully;
- Of those MESA Community College Program participants who transferred to a four-year campus, 100% majored in a STEM field; and
- Puente students maintained enrollment continuity more often than all California Community College (CCC) students statewide. More than eight in ten, or 85% of Puente students, enrolled in three continuous terms compared with 73% of all CCC students statewide.

Graduate and Professional School Preparation. UC's SAPEP programs also prepare and encourage high-achieving undergraduates from educationally disadvantaged communities to pursue graduate and professional level training.

Leadership Excellence through Advanced Degrees Program (UC LEADS) places juniors and seniors who have experienced conditions that have adversely affected their advancement in their field of study in two-year intensive research experiences with faculty mentors. ***Summer Research Internship Programs (SRIP)*** also provide intensive research experiences. ***UC Law Fellows*** and ***Post-baccalaureate Medical School Programs*** provide preparation for graduate study through academic skills building, test preparation, and mentoring.

Achievements of these programs include:

- Almost two-thirds (63%) of graduate and professional school academic preparation program participants enroll in graduate or professional school; and
- UC's post-baccalaureate premedical programs increase the number of students from disadvantaged backgrounds who enroll in medical school.

CALIFORNIA SUBJECT MATTER PROJECT

The California Subject Matter Project (CSMP) is a statewide network of nine subject-specific professional learning projects that provide rigorous training programs to enhance learning for all students. CSMP engages K-12 educators with university faculty in all disciplines from UC, CSU, and independent higher education institutions to collaboratively design and deliver intensive institutes for education professionals that promote teachers' understanding of K-12 content and instructional strategies. CSMP encompasses the course content represented in California's K-12 standards and frameworks, and covers all of the academic disciplines required to meet college entrance ("a-g") requirements, including arts, history-social science, international studies, mathematics, physical education-health, reading and literature, science, world languages, and writing. The network reaches teachers and students across California through more than 80 regional sites located at university and college campuses statewide.

During 2016, CSMP provided more than 1,800 professional learning programs to nearly 34,000 teachers and school administrators from over 8,000 schools, approximately half of which were low-performing (based on the state's Academic Performance Index). To understand the impact of its professional learning on teachers and their students, CSMP recently administered participant surveys to educators attending professional development programs that are characteristic of CSMP – high-quality, intensive, and incorporating follow-up sessions. Results indicated the majority of participants (80%) ranked CSMP as better than other professional development activities in which they have participated, which is consistent with the findings of previous surveys by an external evaluator (SRI International). In addition, educators anticipate that participating in CSMP professional development will greatly enhance their strategies to deliver instruction (70%), improve their students' level of engagement (59%), and increase their professional collaboration with other teachers (53%).

State funding has remained at $5 million since 2003-04 and CSMP receives an additional $3.56 million in federal funding. The federal funds figure includes an 18% decrease that the California Department of Education implemented in 2011-12. CSMP leverages State and federal funding with foundation grants and district contracts to support the professional development programs. CSMP was originally authorized in 1998 and was reauthorized in

2002, 2007, and again in 2011. The 2011 bill (SB 612) extended authorization to June 30, 2017 and incorporates all nine projects into the legislation. In 2016, a statute was enacted that eliminated the June 30, 2017 sunset date noted in SB 612.

COSMOS

The California State Summer School for Mathematics and Science (COSMOS) provides an intensive academic experience for students who wish to pursue advanced mathematics and the sciences and prepare for their education in these areas. COSMOS is a four-week-long residential academic program for top California high school students in mathematics and science. COSMOS course clusters address topics not traditionally taught in high schools such as astronomy, aerospace engineering, biomedical sciences, computer science, wetlands ecology, ocean science, robotics, and game theory. The program takes place each summer on the Davis, Irvine, Santa Cruz, and San Diego campuses. Cluster sizes vary from 18-25 students and the student to academic staff ratio is typically 5:1. In 2017, 745 students, drawn from an applicant pool of over 3,400 students, were selected to attend COSMOS.

In 2010-11, COSMOS received $1.9 million in State funds, a 10% reduction from State support in 2007-08. Consistent with Budget Act language, the University reduced State support for COSMOS in 2011-12 to $1.7 million, also a 10% reduction compared to the prior year. Several years ago, the Governor eliminated provisional language associated with several programs, including COSMOS, which had specified the funding level expected by the State for the budget year. While the Governor's action provides UC with more flexibility in terms of setting funding levels for this program, UC is not proposing any funding reductions for this program, which remains funded at $1.7 million. The California Education Code stipulates that the State fund at least 50%, but not more than 75%, of the program's actual costs; funds are also provided by participants with the ability to pay and from private sources. AB 1663 (2012) amended the Education Code to set the program's tuition level for California residents at $2,810, and AB 616 (2017) authorized the current fee provisions – which allows for annual increases of up to 5%of – the COSMOS program until January 1, 2023. For summer 2017, the tuition level for California residents attending COSMOS was $3,570.

COOPERATIVE EXTENSION

The Division of Agriculture and Natural Resources (ANR) is a statewide network of UC researchers and educators dedicated to the creation, development, and application of knowledge in agricultural, natural, and related human resources. ANR's mission is to maintain and enhance connections that fully engage UC with the people of California and achieve innovation in fundamental and applied research and education that supports sustainable, safe, nutritious food production and delivery systems; economic success in a global economy; a sustainable, healthy, productive environment; and science literacy and youth development programs. ANR is unique in its three-way partnership with federal, state, and county governments to provide local and statewide research and extension programs that address critical issues of California. ANR's research and public service programs are delivered through two organizational units: Cooperative Extension (CE) and the Agricultural Experiment Station (AES, described in more detail in the *Research* chapter of this document). While both conduct research, CE is also ANR's outreach arm, extending UC research to communities across the state.

CE links educational and research activities to the resources of the U.S. Department of Agriculture (USDA), land grant universities, and county administrative units in order to solve local issues in agriculture, natural resources, and human development. Over 280 CE academics (specialists and advisors) partner with AES faculty, state and federal agencies, and local clientele. CE specialists (located in ANR's four colleges/schools on the Berkeley, Davis, Merced, and Riverside campuses, as well as at other ANR locations) conduct research, develop new technologies, transmit results to communities statewide, and serve as a campus link for county-based CE advisors. Academic CE advisors are situated in local communities to conduct applied research and translate and test research findings for solutions to local problems. This statewide network of local CE sites is often the face of UC to Californians who may never set foot on a UC campus. CE advisors work with teams of staff and volunteers to deliver

applied research and science-based education programs in the areas of agriculture, natural resources, nutrition, and related human resources. Collaboration with citizen volunteers is an integral part of educational efforts in the 4-H Youth Development, California Naturalist, Master Gardener, and Master Food Preserver programs. CE advisors provide local residents and industry groups with science-based information through workshops, demonstrations, field days, classes, print and other media, and websites.

ANR statewide programs, such as Integrated Pest Management; Youth, Family, and Communities; and the Agriculture Issues Center, engage ANR academics and faculty from all UC campuses and leverage multicampus resources to work on complex issues that require multi-disciplinary approaches. In addition, there are nine research and extension centers (RECs), located in a variety of ecosystems across the state.

The CE base budget is composed of federal land grant, State, county, systemwide assessment, and other funds. Through its partnerships and collaborations, CE generates additional extramural grant funding, further increasing its ability to address local and statewide issues.

ANR continues to invest its resources to reduce administrative overhead while focusing on ANR programs and people in the future through its 2025 Strategic Vision. ANR focuses resources, including existing competitive grant funds and endowment income (as appropriate), to support five strategic initiatives: Sustainable Food Systems; Endemic and Invasive Pests and Diseases; Sustainable Natural Ecosystems; Healthy Families and Communities; and Water Quality, Quantity, and Security. ANR also explores opportunities for private-public partnerships to support CE programs, including funding of new, high-priority positions.

The following are just a few examples of CE public service projects that address challenges facing California:

Healthy Food Systems. CE scientists work with California growers to ensure they have the information they need to protect and maintain healthy crops. In 2011, the European Grapevine moth, the most harmful pest to grapes in Europe and the Middle East, was found in ten California counties. CE scientists provided weekly updates to grape growers on research-tested, effective management strategies that used organic and low-toxicity insecticides. By implementing the recommended strategies, producers were able to preserve the natural insect predators to the moths, and continue to grow competitive crops while under quarantine. In 2015 and 2016, there were zero moths detected and, as a result, the quarantine on the ten counties has been lifted.

CE looks forward to ultimately having similar success with the currently incurable Huanglongbing (HLB) disease that affects citrus trees and is spread by the invasive Asian citrus psyllid. In 2016, a multi-faceted CE program was used to reach nurseries, citrus growers, and home gardeners to educate them about the identification of HLB and management strategies for the psyllid.

Healthy Environments. CE advisors and specialists identify solutions for challenges that arise when wildlife intersects with working landscapes and people. Wild pigs roam throughout California's rural rangelands and can destroy plants and grasses where sheep and cattle graze. As they root around in the soil with their tusks, they increase soil erosion and invasive species colonization. A team of CE scientists created a mobile application for rangeland managers to enter data on feral pig damage. Scientists and land managers in California and Hawaii are using data from the application to estimate the economic and environmental impacts of feral pig damage over time, and make recommendations to reduce damage.

Another mobile application created by CE advisors is being used in urban settings to track interactions between people, pets, and coyotes. By reporting encounters with coyotes in their neighborhoods, residents are sharing information to help neighbors keep their pets and children safe, and to help city officials understand where problems are occurring.

Healthy Communities. UC ANR is able to extensively reach Californians and address priority issues affecting families and communities through its statewide programs. Specifically, ANR manages the innovative, research-based California 4-H Youth Development Program. In 2016, close to 14,000 dedicated adult 4-H volunteers provided over one million volunteer hours of service, which is the equivalent of over 500 full-time positions. Volunteers engaged youth

(ages 5 to 19) in every California county. The program serves as a driving force to position Californians as leaders because youth who participate in 4-H programs are 25% more likely to contribute to their communities. In one local example, 4-H teens in Contra Costa County participated in a culinary program that included healthy living, leadership, and service learning programming. The teens then taught a six-lesson nutrition program to third-graders at the neighboring elementary school. In San Benito County, a nine-year-old 4-H participant coordinated local residents, 4-H members, and parents to harvest unpicked fruit from homeowners' trees and donate it to the local food bank.

Through the statewide Master Gardener Program, ANR academics train local community members with research-based information on landscape management and horticulture, including reduced pesticide use and water conservation practices. In 2016, Master Gardeners logged over 85,000 hours of continuing education credits in order to relay best practices based on UC research. With close to 6,300 volunteers on its roster, the Master Gardener Program contributed over 418,000 hours of local volunteer services in 2016, the equivalent of almost 200 full-time positions. In 2016, the city of Irvine requested that CE advisors develop an integrated pest management plan for the city. The plan applies to all 6,700 acres of the city's parks, open spaces, and streetscapes. Since its implementation, the amount of synthetic pesticide use by the city has been reduced.

Healthy Californians. ANR is actively engaged in nutrition education and obesity prevention. CE advisors developed a curriculum that successfully improved student nutrition knowledge and is being evaluated for use as a statewide program. CE advisors and specialists also collaborated on a three-year obesity intervention study of parents and children of Mexican heritage in rural communities, which slowed weight gain in children.

On a statewide level, ANR implements two main nutrition education programs. The UC Expanded Food and Nutrition Education Program (EFNEP) provides nutrition education to limited-resource families in 24 California counties. The UC CalFresh Program focuses on youth, utilizing schools as the hub for community engagement. In 2016, the program was delivered in 409 K-12 schools.

CHARLES R. DREW UNIVERSITY OF MEDICINE AND SCIENCE

The Charles R. Drew University of Medicine and Science (CDU), a private, nonprofit corporation with its own Board of Trustees, conducts educational and research programs in South Central Los Angeles. Since 1973, the State has appropriated funds to UC to support a medical student education program operated by the Los Angeles campus in conjunction with CDU. State General Funds are provided to CDU under two contracts administered by the University. One contract provides State support for medical education; the other a separate public service program that funds activities in the Watts-Willowbrook community.

Historically, CDU received State funds through the University's budget for the training of 48 medical students (including 24 third-year and 24 fourth-year students) and 170 medical residents. The historical activities in the joint CDU/UCLA instructional program are described in an affiliation agreement with the David Geffen School of Medicine at the Los Angeles campus for student clerkships. Students participating in the joint medical education program earn a Doctor of Medicine (MD) degree, which is granted by the David Geffen School of Medicine.

In 2008, CDU expanded its medical student enrollment by four students (per class) as part of the UC Program in Medical Education (PRIME) initiative. The Los Angeles campus' PRIME program is designed to train physician leaders to be experts and advocates for improved healthcare delivery systems in disadvantaged communities. In 2017-18, 112 medical students are enrolled across a four-year curriculum in the joint UCLA-CDU program. In 2017, 62% of UCLA-CDU graduates matched in primary care residency programs, with 43% going into Family Medicine.

In the middle part of the last decade, serious concerns involving patient care activities occurred at Los Angeles County's King/Drew Medical Center (KDMC), the primary teaching hospital for CDU. Given the seriousness of these matters, the Los Angeles County Board of Supervisors, which has administrative and fiscal responsibility for the hospital, closed KDMC in 2007. As a result of the closure of the hospital, CDU voluntarily closed its residency programs.

Since that time, the University has worked with state, county, and other local officials to develop a plan for opening the hospital under new governance. The newly named Martin Luther King Jr. Community Hospital opened July 7, 2015. CDU will be re-establishing residency training with the 2018 Residency Match. CDU received initial accreditation from the Accrediting Council of Graduate Medical Education (ACGME) in July 2016 and specific programmatic accreditation for Match participation in Psychiatry in April 2017. The Family Medicine residency program application was submitted to the ACGME in summer 2017 for approval in January 2018. Other programs under consideration include Primary Care Internal Medicine, General Surgery, Physical Medicine and Rehabilitation, and Orthopedic Surgery.

Consistent with language in the Budget Act, UC reduced support for CDU by 5% in 2011-12. Funding for CDU instructional and public service programs currently is $8.3 million in State General Funds and $475,000 in matching funds. The University provides additional support from medical student Professional Degree Supplemental Tuition revenue and other University funds to support CDU.

Academic Support – Libraries

Individually and collectively, the University of California libraries provide access to the world's knowledge for the UC campuses and the communities they serve. They directly support UC's missions of teaching, research, and public service. The intellectual capital of UC libraries – their acclaimed research collections, innovative services, user-friendly facilities, and highly trained staff - constitutes an unparalleled resource for UC, as well as for all Californians.

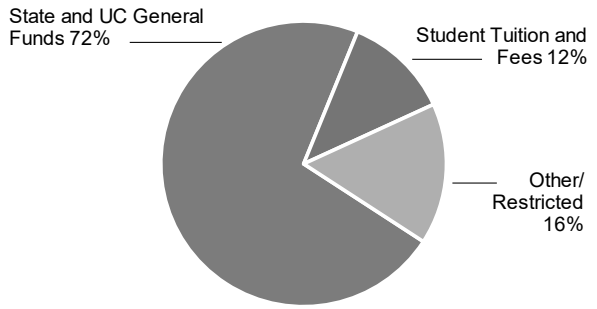
Rapid advances in the development and use of new technologies to create, publish, share, store, search for, and deliver information have transformed libraries, allowing campuses to provide access to far more information than they must physically possess and store. UC's growing digital information services and collections are becoming more extensive and accessible to not only the scholarly community, but to all who seek such services and collections worldwide.

As the digital transition continues, the library as a rich scholarly environment becomes an even more vital resource. Campus libraries serve as central intellectual and social hubs for individual research and study, collaborative work, teaching and learning, and cultural events and exhibits. Scholars rely on the distinctive collections available at UC libraries, while students value around-the-clock online assistance from academic librarians, access to vast information resources, and the opportunity to dive deeply into their fields with their peers.

The UC library system includes more than 100 libraries at the ten campuses, the California Digital Library, and two regional library facilities. UC's library system has the second largest number of volumes held in the United States; with more than 39.5 million print volumes, the collection is surpassed only by the Library of Congress.

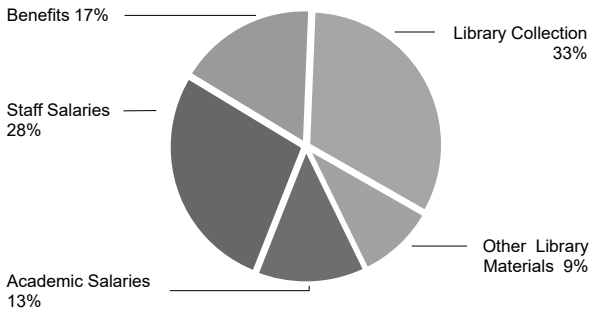
In 2016-17, the economic value of the physical collection was estimated at $1 billion and the special collections at $460 million, or 5% of UC's net capital assets. Nearly 2 million items were loaned by UC libraries in 2016-17, including over 150,000 intercampus library loans and copies. Use of the libraries' digital collections continues to expand, as more materials are available primarily or solely online. In 2016, more than 37 million journal articles were downloaded within UC.

Display IX-1: 2016-17 Library Expenditures by Fund Source (Total: $293 Million)



Over 84% of the libraries' budget is derived from core funds. Endowment earnings, private gifts, and other sources provide additional support.

Display IX-2: 2016-17 Library Expenditures by Category (Total: $293 Million)



Over 42% of the libraries' budget provides for the purchase, preparation and use of library materials in a variety of formats (print, digital, multimedia, and objects). As in other functions of the University, salaries and benefits are the largest collective expenditure.

THE LIBRARY BUDGET

Expenditures for the libraries totaled $293 million in 2016-17. Over 84% of the library budget is derived from core funds (State support, UC General Funds, and student tuition and fee revenue). Significant restricted funding is provided from endowment earnings and private gifts and grants. As in other areas of the University, the libraries' greatest expenses are salaries and benefits for more than

Display IX-3: UC Libraries At-A-Glance, 2016-17

Number of Libraries	100+
Library Holdings	
Print volumes	39,500,000
Audio, video, and visual materials	20,200,000
Maps	2,000,000
Microcopy and microfilm	26,000,000
Average e-books on each campus	1,100,000
Digitized UC volumes in HathiTrust	3,970,000
Electronic-journals licensed collectively	72,000
Digitized items in campus collections	31,000,000
CDL/Shared print collection	500,000
Library Use	
Digital articles downloaded	37,100,000
Total library loans	1,580,000
Intercampus loans	150,000
Regional facility loans	107,000
Reference inquiries (total)	200,000
Virtual reference inquiries	60,000
Participants in instructional programs	154,000

Note: Data reported by all 10 campuses and the CDL. Numbers rounded.

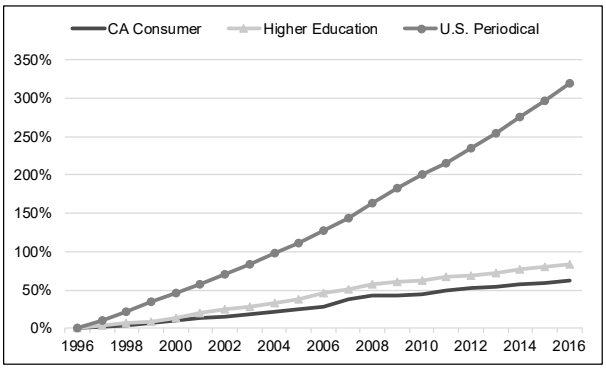
2,000 employees, including professional librarians, IT professionals, and support staff. Compensation and benefits represented 58% of library expenditures in 2016-17. Library materials, which include books, subscriptions, and licensing of digital materials, made up 33% of expenditures.

As the cost of library materials continues to outpace inflation, campus libraries face increasing budgetary pressures. Expansion in academic and research programs continues to increase demand for library collection growth in all formats, and students continue to demand long hours and extended access to library facilities that provide technologically well-equipped learning environments.

In the past, the State provided substantial support for UC's strategy to promote systemwide library development. Over the last 20 years, however, the State has been unable to provide sufficient funding to confront persistent price increases for books, journals, and databases, which consistently outpace inflation, as shown in Display IX-4.

To address past funding shortfalls for library collections and services, the libraries identified and developed strategies to reduce costs and promote more efficient use of library resources. As shown in Display IX-5, these strategies include reduced purchasing costs through interlibrary lending, lower capital costs resulting from use of shared off-site facilities, and savings from systemwide digital collections development and shared journal subscriptions.

Display IX-4: Consumer, Higher Education, and Periodical Price Increases



Over the last 20 years, the cost of periodicals has risen more than 320%, while the consumer price index has risen only 63% during the same period. This cost increase has not changed in the digital environment.

Through the California Digital Library, the UC libraries have negotiated dozens of favorable contracts with publishers and vendors, resulting in millions of dollars in savings for digital serial licenses and other digital materials. In addition, the budget framework announced by Governor Brown as part of the May Revisions to the 2015-16 Budget marked a new chapter of renewed investment in UC, providing financial stability and a solid foundation upon which to plan.

THE LIBRARY PROGRAM

The University libraries employ a systemwide strategy that emphasizes campus collaboration. In 2010, in response to funding shortfalls associated with the Great Recession, Provost Larry Pitts requested that the Systemwide Library and Scholarly Information Advisory Committee convene a Task Force to recommend strategies to mitigate cuts.

The Task Force released its final report on December 1, 2011, with recommendations for a phased strategy for addressing budget reductions facing the UC libraries. Shared services, developed over 35 years, resulted in annual savings and cost avoidances of approximately $114 million. Savings as a result of library collaboration have since risen to $120.9 million.

Display IX-5: Estimated Annual Savings from Library Innovations and Efficiencies (Dollars in Millions)	
Resource Sharing	$28.2
Regional Libraries Facilities	$24.3
California Digital Library	$68.4
Total	$120.9[1]

The Council of University Librarians (CoUL) develops shared strategies to optimize the expertise of the UC libraries and plan for the future. The most recent planning document, "University of California Libraries, Systemwide Annual Plan and Priorities, FY 2017-2018," underscores the goal of the University to enrich the systemwide library collection. Print, digital, data, and archival collections are fundamental to the University's teaching, research, patient care, and public service programs. Maximizing discovery and access to a broad array of scholarly resources in support of these programs is one of the University's top priorities.

UC libraries are expediting the transition to a largely digital environment by creating high-quality collections in digital formats while continuing to acquire traditional formats. This systemwide strategy results in millions of dollars in avoided costs annually. Through their campus libraries, UC faculty and students enjoy faster and more convenient access to information in a wider variety of formats, even in the face of rising costs and constrained budgets. The UC libraries take advantage of their combined strengths to develop programs that decrease costs and improve efficiency while increasing access to the distinct library collections offered at each UC campus.

UC's Regional Library Facilities (RLFs) in Richmond and Los Angeles house nearly 14 million volumes of enduring research value deposited by campus libraries. The RLFs also house the UC Shared Print Collection, which contains single print copies of material widely available in electronic format, for systemwide use or archival purposes. Shared print collections enable campuses to discard duplicate print copies, secure in the knowledge that there is a copy available in the central collection.

In order to achieve even further economies of scale, the UC libraries are leading the **Western Regional Storage Trust (WEST)** program to build a shared print journal archive with other institutions in the western region of the United States. The program helps libraries at UC and beyond make more efficient use of limited storage space.

Current and Future Storage Challenges. Despite the enormous success of the libraries in consolidating and sharing physical collections at the Regional Library Facilities (RLFs) and beyond, as well as the trend toward increasingly digital collecting, space for library collections has reached a critical juncture. Current library buildings both on campuses and at the two systemwide shared facilities are at or nearing capacity, yet the libraries continue to acquire many materials in print in order to fulfill their research mission. The records that document and preserve our cultural heritage come in a wide variety of physical formats, while many foreign-language materials are not available digitally. In addition, many faculty and students prefer print books for long-form reading. Short and medium term solutions to develop more systemwide space have not yielded enough capacity for continued growth beyond 2019. To meet their shortage challenges, the libraries have developed a proposal for a 10-year systemwide remote shelving expansion. The recommended solution is to construct a fourth module at the Northern RLF. This will ensure that the collections of the UC libraries can continue to support the needs of students and faculty, enabling collection growth and preservation, and improved campus space utilization. The proposal has been approved by the President, faculty advisory committees and by the leadership of all ten campuses, and has been submitted to the UC Regents for approval. This significant capital investment is needed to expand the libraries' remote storage capacity and preserve UC's library collections for successive generations. This will also help to alleviate campus space pressures more generally, for example by

[1] Cost savings reported in the 2011-12 Budget for Current Operations at the time of the Task Force final report released December 1, 2011.

enabling more on-campus shelving space to be reassigned for student study and other higher-value uses.

Discovery and Delivery Services for print and digital library materials provide faculty, students, and staff with seamless access to the UC libraries' extensive research collections. These core services include the MELVYL catalog for discovery of materials at UC and worldwide, direct linking from citations to online journal articles via UC-eLinks, and the Request Service to facilitate intercampus lending and document delivery. The Request Service, developed by the UC libraries, sends interlibrary loan requests directly to lending institutions, saving time and effort by delivering journal articles online, retaining users' profile information, and providing citation information.

UC's Resource Sharing Program includes overnight courier services, interlibrary lending, and facilities for immediate scanning and electronic delivery of articles.

The **California Digital Library (CDL)** supports the development of systemwide digital collections and facilitates the sharing of materials and services used by libraries across the UC system. Through systemwide co-investments with the campus libraries, the CDL makes available approximately 72,000 online journals to students, faculty, researchers, and staff from all UC campuses. The CDL also works in partnership with campuses to share the collections in UC's libraries, museums, and cultural heritage organizations, and to provide systems and tools for managing the university's research outputs. Key services include the Online Archive of California, which features 46,000 online collection guides from 280 libraries, archives, and museums across the state; a data curation center; eScholarship, a platform for publishing open access scholarly materials; and Calisphere, a compendium of freely accessible online collections from libraries, museums, and archives throughout California originally designed for use in California K-20 education. A redesign of the Calisphere service in 2015 more than doubled the size of the collection to over 800,000 digital objects.

Since 2006, more than 3.7 million books from the UC libraries have been scanned through participation in mass digitization partnerships with Google and the Internet Archive. These projects expand the libraries' ability to provide faculty, students, and the general public with access to collections, as well as help preserve the content. Full text of public domain works, including historic and special collections, is freely available for browsing, reading, downloading, and research uses such as text-mining.

The UC libraries are founding partners in the **HathiTrust**, a collaboration of more than 100 top-tier research universities to archive and share their digital collections. Through the HathiTrust, UC gains access to millions of digitized materials in the public domain, and benefits from cost-effective and reliable storage and preservation of its own materials. UC is a hub for the Digital Public Library of America, a platform that brings together the diverse digital collections of libraries, archives, and museums from all over the country. UC's libraries are founding members of the Digital Preservation Network, a federation of higher education repositories that uses replication to ensure the long term preservation of digital content.

The libraries and the CDL are helping to maintain and preserve research data by leveraging expertise and resources across UC. Systemwide tools include: the Merritt digital repository for managing, sharing, archiving, and preserving digital content; the Data Management Planning Tool to help researchers create effective data management plans required by funding agencies; and Dash, a self-service tool for researchers to describe, upload, and share data. Campus libraries are working individually and collectively, and partnering with Google, HathiTrust, and the Digital Preservation Network to provide premier management and preservation of scholarly data.

The UC libraries are also leaders in exploring new approaches to scholarly communication and have provided crucial implementation support for the UC Open Access Policy. This policy, which was passed by the Academic Senate on July 24, 2013, addresses copyright and publication issues for scholarly articles published by Academic Senate members via open access repositories. The policy collectively reserves a non-exclusive copyright license that preempts any transfer of copyright to a publisher. Authors commit to make their work available in a free and open digital repository independently of the published version in a scholarly journal. Authors can also opt out or delay access. Since the adoption of the policy,

UC research publications, available through CDL's eScholarship service, have been accessed in 219 countries worldwide. The Presidential Policy on Open Access, which was issued on October 23rd, 2015, covers all non-academic Senate employees of the UC System who author scholarly articles, previously not covered by the 2013 Academic Senate policy. The UC libraries continue to advocate for open access more broadly through international projects such as OA2020 (Open Access 2020), and through exploration of multiple strategies to advance the large-scale transition of scholarly materials to open access.

All of the UC libraries' activities support the mission of UC, promoting the University as a leading research engine in the growth of California, the advancement of knowledge, and the education of California's students.

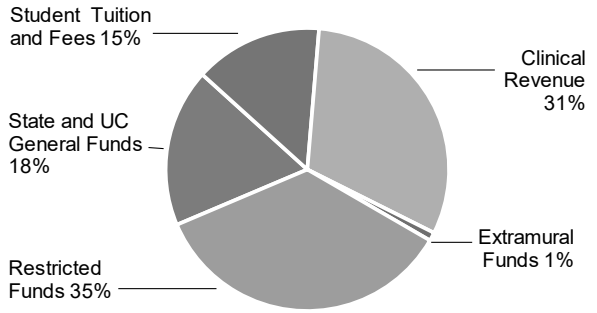
Academic Support

Academic support includes various clinical and other support activities that are operated and administered in conjunction with schools and departments. These activities support the University's teaching, research, and public service missions. The University's clinics, the largest of these activities, are largely self-supporting through patient fees.

Expenditures for academic support totaled $1.8 billion in 2016-17. In addition, other non-clinical activities provide academic support to campus programs, experiences for students, and valuable community services. Their financial support is derived from a combination of State funds, student or other fees, contracts and grants, and other revenues.

The State's past fiscal crises have resulted in significant reductions throughout the University's budget. Academic and institutional support budgets were targeted by the State for specific cuts of $36.5 million in 2003-04 and $45.4 million in 2004-05. Additional cuts occurred to these programs in subsequent years during periods of challenging economic circumstances that, in turn, led to further reductions in State General Fund support for the University's operating budget.

Display X-1: 2016-17 Academic Support Expenditures by Fund Source (Total: $1.8 Billion)



Expenditures totaled $1.8 billion in 2016-17. Clinics and other services are largely self-supporting.

UNIVERSITY CLINICS

Occupational and Environmental Health Centers

The northern (Berkeley, Davis, and San Francisco) and southern (Irvine and Los Angeles) Centers for Occupational and Environmental Health (COEH) were created in 1979 as a joint project of the California Department of Industrial Relations and UC. The centers serve Californians through programs and partnerships designed to deepen understanding and awareness of occupational and environmental hazards and to prevent disease, fatalities, and injuries in the workplace and the community. Each center serves as the focal point for occupational health-related activities on the campuses in its geographical area, thereby strengthening the University's programs of teaching, research, and public service in these fields.

Community Dental Clinics

The on-campus and community dental clinics at Los Angeles and San Francisco serve primarily as teaching laboratories in which graduate professional students pursue organized clinical curricula under the supervision of dental school faculty. The clinics provide a spectrum of teaching cases that are generally not available in the on-campus clinics, thus enhancing the required training in general and pediatric dentistry. While providing valuable clinical experience for students, the clinics also serve to meet the dental health needs of thousands of low-income patients, many of whom would not otherwise receive dental care.

Optometry Clinic

The optometry clinic at Berkeley serves primarily as a clinical teaching laboratory for the School of Optometry, while providing a complete array of visual health care services for patients from throughout the region. At the clinic, optometry faculty supervise students in the clinical aspects of the prevention, diagnosis, and remediation of visual problems. In addition, students receive clinical experience at various Bay Area community health centers, which exposes them to a broad range of cases and provides a much-needed public service.

Veterinary Clinics

The veterinary medicine clinical teaching facilities at Davis and in the San Joaquin Valley, and the satellite site in San Diego, are specialized teaching hospitals and clinics that support the UC Davis School of Veterinary Medicine. In these facilities, faculty train students enrolled in veterinary medicine in the clinical aspects of diagnosis, treatment, prevention, and control of diseases in animals.

Neuropsychiatric Institutes

UC's two neuropsychiatric institutes, the Semel Institute for Neuroscience and Human Behavior at the Los Angeles campus and the Langley Porter Neuropsychiatric Institute at the San Francisco campus, are among the state's principal resources for the education and training of psychiatric residents and other mental health professionals, and for the provision of mental health services. The primary missions of the institutes are to treat patients with diseases of the nervous system and to strive for excellence in the development of approaches to problems associated with developmental, behavioral, psychological, and neurological disorders.

OTHER ACADEMIC SUPPORT PROGRAMS

In addition to the clinics, UC operates a wide variety of other programs that are administered with schools and departments and enhance the University's teaching, research, and service activities. Some examples are described below.

Laboratory School

The Lab School at the Los Angeles campus serves as a laboratory for experimentation, research, and teacher professional development in the field of education. The self-supporting school educates pre-K-6 children and contributes to the advancement of education through research efforts and application of results.

Vivaria and Herbaria

Each campus operates vivaria and herbaria, which are centralized facilities for the ordering, receiving, and care of all animals and plants essential to instruction and research.

Museums and Galleries

The University operates many museums and galleries. These cultural resources are open to children and adults throughout the state and are largely self-supporting, generating revenue through ticket sales. Many of UC's museum and gallery holdings are also available to UC faculty and students conducting research.

Teaching Hospitals

The University operates academic medical centers at the Davis, Irvine, Los Angeles, San Diego, and San Francisco campuses. A critical mission of the medical centers is to support the clinical teaching programs of the University's 18 health professional schools and 12 hospitals, collectively referred to as UC Health.

UCSF and UCLA medical centers ranked fifth and seventh in the nation, respectively, and four out of five of UC's medical centers rank among California's top ten hospitals, according to U.S. News & World Report's 2017-18 survey. UC Davis, UCLA, and UCSF also ranked No. 1 in their metropolitan areas, while UC Irvine was ranked best in Orange County (sixth in the LA metro area).

Core clinical learning experiences in the health sciences take place in the UC medical centers and other UC-sponsored teaching programs. The University's academic medical centers serve as regional referral centers providing tertiary and quaternary clinical services that are often available only in an academic setting. Additionally, the medical centers provide the entire spectrum of clinical services, including primary and preventive care.

In 2010, the UC Medical Centers collectively formed the UC Center for Health Quality and Innovation for the purpose of supporting and promoting innovations developed at UC medical center campuses and hospitals in order to improve quality, access, and value in the delivery of health care both within the UC system and also statewide and nationally. To date, the documented impacts of this initiative have been substantial, with both clinical quality improvements such as decreases in length of stay, complication rates, and readmission rates, as well as favorable financial impacts that includes significant savings and new revenues.

The medical centers are internationally recognized as leading sites for research and development of new diagnostic and therapeutic techniques. A highly diverse portfolio of clinical research is funded by government agencies, foundations, and private industry. All of the UC medical centers currently operate as Level 1 Trauma Centers, capable of providing the highest level of specialty expertise and surgical care to trauma victims.

Display XI-1: UC Medical Centers[1] At-A-Glance, 2016-17

The University's five academic medical centers constitute the fourth largest healthcare system in California.

Licensed acute care inpatient bed capacity	3,912
Patient days	1,049,000
Outpatient clinic visits	5,102,570
GME residents trained	4,620
Total operating revenue	$11.4 billion

[1]UCSF Medical Center financial statements include UCSF Benioff Children's Hospital Oakland, a blended component unit of the University of California.

With their tripartite mission of teaching, public service, and research, the UC academic medical centers benefit both California and the nation. They provide excellent training for tomorrow's health professionals, educational opportunities for community health professionals who participate in the University's clinical teaching and continuing education programs, and healthcare services to thousands of patients each day.

UC's patients generally have more complex medical conditions than patients at many other institutions, which often can only be managed in tertiary referral hospitals such as UC's academic medical centers. The case mix index, which measures patient complexity and severity, has historically been higher than the state average. In alignment with the mission of advancing medical science and educating health professionals, the UC academic medical centers also play a critical role in maintaining healthcare access to medically vulnerable populations. This includes being major providers of care to Medicare- and Medicaid- (known as Medi-Cal in California) eligible patients. According to 2016-2017 data from the Office of Statewide Health Planning and Development, the UC health system is the second largest health system of outpatient and inpatient services for Medi-Cal in the State of California. With the expansion of the Medi-Cal population under the Affordable Care Act, the University has also experienced a significant increase in Medi-Cal patient volume and corresponding costs. For example, at UCI and

UCD Medi-Cal patients represent just under one half of inpatient volume.

TEACHING HOSPITAL FUNDING SOURCES

Changes in healthcare delivery, financing, and coverage are generating unprecedented pressures across the nation's healthcare system. In order to thrive in this era of rapid change and respond to pressures by both public and private sectors to contain healthcare costs and to ensure revenue and funding sources remain stable, UC Health is working proactively to improve healthcare quality and outcomes, increase market share to remain competitive and successfully leverage its collective strengths, decrease expenses, and improve alignment between the faculty practice groups and medical centers.

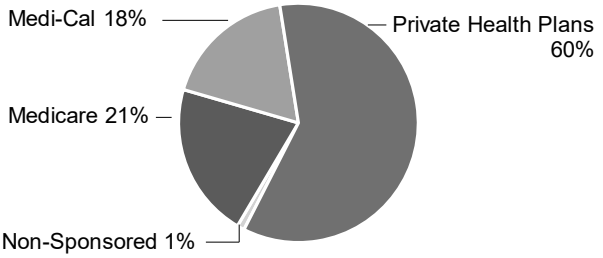
The University's teaching hospitals earn revenue from a variety of sources, each with unique economic constraints, issues, and policies. In 2016-17, over 95% of total revenue for the medical centers came from the provision of clinical care. The shifting political environment of healthcare signals the possibility of changes to the hospitals' revenue sources over the next several years.

Private Health Plans and Managed Care

Private health plans, in all forms, represent the largest source of revenue for the medical centers. Revenue from this source was $6.6 billion in 2016-17. Healthcare, including hospital services, is increasingly paid for by "managed care" plans that incentivize reduced or limited cost and utilization of healthcare services. Managed care plans pay providers in various ways, including negotiated fee-for-service rates and "capitation" payments under which hospitals are paid a predetermined periodic rate for each enrollee in the plan that is assigned or otherwise directed to receive care at a particular hospital.

Under each model of managed care, providers assume a financial risk for the cost and scope of institutional care provided to a plan's enrollees. If a medical center is unable to adequately contain its costs, net income is adversely affected; conversely, medical centers that improve efficiency or reduce incurred costs maximize revenue.

Display XI-2: 2016-17 UC Medical Center[1] Revenue by Source



[1] UCSF Medical Center financial statements include UCSF Benioff Children's Hospital Oakland, a blended component unit of the University of California.

Medicare

Patient care reimbursements from Medicare, the federal governmental health insurance system for eligible elderly and disabled persons, constituted 21%, or $2.3 billion, of medical center revenues in 2016-17. Each of the medical centers is currently certified as a provider for Medicare services and intends to continue to participate in the Medicare program. Periodically, the requirements for Medicare certification change, which can require UC to alter or upgrade facilities, equipment, billing processes, policies, personnel, and services in order to remain certified.

Medicare Graduate Medical Education Payments

Medicare also provides teaching hospitals with Graduate Medical Education (GME) payments to help pay for the direct medical costs of providing medical education and for direct programmatic costs allowable under Medicare, such as salary and benefits for medical residents.

Medicare indirect medical education payments are provided to teaching hospitals for some of the indirect costs associated with medical education, such as the extra demands placed on medical center staff as a result of teaching activity or additional tests and procedures that may be ordered by medical residents.

Medicaid/Medi-Cal

Medicaid is a program of medical assistance, funded jointly by the federal government and the states, for certain needy individuals and their dependents. Under Medicaid, the federal government provides grants to states with medical

assistance programs consistent with federal standards. Medicaid programs are operated by states and use various mechanisms to pay hospitals. The Medicaid program is referred to as Medi-Cal in California. Medicaid/Medi-Cal provided 18%, or $2.0 billion, of medical center revenue in 2016-17. The State selectively contracts with general acute care hospitals to provide inpatient services to Medi-Cal patients, and each of the medical centers currently has a Medi-Cal contract. However, even with a diverse range of other payment sources, costs associated with Medi-Cal are not fully covered. In 2016, UC Health absorbed more than $700 million dollars in unreimbursed Medi-Cal costs, which represents almost two-fold increase in unreimbursed costs since 2013.

Current Medi-Cal Waiver. California has established a modified Medicaid financing system through Section 1115 of the Social Security Act. Section 1115 allows states to waive certain federal statutory Medicaid program requirements or obtain federal matching funds for costs or investments that would not otherwise be allowed under the Medicaid program. This flexibility allows states to test innovative approaches to care, in an effort to improve quality, access, and efficiency. On December 30, 2015, the Centers for Medicaid and Medicare Services (CMS) approved California's latest Section 1115 Waiver, "California Medi-Cal 2020 Demonstration," on behalf of the 21 public hospital health systems in California. The University of California's five academic medical centers are an integral component of the public hospital safety net for California, and the Medi-Cal waiver is a high priority since it shapes how the Medi-Cal program is funded and structured. The State of California submitted its official acceptance of the CMS Standard Terms and Conditions (STCs) and expenditure authorities on January 28, 2016.

Medi-Cal 2020 is designed to give public systems the incentive and opportunity to support their safety net role and their ability to compete. The California Medi-Cal 2020 demonstration waiver consists of several components, including:

- The Public Hospital Redesign and Incentives in Medi-Cal program (PRIME), which builds on the successful Delivery System Reform Incentive Payments program. PRIME will provide participating entities with incentive payments based on achievements of specified benchmarks and metrics.
- $750 million over five years for a Dental Transformation Initiative.
- A number of independent assessments of network adequacy, access to care, uncompensated care, and hospital financing.

Additionally, the waiver provides the University's academic medical centers with a fixed percentage of the statewide Medicaid Disproportionate Share Hospitals (DSH) allotment and the Safety Net Care Pool that were created in prior waiver agreements. These provisions have created funding predictability. As noted later in this chapter, however, UC teaching hospitals, UC medical centers, and other safety net hospitals in California are subject to DSH cuts included in the Affordable Care Act.

Hospital Quality Assurance Fee. To help cover safety net hospitals' Medi-Cal costs that are not reimbursed by the Medi-Cal program, California's hospitals have developed a provider fee program. Private hospitals assess fees on themselves and the resulting funds serve as the non-federal share to draw matching federal funds. The Hospital Quality Assurance Fee (QAF) was scheduled to sunset on January 1, 2017. In June of 2016, Governor Brown signed AB 1607 (Committee on Budget) which extended the sunset to January 1, 2018. The California Hospital Association (CHA) successfully sponsored a 2016 ballot initiative to make the hospital fee program permanent. UC and other public hospitals receive a portion of the QAF funding through an agreement with CHA.

Other Sources

Clinical Teaching Support. State General Funds were appropriated to the University in recognition of the need to maintain a sufficiently large and diverse patient population at the medical centers for teaching purposes. These funds, called Clinical Teaching Support (CTS), were historically used to provide financial support for patients who were essential for the teaching program because their cases were rare or complicated (providing good training experience), but who were unable to pay the full cost of their care. Prior to budget cuts associated with the Great Recession, CTS funds represented about $45 million, or about 1% of the total operating revenue for the medical centers in 2007-08. During the most recent fiscal crisis,

campuses were given (and still retain) the flexibility to reduce CTS funds to help address budget shortfalls. The Irvine and Los Angeles campuses have continued a portion of the CTS funding previously provided.

County Funding Programs. California counties reimburse certain hospitals for selected indigent patients. Counties use local tax dollars from their general fund to subsidize this healthcare. Downturns in the state's economy affect local county revenues, creating increased competition among local services for reduced funds and constraining the ability of local governments to adequately fund healthcare services for the uninsured. Measures enacted to mitigate these impacts have not provided full relief.

CURRENT CHALLENGES AND ISSUES

UC's medical centers are subject to a wide variety of pressures that may impact their financial outlook over the next several years, including:

- uncertainty as to whether cost-sharing reduction subsidies will continue to be paid by the federal government to help issuers of the California State Health Insurance Exchange (Covered California) defray the additional costs of covering higher-risk individuals in the non-group state health care exchange, and help ensure premium costs for enrollees do not become too exorbitant so as to eliminate their capacity to retain health care coverage;
- uncertainty as to whether federal legislative attempts to restructure the Medicaid Program as a block grant or per capita cap allotment system will succeed, and if such attempts do succeed, how California and UC will be able to respond to the great funding gaps to Medi-Cal that would result;
- changes to the federal Medicare program that affect direct and indirect support for medical education and reimbursement for patient care;
- changes to federal Medi-Cal payments for patient care, including aggregate caps on supplemental payments;
- increased pressure to make healthcare services more affordable and link payments to the type and quality of service provided and the outcomes they achieve;
- increasing unreimbursed costs related to medically uninsured patients;
- rising costs of pharmaceuticals and medical supplies;
- increasing salary and health and welfare benefit costs;
- increasing employer contributions to UCRP, which are becoming a growing proportion of medical centers' fixed costs, and without increasing efficiency, could result in negative operating margins;
- financing seismic retrofit and other significant capital needs, such as upgrades necessary for programmatic changes;
- increasing demand for services and capacity constraints;
- a shortage of key personnel, particularly laboratory and radiology technicians, resulting in increased use of temporary labor; and
- implementing community preparedness activities, such as establishing procedures for responding to epidemics.

Despite these economic issues, the UC medical centers must generate sufficient funds to meet their teaching mission and support their schools of medicine. The financial viability of the UC medical centers depends upon payment strategies that recognize the need to maintain an operating margin sufficient to cover debt, provide working capital, purchase state-of-the-art equipment, invest in infrastructure and program expansion, support medical education, and allow provision of care for the poor. The medical centers continue to grow and fulfill their missions, but the future presents challenges, including those associated with healthcare reform.

LEVERAGING SCALE FOR VALUE

Recognizing the need to reduce costs and increase revenue, UC Health launched a Leveraging Scale for Value project in March 2014. Aligned with President Napolitano's push to identify cost savings and operational efficiencies, projects in 2014-15 initially focused on areas of supply chain and revenue cycle. This project saved more than $178 million in Fiscal Year (FY) 2015, more than $380 million in FY 2016, and almost $540 million in FY 2017, and continues to demonstrate how system-wide efficiencies produce savings and quality improvement in the ever-changing landscape of health care. In recognition of UC Health's demonstration of excellence in balancing cost, quality, and outcomes, the system was awarded a Health Care Supply Chain Achievement Award from the ECRI Institute (formerly the "Emergency Care Research Institute") in 2017.

UC SELF-FUNDED PLANS

The University of California offers three self-funded, Affordable Care Act compliant PPO plan options to approximately 225,000 employees, retirees, and their dependents: UC Care, Core, and the Health Savings Plan. UC Care is a custom three tier PPO plan. Tier 1 is

predominately comprised of UC Health System providers from the five academic medical campuses. In instances where services are not available at a nearby UC facility or medical group, employees are able to access other providers for covered services in a preferred provider network. Both Core and the Health Savings PPO plans are high deductible health plans. The Health Savings plan combines the flexibility of a PPO with the tax-saving benefits of a Health Savings Account (HSA). UC funds the Health Savings Account (HSA) up to $1,000 for those employees with family coverage. Over the long term, the oversight of the three plans will provide the University of California with the ability to more proactively manage healthcare costs and aim for better population health. Currently, the three PPO plans have enrolled approximately 66,000 UC employees, dependents, and retirees.

HEALTHCARE REFORM

The Patient Protection and Affordable Care Act (ACA), enacted in March 2010, made significant changes in federal programs and tax policies regarding health care. These changes affected insurance coverage, affordability and accessibility of insurance, the financing of medical care, and the operation of the Medicare program. The Congressional Budget Office (CBO) estimated in March 2011 that the ACA would increase the number of nonelderly Americans with health insurance by 32 million in 2016 and by 34 million in 2021.

Disproportionate Share Hospital Payments. Medicaid Disproportionate Share Hospital (DSH) payments subsidize hospitals with high levels of uncompensated care and help to provide low-income individuals access to treatment. The ACA has prescribed cuts to DSH payments, which took effect October 1, 2017. As a result, UC teaching hospitals, UC medical centers, and other safety net hospitals in California that provide care to a large number of low-income individuals stand to receive lower DSH payments in the future. The first year of DSH cuts are estimated to result in a $153 million cut to funding for California.

Covered California. The California State Health Insurance Exchange, known as Covered California, became operational on January 1, 2014. While it is difficult to predict the full impact it will have on UC Health, it is clear that the Exchange seeks to control the costs of health insurance premiums, challenging UC Health to lower expenses and incentivize quality in the delivery of healthcare. The University has several initiatives underway that address cost and quality issues.

UC Health has established a strong position to attract patient volume associated with Covered California enrollees through a partnership with the Anthem Blue Cross Health Plan, which has become a dominant presence in Covered California. UC healthcare providers are Tier 1 providers within Anthem's Exchange and the only academic medical center with Tier 1 status participating in Covered California.

Future of Healthcare Reform. For the first time since its enactment in 2010, the Affordable Care Act is under direct threat of repeal or significant change. Although recent attempts to repeal or replace the law have failed, the long term future of the law remains unclear.

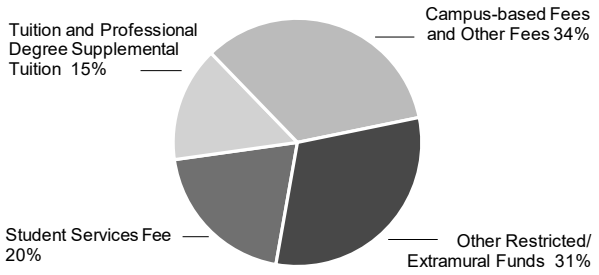
Student Services

Student services programs and activities contribute to the intellectual, cultural, and social development of students outside of the formal instructional process and enhance their ability to be successful inside the classroom. These services can have a significant influence on students' academic outcomes, as well as personal development, and can help build bridges between what students learn in the classroom and how they apply their knowledge and skills on campus and in the broader community.

Student services are supported almost entirely from non-State funds. Total expenditures for student services in 2016-17 were $1.1 billion, most of which were generated from student fees. The University features a variety of student services programs. Elements of these programs are described below.

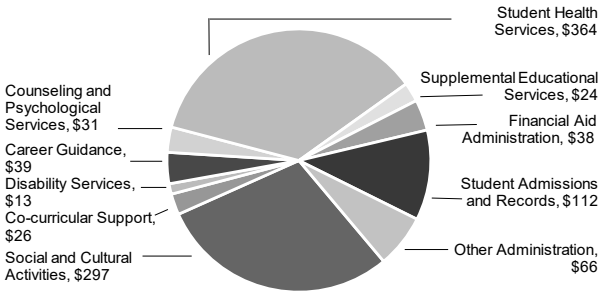
- **Campus admissions and registrar operations** include the processing of applications for admission, course registration, scheduling of courses, maintaining and updating student academic records, preparing of diplomas, and reporting of statistics.
- **Campus financial aid offices** counsel students about their financing options; determine and monitor the eligibility of students for financial assistance; and develop financial aid packages for students, which include scholarships, fellowships, grants, fee waivers/remissions, loans, and work-study jobs from federal, State, UC, and private sources.
- **Counseling and Psychological Services** are available to all registered students. Campus services include emergency response, short-term counseling, outreach and prevention services, and faculty/staff consultation aimed at maintaining the emotional health and wellness of the campus community.
- **Student health services** provide primary care and other services to keep students healthy, including general outpatient medical care; specialty medical care; psychiatry; and health education, including wellness and stress reduction.
- **Academic Support Services** (Supplemental Educational Services) offer individual and group tutorial services in writing, mathematics, and study skills, as well as preparation for graduate school exams.
- **Co-curricular support and engagement** includes services for student veterans, undocumented students, LGBTQ students, cross-cultural centers, leadership programs, and student government.

Display XII-1: 2016-17 Student Services Expenditures by Fund Source (Total: $1 Billion)



Student fee revenue, including campus-based fee revenue, provides 69% of the funding for student services. Total includes administrative activities.

Display XII-2: 2016-17 Student Services Expenditures by Category, Dollars in Millions (Total: $1 Billion)



In 2016-17, 93% of student services expenditures were for non-administrative activities in counseling, cultural and social activities, and student health services.

- **Services to students with disabilities** include readers for the blind, interpreters for the deaf, note-takers, mobility assistance, adaptive educational equipment, disability-related counseling, and other services.
- **Social and cultural activities** provide opportunities for students to participate in student organizations, recreational and sport activities, and various forms of art (music, dance, painting, etc.).
- **Career guidance** activities assist students with academic performance, choice of major, graduate or professional school applications, internships, career opportunities, and assessing interests and aptitudes.

Student services programs, as with many University programs, persistently suffer from underfunding. Beginning in the early 1990s, student services were adversely affected by severe budget cuts when the University was forced to make significant reductions due to the State's fiscal crisis. At that time, student services were State funded and have since been shifted to non-State funds, primarily Tuition and the Student Services Fee. In 2002-03, student services programs were further reduced by a targeted mid-year cut of $6.3 million, which grew to $25.3 million in 2003-04 – equivalent to a 20% reduction – in Student Services Fee funded programs. These reductions occurred when student enrollment was increasing with corresponding growth in demand for student services, including during the summer.

Despite an increase in the Student Services Fee in 2011-12, student needs continued to evolve, more students were enrolling at UC, and program costs continued to increase, making it more difficult to provide adequate services. The State's renewed investment in UC, announced by Governor Brown in the May Revise to the 2015-16 Budget, included a budget framework that initiated much needed predictability in its long-term fiscal outlook and a solid foundation from which to plan. The budget framework also acknowledged the need for additional revenue for student services. Thus, the University implemented a plan in 2015-16 for increases of 5% annually to the Student Services Fee. Half of the revenue generated by the increase (net of aid) is designated for enhanced mental health services with the other 50% for critical student services. In 2017-18, the Regents approved an additional 5% increase to the Student Services Fee, or $54 per student, designating 50% of the net revenue (after return to aid) to expand student mental health services and related resources.

STUDENT MENTAL HEALTH SERVICES

Issues concerning student mental health continue to see heightened national attention, with colleges and universities reporting increasing numbers of students in psychological distress. The University of California has not been immune to this trend. Since 2007-08, UC's Counseling Centers have experienced a 75% increase in the utilization of student mental health services.

A comprehensive systemwide review of student mental health issues and the challenges associated with providing these necessary services were presented to the Regents in September 2006. The following was noted:

- Consistent with national trends, UC students are presenting mental health issues (e.g., suicidal thoughts, depression, stress, and anxiety) with greater frequency and complexity (e.g., prescribed psychotropic medications in combination with psychological counseling).
- Budget constraints limit campus capacity (e.g., increasing psychological counseling staff) to respond to mental health issues and result in longer student wait times, difficulty retaining staff, and decreased services and programs.
- Increasing demand and declining capacity pose a threat to the learning environment because of the significant adverse impacts on faculty, staff, and fellow students when students are inadequately cared for through the existing mental health system.

Recommendations in the final 2006 Student Mental Health report were organized within a three-tier model: Critical Mental Health Services, Targeted Interventions for Vulnerable Groups, and Creating Healthier Learning Environments. The model was created to provide a framework for meeting the fundamental mental health needs of students and for providing safe and healthy campus environments across the system. The recommendations include:

- Tier I: restoring critical mental health services to fully respond to students who have demonstrated at-risk behavior and to reduce wait times;
- Tier II: implementing and augmenting targeted interventions through education, support, and prevention programs, and restoring staffing levels in those units best poised to assist high risk students of concern, as well as students from vulnerable populations; and
- Tier III: taking a comprehensive approach to creating healthier learning environments by enhancing the full spectrum of student life services and by revising administrative policies and academic practices in order to promote communication and collaboration.

In response to the urgent priority to enhance mental health services, in 2007-08 and 2008-09, the University dedicated $12 million (of the recommended $43 million) in funding from Student Services Fee increases for this purpose over

a two-year period. Much of the funding from the increase in 2007-08 has supported critical mental health and crisis response services, such as increasing counseling center staffing to meet the high demand for counseling intervention. Revenue from the 2008-09 Student Services Fee increase has been used to develop programs that target vulnerable groups (e.g., foster youth, veterans); expand outreach; provide mental health internships for students, staff, and faculty; and develop interventions for students at high risk for alcohol and drug abuse. Substantial progress was made in expanding mental health services. However, in 2009-10, a student mental health survey was administered to determine the impact of the Student Services Fee augmentations. Findings indicated that while the wait period to see a mental health professional had decreased, campuses were continuing to see increased severity of student issues and greater demand for mental health services.

In response, the campus Student Affairs divisions and the Office of the President Student Affairs department collaborated on a successful bid for a $6.9 million student mental health grant funded by the California Mental Health Services Authority (CalMHSA) through Proposition 63. In 2011, each campus received $500,000, with the remaining money set aside for systemwide initiatives such as training and forums, programming, the development and maintenance of a systemwide mental health website, and grant management. Funds were used to enhance existing mental health services and create new prevention and early intervention programming. Programmatic efforts include:

- Training for students, faculty/staff, and graduate teaching/research assistants on how to recognize and respond to students in distress;
- Development of a comprehensive, systemwide approach to suicide prevention;
- Creation of a social marketing campaign to reduce stigma for and discrimination of those living with a mental illness;
- Development of an online resource clearinghouse to facilitate collaboration with other mental health stakeholders across California;
- The launch of an anonymous online interactive suicide prevention screening tool;
- Enhanced training materials, including the development and strengthening of crisis response protocols for all faculty and staff;
- Production of systemwide public service announcements and training videos to support the social media campaign; and
- The development of a full text handbook for faculty and staff detailing in-depth information about mental health and the role of faculty and staff in supporting students of concern.

In 2012, UC applied for additional CalMHSA funding, and in January 2013 was awarded $877,224. Of this total, $127,224 was retained by the Office of the President for system-level programming consistent with campus mental health staff priorities, and the remaining $750,000 was distributed to the campuses. This funding provided UC with an opportunity to further expand its response to Tiers II and III of the student mental health recommendations.

In 2014, CalMHSA awarded UC an additional $250,000 to support a systemwide best practice conference and sustain campus awareness campaigns and suicide prevention screenings through December 2015. State-level legislation that would have brought additional mental health funding to UC through Proposition 63 was vetoed by the Governor in 2016 and again in early 2017. No additional funding is anticipated from CalMHSA at this time.

Student mental health issues remain a serious concern at the University as demand and severity continue to increase, often outpacing the national trends. Access to mental health care on- and off-campus was one of the main problems discussed at the January 2016 Regents meeting. Since 2007-08, UC's Counseling Centers have experienced a 96% increase in students seeking services, and the University anticipates that this percentage will continue to rise. Without the statewide grant, prevention dollars have been scarce, as all new funding has been dedicated to direct service and crisis response.

As noted above, the budget framework with the Governor allows for a 5% increase, beginning in 2015-16, to help address and mitigate shortfalls in the staffing and services. Half of the revenue, net of aid, was earmarked for direct mental health services in an effort to decrease wait times, and bring staffing levels up to the national standards for counselor-to-student ratios. Since the 2015-16 increase,

approximately 80% of approved new positions have been filled across the system. As one promising sign of the impact of these new funds, the average number of days for a first counseling appointment has dropped from 19 days in 2014-15 to 18 days in 2015-16, and is now at 16 days as of 2016-17. On average, 94% of students are able to receive their first contact within 14 days and 83% are seen within seven days, compared to 88% and 78% respectively, in the previous year. UC continues to work to reduce wait times, with the aspiration of seeing all students within fourteen calendar days. However, because the increase was earmarked specifically for staffing, additional funds are still needed to address Tiers II and III of the comprehensive service model.

UC STUDENT HEALTH INSURANCE PLAN

In order to ensure that UC students have access to high-quality healthcare services, the University requires all students to have a minimum level of health insurance coverage. Students can meet this requirement either by enrolling in a UC-sponsored insurance plan or by demonstrating adequate coverage through a plan of their own.

The largest UC-sponsored plan is the UC Student Health Insurance Program (UC SHIP), a self-funded PPO plan first established in 2011. This program incorporates a shared governance structure whereby all key decisions are voted on in the Executive Oversight Board forum, which meets monthly and is comprised of leaders from campus student health services, student representatives, and UCOP executive leadership.

UC students at Davis, Hastings College of the Law, Irvine (graduate students), Riverside, Los Angeles, Merced, San Diego, San Francisco and Santa Cruz campuses are automatically enrolled in UC SHIP for the 2017-18 academic year. UC SHIP offers medical, pharmacy, dental and vision care benefits, and mental health and substance use disorder services for our undergraduate and graduate students and their dependents. Berkeley and Santa Barbara provide medical, dental, and vision benefits administered at the campus level and are not part of UC SHIP.

By leveraging the purchasing power of students across multiple campuses, the University can provide students with access to excellent coverage at affordable prices.

UC SHIP provides benefits that match or exceed those required by the Affordable Care Act (ACA) even though, as a self-funded student health plan, it is not required to do so. University sponsorship of student health insurance plans remains relevant in this era of health care reform. Most students can obtain stronger benefits at a lower cost with a UC-sponsored student health plan than if they purchase an individual plan through the State insurance exchange. In 2015, UC SHIP applied to be a Minimum Essential Coverage (MEC) plan (as required by the Affordable Care Act), so that students can avoid paying a fee for not having insurance. The University's medical centers treat all patients who require services without regard to race, color, religion, national origin, citizenship or other protected characteristics.

PRESIDENTIAL ACTIONS

President Napolitano continues her commitment to addressing critical student challenges and needs. Several student-focused projects are described below.

Undocumented Students. In 2013, President Napolitano allocated $5 million for financial aid and student support services for undocumented UC students. The funding for the initiative came primarily from excess reserves in the Mortgage Origination Program (MOP) and was distributed across all campuses. As a result, campuses have designated primary contacts for undocumented student services at each campus and focused on providing a range of support services that can help undocumented students balance being full-time students with other day-to-day challenges. The President also formed the President's Advisory Council on Undocumented Students to advise her on future challenges and solutions and established a pilot legal center at UC Davis to help students navigate immigration issues. In May 2015, UC hosted a National Summit on Undocumented Students from which a number of recommendations and strategies emerged for better serving undocumented students at UC.

In spring 2016, President Napolitano announced an additional three-year commitment of $25.2 million to

support the University's efforts to assist undocumented students. The funding is dedicated to UC's DREAM Loan Program; student services staff coordinators; and UC's Immigrant Legal Services Center. After the 2016 United States presidential election, responding to concerns of possible changes to federal policy that would affect undocumented students, the University issued its Statement of Principles in Support of Undocumented Members of the UC Community reaffirming its commitment to vigorously protect the privacy and civil rights of undocumented members of the UC community.

In 2017, the Department of Homeland Security issued its guidance on the status of the Deferred Action for Childhood Arrivals (DACA) program, and President Napolitano applauded the administration's decision to maintain the program. However, on September 5, 2017, the Trump administration announced that it was rescinding the DACA program by March 5, 2018, a six month period. Following the announcement, President Napolitano called on Congressional leaders to immediately pass bipartisan legislation that would provide a permanent solution. President Napolitano also reaffirmed UC's unwavering support for all undocumented students and staff and expressed her commitment to ensuring that UC continues to be a welcoming and supportive place for students, faculty, and staff from all backgrounds.

President Napolitano added that UC will continue to provide a broad range of support and legal services for undocumented students and will remain steadfast in upholding the Principles issued last fall. The Principles state, in part, that campus police officers will not contact, detain, question or arrest an individual solely on the basis of suspected undocumented immigration status or to discover the immigration status of an individual, except as required by law. The Principles also clarify that the University will not release immigration status or related information from confidential student records, without permission from a student, to federal agencies or other parties without a judicial warrant, a subpoena, a court order or as otherwise required by law.

President Napolitano directed the advisory committee on undocumented students to determine additional necessary measures to best support and protect current and future UC students who rely on DACA during the next six months and beyond. In addition, the University filed a lawsuit against the current Administration for violating administrative procedures and constitutional due process requirements by abruptly ending the DACA program, which President Napolitano helped to establish in 2012 while she served as Secretary of the Department of Homeland Security. The University is being represented pro bono by the law firm Covington & Burling, LLP.

The President's Advisory Council on Student Veterans advises the President on how best to address the particular challenges student veterans face. Current veteran-specific educational support programs and services include admissions outreach; priority course registration; affordable housing; academic support; career development; graduate school support; and staff training. As an outcome of the Advisory Council, a systemwide Veterans Resources website was launched in September 2015. The site provides veteran-specific information on admissions, residency, and educational benefits via the post-9/11 G.I. Bill. In addition to the website, every campus has a designated veterans services coordinator to help connect students with supporters and advocates in health services, career centers, academic advisors, student mentors and student veterans groups across campus. In 2016, the Advisory Council organized a systemwide UC Veterans Career Success Forum. The Forum focused on supporting student veterans' transition to careers and/or graduate school through a series of skill-building activities and presentations from California employers, UC veteran alumni, UC graduate and professional school representatives, and UC Career Center Staff.

The President's Advisory Council on Lesbian, Gay, Bisexual and Transgender (LGBT) Students, Faculty, and Staff works with the President to help identify and address specific student needs and strategies to best meet them, as well as to help create a more welcoming and inclusive environment for LGBT students, faculty, and staff. With the Advisory Council's support, the University has added sexual orientation and gender identity questions to the undergraduate and graduate admissions applications, allowing students to indicate a preferred name that appears on certain campus records. The University also issued

guidelines for implementing gender inclusive facilities in University-owned buildings and facilities that are either new or undergoing major renovations, including restrooms and changing rooms.

The President's Task Force on Preventing and Responding to Sexual Violence and Sexual Assault was formed in July 2014 with the goal of UC becoming the national model in preventing and combating sexual violence and sexual assault. This was to be achieved through the completion of two phases, as described below.

- Phase I: Identify steps to improve the University's current processes that will make a difference in effecting cultural change in sexual violence and assault prevention.
- Phase II: Develop recommendations for implementing strategies to support excellence in prevention, response, and reporting of sexual violence, harassment, and sexual assault based on evidence-informed solutions and approaches.

In September 2014, the Task Force presented Phase I, which introduced a national model for campuses to address the issues of sexual violence and sexual assault based on five key functions: Prevention, Education, Advocacy, Response and Reporting (PEAR). The Task Force also made the following seven recommendations:

- Establish a consistent "response team" model at all campuses.
- Adopt systemwide, standard investigation and adjudication standards.
- Develop a comprehensive training and education plan. Implement a comprehensive communication strategy to educate the community and raise awareness about UC programs.
- Implement comprehensive communication strategy to educate the community and raise awareness about UC programs.
- Establish an independent, confidential advocacy office for sexual violence and sexual assault on each campus.
- Establish a comprehensive systemwide website with campus customization capabilities.
- Initiate/develop a systemwide standard data collection system.

In July 2015, the Task Force presented Phase II and outlined how UC has successfully implemented recommendations aimed at improving services and response to sexual violence, and ensuring consistency across the system. These include:

- Establishing a "CARE: Advocate Office for Sexual and Gender-Based Violence and Sexual Misconduct" at every campus;
- Implementing a standardized two-team response model at all UC campuses for addressing sexual violence; and
- Launching a new systemwide website designed to serve as a user-friendly, one-stop portal for quick access to campus resources and important information.

At the September 2015 Regents meeting, the Task Force provided an update on Phase II, primarily on the training efforts that have been implemented to address the President's Task Force on Preventing and Responding to Sexual Violence and Sexual Assault's recommendation to develop a comprehensive training and education plan for students, staff, and faculty. The presentation consisted of an overview of the training efforts for undergraduate and graduate student education and awareness related to sexual assault and sexual violence.

On January 1, 2016, the University issued an updated University sexual violence and sexual harassment policy. As part of the University's continuing strategy to more effectively prevent and respond to sexual violence and sexual harassment on campuses, the revised policy implemented new systemwide procedures for investigating, adjudicating, and imposing sanctions in student cases of sexual violence and sexual harassment. The new procedures assign specific authority, roles and responsibilities to designated offices to ensure consistency across the UC system, and set projected timeframes designed to promptly and effectively respond to complaints. They outline a fair, trauma-informed approach in which a student filing a complaint, and a student responding to the complaint can be heard, offer witnesses and evidence, and appeal.

In January 2017, President Napolitano appointed UC's first systemwide Title IX coordinator to oversee the University's work to effectively address sexual violence and sexual harassment. These efforts include improving UC's policies and procedures, developing effective education and

prevention programs, ensuring fair and efficient investigation and adjudication processes, and ultimately changing the culture to create a safe and respectful learning environment for all students.

On the September 7, 2017, Secretary of Education Betsy DeVos made an announcement that the "era of rule by letter" is over. This announcement appeared to roll back guidance issued by the Office of Civil Rights (OCR) in 2011 known as the Dear Colleague Letter. This guidance discussed the proactive efforts schools can take to prevent sexual harassment and violence, and provided examples of remedies that schools and OCR may use to end such conduct, prevent its recurrence, and address its effects.

Building on her remarks, on September 22, 2017, DeVos introduced new Interim Questions and Answers on Title IX guidance[1] for schools on how to investigate and adjudicate allegations of campus sexual misconduct under federal law. Specifically, the Department of Education is withdrawing the 2011 Dear Colleague Letter and the 2014 Questions and Answers on Title IX. In the coming months, the Department of Education plans to engage in rulemaking on Title IX responsibilities and solicit input from stakeholders and the public. In the meantime, the Administration will continue to rely on its Revised Sexual Harassment guidance, which was informed by a notice-and-comment process issued in 2001, as well as the reaffirmation of that guidance in the Dear Colleague Letter on Sexual Harassment issued on January 25, 2006.

Following the release of the new interim Questions and Answers guidance, President Napolitano released a statement expressing her concern that the new guidelines would weaken sexual violence protections, create confusion among the campuses on how to best respond to sexual violence and harassment, and unravel the current process that schools have built to implement fair and timely procedures for survivors and the accused. President Napolitano added that the University's pledge to protect students and employees from sexual harassment and violence remains unchanged, and reaffirmed the University's commitment to fostering a culture of safety and security for students and staff, free of sexual harassment and sexual violence, while ensuring a fair and consistent process for responding to reports of sexual violence.

FUTURE NEEDS

The University has identified a number of critical needs for additional student services funding. The new revenue generated from half of the 5% Student Services Fee increase, net of aid, included in 2017-18 may be used to address the following critical services that would help to ensure higher retention and graduation rates.

- Campuses need increased funding for academic support programs, including tutoring in writing, mathematics, and study skills, as well as preparation for graduate and professional school exams.
- The strain on student services budgets has been exacerbated over time by the increasing demand for services to students with disabilities, many of which are very expensive and cause limited student services funds to be spread even more thinly. There continues to be an increase in demand for interpreting and/or real-time captioning services (and costs have increased for interpreters), as well as services for those suffering from repetitive stress injuries who require multiple forms of auxiliary services and assistive technology.
- Campuses have not had the resources to invest sufficiently in major student information systems (e.g., student information services; web-based services; and registration, admissions, student billing, financial aid, and accounting services) to meet the current and future needs of students and student service organizations.

[1] https://www2.ed.gov/about/offices/list/ocr/docs/qa-title-ix-201709.pdf.

Institutional Support

Institutional support services provide the administrative infrastructure for the University's operations. Grouped into five broad categories, institutional support activities include:

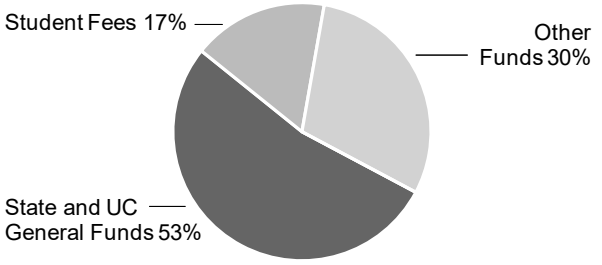
- **Executive Management** — Offices of the President, Vice Presidents, Chancellors, Vice Chancellors, Regents' Officers, the Academic Senate, and Planning and Budget;
- **Fiscal Operations** — accounting, audit, contract and grant administration, and insurance management;
- **General Administrative Services** — information technology, human resources, and environmental health and safety;
- **Logistical Services** — purchasing, mail distribution, police, construction management, and transportation services; and
- **Community Relations** — alumni and government relations, development, and publications.

The University faces a growing body of unfunded mandates affecting institutional support, including new accounting standards, growing accountability requirements, and increased compliance reporting in areas ranging from environmental health and safety to fair employment practices and compensation issues. To address these unfunded mandates, the University has absorbed increased costs of developing new data collection processes, changing existing information and reporting systems, and growing its analytical staff.

Despite these added expenses, institutional support expenditures as a proportion of total University expenditures have steadily decreased over the last 30 years. Institutional support budgets are often one of the first areas of the budget to be reduced in difficult economic times. In response to budget cuts, UC administrative units have implemented new processes, improved use of technology, and consolidated operations to increase productivity in order to meet increasing workload demands under constrained budget situations.

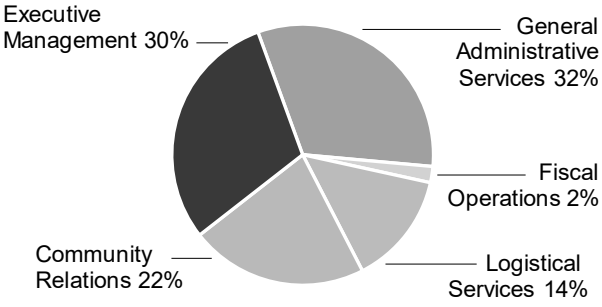
Since the early 1990s, as each recession has occurred, legislative intent language and the shared desire of the University and the State to protect core academic programs has meant that institutional support has often been targeted for additional cuts over the years:

Display XIII-1: 2016-17 Institutional Support Expenditures by Fund Source



Core funds provide 70% of institutional support funding. Significant other sources include private funds, endowment earnings, and indirect cost recovery for contract and grant administration.

Display XIII-2: 2016-17 Institutional Support Expenditures by Category



Logistical services, fiscal operations, and general administrative services comprise half of institutional support expenditures.

- Between 1995-96 and 1998-99, budget reductions totaled $40 million, consistent with productivity improvements mandated under a four-year Compact with then-Governor Wilson.
- In 2003-04 and 2004-05, institutional support and academic support budgets were reduced by a total of $81.9 million.
- For 2008-09, the State directed that $32.3 million be reduced from institutional support.

In addition to these base budget cuts, unavoidable cost increases related to faculty merits, employee health benefits, purchased utilities, and maintenance of new space have often been funded by redirecting resources from institutional support. Reduced funding for institutional support limits essential investment in UC's technology

infrastructure and constrains fundraising and development activities at a time when such activities are more critical than ever to sustain the institution.

THE OFFICE OF THE PRESIDENT AND UNIVERSITYWIDE ACADEMIC PROGRAMS

In 2014-15 the University of California Office of the President (UCOP) set forth a new funding model and a clarified vision of the appropriate role of central programs in support of the ten campuses. In this vision, UCOP performs the following functions:

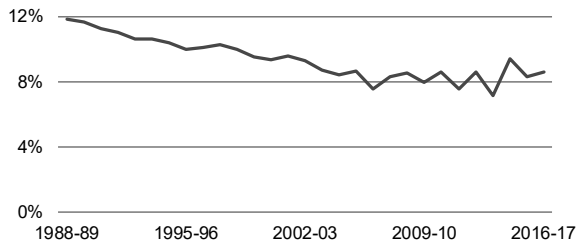
Central and administrative services for the entire UC system to avoid redundancy of functions at each campus medical center, and the Lawrence Berkeley National Laboratory. These services include:

- Governance and administrative services, as performed by officers reporting directly to the Board of the Regents, the Academic Senate, and the immediate offices of senior administrative leadership.
- Central service functions, such as systemwide budget management, external relations, management of the retirement and benefit systems, banking services, cash management, corporate accounting, risk services, and strategic sourcing;
- Academic programs, including central administration of a single digital library system and UC Press.

Systemwide Academic and Public Service Programs, which are administered at and/or funded from the center to the benefit of the entire UC system. These programs include critical academic and research programs, such as the UC Observatories and the California Institutes for Science and Innovation; the statewide Cooperative Extension program administered by Agriculture and Natural Resources; and the administration of non-campus-based academic programs, such as the UC Washington Center.

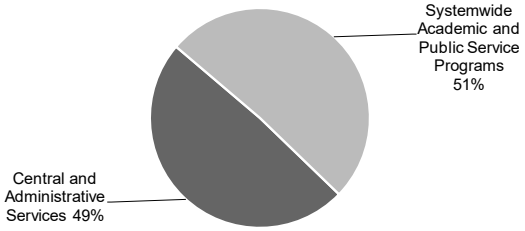
As shown in Display XIII-4, 51% of the UCOP budget supports Systemwide Programs. The total central budget represents about 2.4% of the overall University of California budget. UCOP coordinates activities that allow a complex and unique system to operate efficiently as one university, furthering its instruction, research, and public service missions. This structure reduces redundancy across the system and helps strategically position the campuses to excel.

Display XIII-3: Institutional Support as a Percentage of University Spending



Spending on institutional support as a percentage of total UC expenditures has dropped from over 11% in 1988-89 to about 8.6% in 2016-17.

Display XIII-4: 2017-18 UCOP Budget by Category



The total UCOP budget for 2017-18 is $797.5 million.

ADMINISTRATIVE EFFICIENCIES

The University is committed to achieving a level of administrative excellence equivalent to that of its teaching and research enterprises. To that end, the University has coordinated a number of systemwide efforts to leverage its size and scale to achieve operational efficiencies. Examples include:

- **Connexxus Travel**, a centrally managed travel program offering online and agent-based reservation options and discounts to UC and CSU travelers. To increase utilization, the Connexxus team recently redesigned the web portal to strengthen the user experience at all UC locations.
- **P200: Strategic Procurement**, a Universitywide program by Procurement Services staff at UCOP who negotiate vendor contracts to leverage UC's substantial combined buying power. Through the development and implementation of strategic procurement processes and state-of-the-art technology, P200 optimized the value of funds expended on the acquisition of goods and services. The program has also generated revenue for the campuses, consisting of early pay discounts, e-commerce incentives, and other negotiated efficiency incentives.

- **Fiat Lux Risk and Insurance Company (Fiat Lux),** a wholly-owned, single-parent, not-for-profit captive insurance company established by the UC Regents in 2012. As an incorporated and licensed insurance company, Fiat Lux provides the University a unique mechanism with which to finance UC's systemwide risks. It also allows UC to capture underwriting profits and corresponding investment income that would normally be retained by traditional insurance companies. Fiat Lux now purchases a majority of the insurance to cover the University's risks systemwide. Whereas in the past, UC purchased this insurance on a retail basis through brokers, Fiat Lux purchases reinsurance directly from the markets (on a wholesale basis), increasing UC's capacity and reducing its expense.

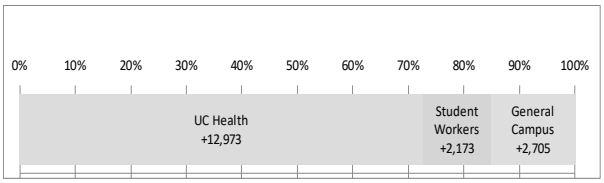
EMPLOYEE TRENDS AT UC

The growth in academic versus non-academic personnel is a topic that reemerges periodically, particularly during times of budgetary shortfalls and during salary negotiations for specific employee groups. The most recent budget crisis has rekindled concerns about growth in administration and how it compares to growth in student enrollments and faculty. While there has been growth in staffing at the University as a whole, it has been due largely to a growing population of students on our campuses and patients in our medical centers. Administrative staff levels have grown very little overall and have actually declined in programs that are supported from core funds.

An analysis of employee trends between October 2007 and October 2016 helps identify where personnel growth has occurred.

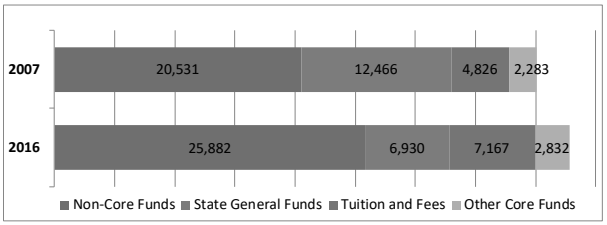
- The majority of staff growth (73% of the increase) is UC Health staff, which parallels increases in patient days and outpatient visits. UC Health staff are primarily supported by non-core funds (97%), with the remainder in health science academic programs.
- General campus student workers account for 12% of the increase, which is largely due to the enrollment growth of more than 50,000 over this period. About half of student workers are work-study students who work on campus as part of their financial aid packages.
- The remaining growth occurred in general campus staff. Although enrollment increased by 15% between 2007 and 2016, general campus staff grew only 0.7% per year amidst increasing enrollment and expansion of self-supporting auxiliary enterprises. General campus non-student staff supported by State General Funds has declined by 5,537 FTE, more than twice the overall growth of this group since 2007. Meanwhile staff supported by non-core funds grew by 5,351 FTE. See Displays XIII-5 and XIII-6 for details.

Display XIII-5: UC Staff FTE, October 2007 and 2016



Although enrollment increased by 2.3% annually, general campus staff has only increased by 0.7% annually.

Display XIII-6: General Campus Staff by Fund



- Over this same period, Senior Management Group (SMG) staff has decreased annually by 1%. These employees represent less than one-half of 1% of general campus staff. Managers and Senior Professionals (MSP) staff increased by 3.8% annually with 74% of the growth coming from Technical/Senior Professional staff. This growth is a reflection of the professionalization of UC's workforce which mirrors changes seen in the wider labor market over the last several years.

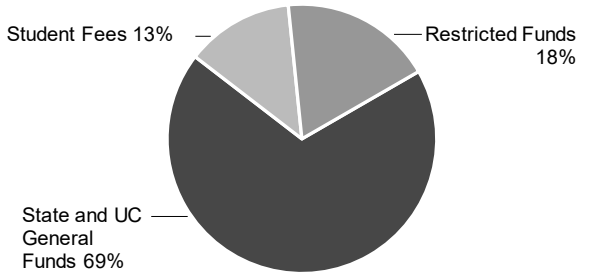
Operation and Maintenance of Plant

An essential activity in support of the University's core mission of instruction, research, and public service is the operation and maintenance of facilities, grounds, and infrastructure, collectively known as operation and maintenance of plant (OMP). UC maintains and/or occupies approximately 137 million gross square feet of space in 6,000 buildings, 1,949 of which are buildings that are at least 10,000 square feet. These buildings, spread across the 10 campuses, five medical centers, and nine agricultural research and extension centers, include classrooms, laboratories, animal housing facilities, libraries, and specialized research facilities. Historically, the State funded space according to use; space used for classrooms, laboratories, offices, and some research and support uses have been eligible for State support. Approximately 67.5 million square feet (approximately 49%) is eligible to be maintained with State funds, while the rest houses self-supporting activities, such as medical centers and auxiliary enterprises, OMP costs for which must be included in their budgets. OMP expenditures for State-eligible space totaled $685 million in 2016-17.

Operation and maintenance of plant funding typically falls into four basic categories: *facilities operations,* including facilities management, grounds maintenance, janitorial services, utilities operations, and purchased utilities; *facilities maintenance* which includes preventive and repair activities necessary to realize the originally anticipated life of a fixed asset, including buildings, fixed equipment, and infrastructure; *capital renewal*, the systematic replacement of building systems and campus infrastructure to extend useful life; and *deferred maintenance*, the unaddressed backlog of renewal resulting from chronic underfunding of ongoing OMP support and the lack of regular and predictable investment in capital renewal.

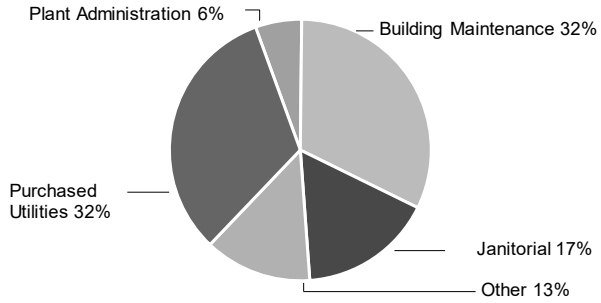
Between 2007-08 and 2011-12, the University was compelled to cut funding for the operation and maintenance of facilities to help protect core academic programs. While some of this reduction was mitigated due to increased efficiency – which is good for the fiscal health of the University – much of the reduction resulted from negative austerity measures, such as cuts in building maintenance activities, scaled-back or eliminated preventive maintenance programs, and reduced custodial and grounds maintenance services.

Display XIV-1: 2016-17 OMP Expenditures by Fund Source (Total: $685 Million)



The bulk of OMP expenditures is supported by core funds (State and UC General Funds and student fees funds).

Display XIV-2: 2016-17 OMP Expenditures by Category (Total: $685 Million)



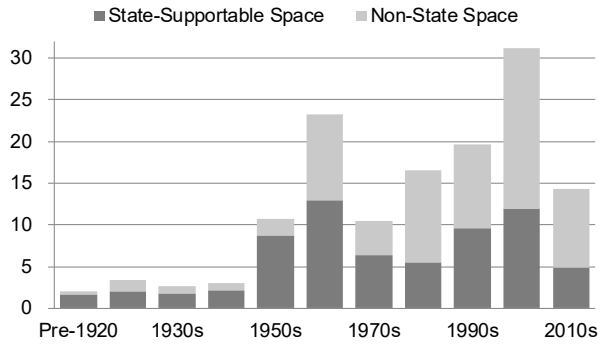
Purchased utilities for UC facilities account for approximately one-third of OMP expenditures. Building maintenance accounts for another third.

Recent budget cuts compound years of underfunding, particularly for basic building maintenance, and the historical absence of systematic funding of capital renewal. Chronic underfunding of basic maintenance shortens the useful life of building systems, exacerbating the maintenance needs of the University's vast inventory of aging facilities. Nearly 56% of the University's State-eligible space is more than 30 years old, as Display XIV-3 shows. These aging facilities are more expensive to maintain, and, with the building systems at or beyond their useful life, are a principal driver of the University's escalating capital renewal needs. Moreover, specialized

research facilities comprise a growing percentage of the University's inventory of State-eligible space. These facilities strain limited OMP funds with higher maintenance and utility costs.

UC is woefully underfunded for its facilities maintenance. Based on the University's current OMP expenditures (excluding purchased utilities) for State-eligible space as well as the latest nationally developed and recognized standards, UC's annual shortfall is estimated at about $200 million for basic maintenance and an additional $250 million for deferred maintenance and capital renewal needs.

Display XIV-3: All Space by Decade of Construction (Gross Square Feet in Millions)



The University's physical plant expanded rapidly in the 1950s and 1960s and again in the late 1990s and 2000s.

BUILDINGS AND GROUNDS MAINTENANCE

Funding for operation and maintenance of new space is an essential annual budget need; however, OMP is often one of the first areas to be cut in times of fiscal uncertainty and one of the last to be restored when times improve. Funding for OMP has not been stable or predictable since the mid-1990s, as described in Display XIV-6 at the end of this chapter, which provides a brief funding history.

Starting in the mid-1990s, the State acknowledged the need to provide funding through various strategies in recognition of more than two decades of chronic underfunding of the University's OMP needs. Funding agreements with three former Governors (Wilson in 1996-99, Davis in 1999-2003, and Schwarzenegger in 2003-11) attempted to tie OMP funding to annual base budget adjustments; however, ensuing fiscal crises prevented most of the augmentations from occurring. Similarly, OMP funding was eventually included in the renegotiated marginal cost of instruction formula (related to enrollment growth and described in more detail in the General Campus Instruction chapter) in 2006-07, but the State has not regularly provided full marginal cost funding since 2007-08.

To help to fill these shortfalls in OMP, the University has on several occasions been forced to redirect its own resources to address its most serious OMP needs. With no State funding for OMP in 2008-09 due to the State's fiscal crisis, UC redirected $9.7 million of permanent savings from restructuring at the Office of the President, and redirected one-time savings from debt restructuring to provide $11.2 million in 2009-10 and $19.5 million in 2010-11 to cover maintenance of new space.

The University is now operating about 4 million square feet of core program space that is eligible for State support but never funded by the State, representing approximately $40 million of support that the State is not providing.

CAPITAL RENEWAL AND DEFERRED MAINTENANCE

In addition to requiring funding for new space and building and grounds maintenance, the University faces growing costs to renew its existing buildings and to support infrastructure. This annual investment is needed for the normal replacement and renewal of building systems and components. Replacement and renewal cycles may occur several times during the life of a building.

Over the next decade, many of the heating, ventilation, and air conditioning (HVAC), elevator and conveying, plumbing, and electrical systems in UC's buildings will reach the end of their useful life. As a result, the University's annual capital renewal needs are projected to increase significantly over the next decade, as shown in Display XIV-4. Campus infrastructure, including utility generation and distribution systems, roads, bridges, hardscape, and seawater systems, also requires substantial ongoing investment in renewal. Regular funding for the systematic replacement of building systems and campus infrastructure is currently not included in either the University's operating or capital budgets, though such funding is proposed in the University's ten-year capital financial plan.

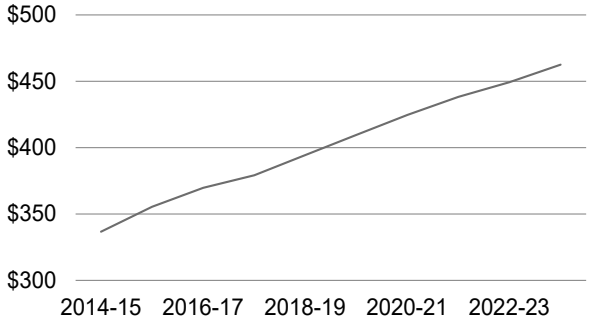
Estimates of funding needs for capital renewal and deferred maintenance are based on the Facilities Infrastructure Renewal Model (FIRM) developed by the University in 1998, which includes an inventory of all State-maintained facilities at each campus, detailing infrastructure and buildings systems that need to be renewed on a predictable basis between 15 and 50 years, such as roofs, fire alarm systems, heating and ventilation systems, central plant chillers, and underground utility cabling. The model assumes standard life cycles and costs for renewing each system, and from these elements develops a profile for each building and infrastructure system, projecting the renewal date and cost over a 50-year period. The model also estimates the backlog of deferred renewal by tracking those systems that have deteriorated to the point that they need major repair, replacement, or renewal to stop deterioration and reverse increases in maintenance costs required to keep the systems operating.

In the long term, failure to invest adequately in capital renewal and ongoing maintenance presents growing risks to the University, ranging from disruptions of programs that may be caused by a breakdown of a building's mechanical system or a facility's underperformance, to the impact of a catastrophic failure of a mission-critical system, or utility distribution system that could shut down an entire campus. The growing risk of catastrophic failure was recently highlighted by the rupture of a city water distribution line on the Los Angeles campus in 2015 and a power failure at the Berkeley campus in 2013 that forced the closure of a third of the campus facilities.

Given the age and current condition of University facilities and infrastructure, there is a critical need at the campus and system levels to make sound, data-driven capital renewal decisions based upon accurate information that identifies, prioritizes, and quantifies renewal and deferred maintenance needs and their associated risk.

The current FIRM only includes State-funded buildings, only captures limited life cycle data, and only provides a high level inventory of infrastructure assets. Based on FIRM and other modeling efforts, the University currently estimates that its total deferred maintenance backlog cost reaches into the billions for State and non-State eligible space.

Display XIV-4: 10-Year Projected Annual Capital Renewal Needs (5-year Smoothed Average, Dollars in Millions)



Between 2014-15 and 2023-24, the University's annual capital renewal needs for building and infrastructure assets are projected to increase significantly. This does not include a considerable portion of the ongoing capital renewal need that has been deferred because of the lack of funding.

However, in order to support sound capital renewal and deferred maintenance decisions, the University must establish a process/system that can identify, quantify, estimate, prioritize, and track capital renewal and deferred maintenance needs. To this end the University is implementing a new comprehensive Integrated Capital Asset Management Program (ICAMP) that will fully replace the current FIRM program.

ICAMP will allow the University to better understand the consequences of its decisions and thus reduce risk. The new ICAMP will perform initial real-time condition assessments on all University-related buildings as well as more detailed tracking of all infrastructure assets. The ICAMP process will identify and estimate facility-related condition-based deferred maintenance, reporting by using industry standard Uniformat II asset classification specifications and RS Means construction project cost estimation data. All information will be maintained in the ICAMP program's state-of-the-art software, which will provide consistent and reliable information. The process will include a detailed inventory of all major building and infrastructure systems and components as well as an overall assessment of each.

PURCHASED ENERGY UTILITIES

Since the energy crisis of 2001, the volatility of electricity and natural gas prices has impacted the ability of campuses to manage overall OMP costs.

Key Cost Drivers and Market Activity

Even with the closing and subsequent slow reopening of SoCalGas's Aliso Canyon natural gas storage facility, the natural gas commodity forward curve continues to be at general historic lows (trending below $4/MMBtu).

Due to the influx of electricity from new solar projects in California resulting from California's renewable energy standard, wholesale electricity markets are experiencing changes to hourly electricity prices. Prices for wholesale electricity during periods of solar generation can be quite low, and prices for electricity are higher in the three hours preceding and following each day's solar production. This wholesale price pattern is one driver leading some major California investor-owned utilities to propose shifts in their peak time-of-use periods to the late afternoon and evening when solar output is low and declining. It is unclear if suggested changes to utility time-of-use period and prices will be successful at the CPUC and if such changes would affect current customers with solar panels on their property or customers contemplating obtaining on-site solar energy.

Cap and Trade

In 2013, California began a cap and trade program after the approval of AB 32, the Global Warming Solutions Act of 2006. Under the cap and trade program, the State established an overall limit on greenhouse gas (GHG) emissions through 2020. Facilities subject to Air Resources Board (ARB) jurisdiction must obtain permits (California Carbon Allowances) equivalent to their GHG emissions through State run auctions or secondary markets.

Six UC campuses are obligated to participate in the cap and trade program, as their emissions exceed 25,000 metric tons of carbon-dioxide-equivalent per year (the ARB threshold). In April 2014, the California Air Resources Board approved amendments to the cap and trade regulations, to allocate through 2020 a large portion of the allowances the University needs to comply with the cap and trade regulations. Three campuses, in addition to the six covered campuses, voluntarily opted into the cap and trade program to be able to receive the allowance disbursement. By opting in, these campuses will avoid a large portion of the costs associated with cap and trade should their emission levels increase over time.

In July 2017, legislation to continue California's cap and trade program through 2030 was signed into law (Assembly Bill 398). Among other items, when implemented by the California Air Resources Board, the law should extend California's cap-and-trade program; lower California's cap on GHG emissions to 40% below the 1990 level by December 31, 2030; continue transitional assistance to the

PURCHASED UTILITY TERMINOLOGY

Biogas: methane produced from the decomposition of organic matter, sourced from the anaerobic digestion of agricultural waste, landfills, and wastewater treatment facilities.

Carbon allowances: permits used in the State's cap and trade program. Each allowance must be surrendered by obligated entities for every metric ton of carbon equivalent emissions.

Carbon (equivalent) emissions: the emission of carbon dioxide into the atmosphere, which is a major contributor to global warming.

Co-generation: on-campus sequential generation of electricity and steam for operations.

Commodity pricing/costs: the price paid for the generation component of electricity, excluding transmission and distribution services provided by the utilities.

Direct access: procurement by a retail customer of electric commodity from an Electric Service Provider. The electric commodity is delivered by the local utility.

Electricity deliveries: the role of a distribution utility in furnishing the infrastructure to deliver third party generated energy.

Electric Service Provider (ESP): a non-utility entity that offers electric service to customers within the service territory of an electric utility.

Fracking: oil and gas extraction via the fracturing of rock by a pressurized liquid.

Renewable energy content: the ratio of renewable energy in the energy commodity (e.g., electricity).

Statewide Energy Partnership (SEP): a partnership between the University, and the four California investor-owned utilities (e.g., PG&E) to incentivize energy efficiency projects.

University of California (whereby we receive carbon allowances as described above); and raise the floor price on auctioned allowances. The overall effect on UC is positive: the University will continue to receive transition assistance; however, should UC enter the carbon market to obtain California Carbon Allowances, the University may see higher prices.

Carbon Neutrality Initiative

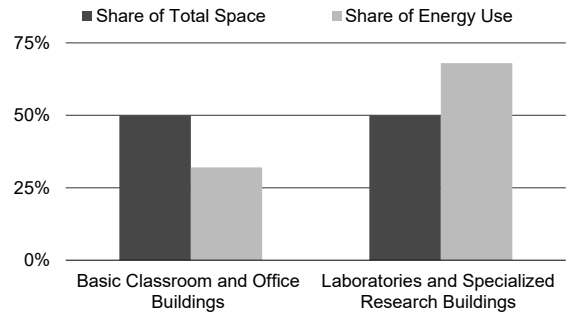
At the November 2013 Regents meeting, President Napolitano announced as part of her suite of initiatives that the University would be the first major research university to achieve climate neutrality, setting a target date of 2025. To reach this goal of becoming carbon neutral in operations by 2025, the University needs to transform the profile of its energy sources. The University is considering five strategies to meet its carbon neutrality goals: Campus Energy Efficiency, On-campus Renewable Energy, Wholesale Electricity, Biogas Procurement, and Procurement and Management of Environmental Attributes. In the long term, each campus will address central plant infrastructure from a carbon neutrality perspective. Prior to that, the University will likely heavily emphasize energy efficiency and obtain environmental attributes in the form of renewable energy credits, biogas, and/or offsets that, when netted against our carbon footprint, create carbon neutrality.

Strategic Efforts to Manage Purchased Energy Utility Costs and Reduce Carbon Emissions

The University has continued its efforts to obtain favorable commodity contracts while enacting a long-term strategy for energy procurement that will reduce costs and advance efforts to meet the goal of becoming carbon neutral in operations by 2025.

The University has made remarkable progress in reversing the growth of greenhouse gas emissions. Campuses continue to implement energy efficiency projects that will create additional energy demand reduction and cost savings, while supporting their progress toward carbon neutrality. It is important to note that from an energy intensity perspective, UC is unique among other California higher education systems due to the significant number of laboratory, healthcare, and other specialized research facilities in the system. Such heavily regulated buildings with complex mechanical systems and extended hours of operation account for nearly two-thirds of the energy use in the University's State-eligible space, as shown in Display XIV-5.

Display XIV-5: Energy Use by Building Type



Laboratories and specialized research facilities consume on average more than two times the energy used by campus classroom and office buildings.

Energy Efficiency

The University continues to expand its efforts on energy efficiency projects and develop small- to medium-scale renewable energy sources at all campuses.

In addition to commodity rates, purchased utilities costs are affected by consumption levels. Without additional State funding, UC has sought to mitigate rising purchased utilities costs and reduce GHG emissions by moving aggressively to manage overall energy consumption.

UC continues to implement stringent energy conservation measures, undertake capital improvements to maximize the efficiency of new buildings, and invest in energy efficiency projects. These efforts include installing energy monitoring and metering systems, retrofitting existing facilities to upgrade temperature controls, implementing efficient lighting systems, and optimizing heating, ventilation, and air conditioning (HVAC) systems.

Many of the University's energy efficiency projects have been subsidized by the state's investor-owned utilities under the auspices of the Statewide Energy Partnership (SEP). Results through August 2017 indicate that the partnership completed more than 900 energy efficiency projects that generated $85 million in incentive payments from the utilities to offset project costs. By the end of 2017, completed projects are projected to deliver over

$224 million in cumulative avoided costs to the participating campuses.

Electricity Procurement

The University of California began directly supplying electricity to many of its campuses and medical centers on January 1, 2015 as part of the initiative to become the first research university to achieve carbon neutrality by 2025. The long term goal is to supply campuses with cost-effective, carbon-free electricity. UC is able to be the supplier through California's Direct-Access rules. Direct access is an optional service that allows retail customers to purchase electric supplies and additional energy services directly from electric service providers. Roughly 25% of UC's energy comes from direct access service. The remaining electric supply comes from traditional utility service, municipal utilities, or federal supply.

As part of UC's effort to actively manage energy cost, UC signed two Power Purchase Agreements (PPAs) with a renewable developer focused on solar photovoltaic technology. The two agreements secure solar energy for UC for 25 years, and allow UC to supply approximately 200 gigawatt-hours per year (GWh/year) of solar energy to California's electrical grid. The first project commenced delivery of renewable energy in the fall of 2016, and the second project commenced operation in the summer of 2017.

Display XIV-6: History of Programmatic Funding for OMP, Capital Renewal, and Deferred Maintenance

Pre-1994-95	The State provided nearly $20 million annually for deferred maintenance.
1994-95 to 1997-98	The State provided $8 to $25 million annually.
1998-99 to 2001-02	The State provided $7.1 million each year. UC invested $289 million over four years for capital renewal and deferred maintenance.
1999-00	The Partnership Agreement with Governor Davis called for annual increases in OMP as part of a 1% increase to UC's State support. $8.5 million was provided for OMP in 1999-00 and 2000-01.
2002-03	The State eliminated the remaining $7.1 million in permanent deferred maintenance funding.
2002	UC allowed campuses to pledge a portion of their UC General Fund income to finance urgent capital renewal and deferred maintenance work. Only some campuses had sufficient revenues to participate. Bonds financed $221.1 million for high priority capital renewal and deferred maintenance projects
2002-03 to 2004-05	The State provided no funding for new space. UC redirected $7 million from existing resources to address critical OMP needs.
2005-06	The State provided $16 million for new space and to partially backfill unfunded space from the previous two years.
2006-07 to 2007-08	The marginal cost of instruction calculation included OMP costs for the first time. The State provided $17.5 million in 2006-07 and 2007-08 for new space.
2008-09 to 2010-11	UC redirected its own resources to OMP costs, totaling $40.4 million over three years.
2010-11	The State budget provided $6.4 million in OMP from enrollment growth-related funding.
2008 to 2012	UC proposed to implement a capital renewal program to be funded with State general obligation bonds. With no bonds being placed on the ballot in 2008 and 2012, the program has not been implemented.
2014-15	The final budget act for 2014-15 included $50 million in one-time funding for deferred maintenance provided property tax revenue receipts exceeded a specified threshold. That threshold was not met, so this funding was not provided in 2014-15.
2015-16	The State provided $25 million in one-time deferred maintenance funding to the University.
2016-17	The State provided $35 million in one-time deferred maintenance funding to the University.
2017-18	The State provided no one-time funding to the University for deferred maintenance.

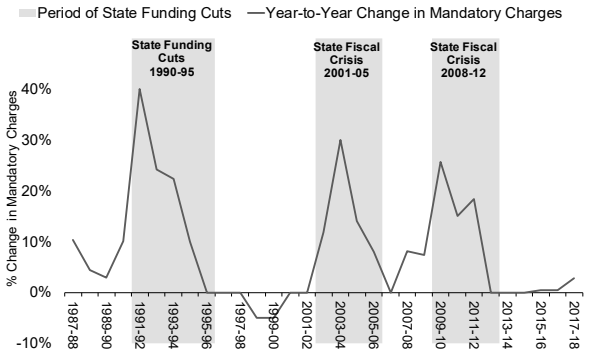
Student Tuition and Fees

The University's reliance on tuition and fee revenue to support its core educational programs has grown over time in response to progressive and sustained shortfalls in State support. While the State has worked diligently to restore funding to the University, State funding has not kept pace with inflation and has left the University with fewer dollars per student than in 1990. In fact, since 1990-91, the State's inflation-adjusted contribution per UC student has declined by over 60%. Consequently, the composition of core funding has changed, with a greater share derived from student tuition and fees (including those covered by Cal Grants, discussed further in the *Student Financial Aid* chapter) and UC General Funds and a smaller share from direct State support of the University's budget. Student tuition and fees (including those covered by Cal Grants) now account for approximately half of the cost of education, as noted in the *Sources of University Funds* chapter of this document. In 2016-17, tuition and fees provided approximately $4.46 billion[1] to supplement State funding and other sources that help support basic operations.

Although tuition and fee levels rose to help backfill reductions in State funding, they have not made up the entire shortfall. Trends in State support for the University have affected both the magnitude and the volatility of tuition increases. As shown in Display XV-1, annual changes in mandatory systemwide charges have varied widely over the past three decades and align closely with economic downturns. Students attending UC during economic slowdowns have been asked to pay more while students attending in more stable economic times have had their tuition and fees held flat. The variability has created tremendous long-range planning challenges for campuses and the University and unpredictable Tuition costs for students and their families.

Within this context, it is important to note that UC's average tuition and fees for state residents remain low relative to the

Display XV-1: Year-to-Year Percentage Change in Mandatory Charges Over the Past Thirty Years (Not Adjusted for Inflation)



UC's tuition levels have been subject to chronic volatility, with increases closely mirroring the State's fiscal condition. Tuition has increased to offset State budget cuts.

Display XV-2: 2017-18 University of California and Public Comparison Institution Fees

	Undergraduate		Graduate	
	Resident	Nonresident	Resident	Nonresident
Public Comparison Institutions				
SUNY Buffalo	$9,828	$27,338	$13,382	$24,724
Illinois				
Lowest	$15,918	$30,544	$16,542	$31,034
Highest	$20,922	$42,178		
Average	$18,420	$36,361		
Michigan				
Lowest	$14,826	$47,476	$22,696	$45,484
Highest	$20,446	$56,772		
Average	$17,636	$52,124		
Virginia				
Lowest	$13,982	$46,554	$20,962	$32,822
Highest	$20,192	$51,796		
Average	$17,087	$49,175		
UC	$13,964	$40,569	$13,514	$28,616

Note: Comparison institution figures include tuition and required fees. UC figures include campus-based fees, mandatory systemwide charges, and Nonresident Supplemental Tuition for nonresident students. Waivable health insurance fees are not included. Undergraduate figures for Illinois, Michigan, and Virginia represent the average of the highest and lowest rates at each school. Actual rates may vary by major and/or year in school.

[1] This amount includes revenue from mandatory systemwide charges, Professional Degree Supplemental Tuition, and Nonresident Supplemental Tuition, but excludes fees charged at the campus level (discussed later in the chapter) and UC Extension fees.

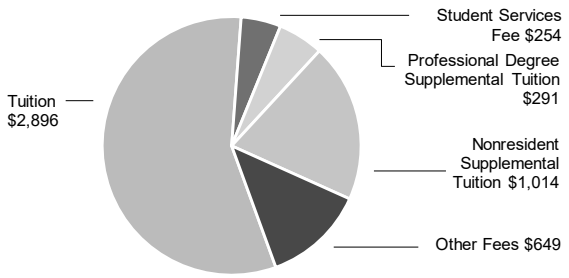
amounts charged by most of the University's public comparison institutions, while the University's nonresident surcharges remain competitive, as shown in Display XV-2. Furthermore, as described in the *Student Financial Aid* chapter, more than one-half of all UC resident undergraduate students have their tuition and fees fully covered by grants and scholarships. This assistance has allowed the University to remain financially accessible to students across socioeconomic levels despite rising costs, as evidenced by the large number of UC undergraduates who qualify for federal Pell Grants (which are reserved for students with the fewest financial resources) and the comparatively low student loan indebtedness of UC students upon graduation.

Display XV-3: 2017-18 Student Tuition and Fee Levels

Student Services Fee	$1,128
Tuition	$11,502
Professional Degree Supplemental Tuition	$4,410-$44,624
Nonresident Supplemental Tuition	
Undergraduate	$28,014
Graduate Academic	$15,102
Graduate Professional	$12,245
Campus-based Fees*	
Undergraduate	$631-$1,820
Graduate	$212-$1,540

* Waivable health insurance not included.

Display XV-4: 2016-17 Student Tuition and Fee Revenue for Operations (Dollars in Millions) (Total: $4.46 Billion)



In 2016-17, student tuition and fees generated $4.46 billion to support the University's core operating budget and student financial aid. Campus-based/other fees totaling $649 million support specific programs outside the core budget, such as student government and transportation.

TUITION AND FEES IN THE BUDGET FRAMEWORK WITH THE GOVERNOR

In 2015, the University and the Governor agreed to a long-term funding framework that renews State investment through 2018-19 and provides increased financial stability and a foundation from which to plan. Under the framework, Tuition remained unchanged through 2016-17, which was the sixth consecutive year of no Tuition increases. The framework calls for modest and predictable Tuition increases after 2016-17, with increases beginning in 2017-18 pegged generally to the rate of inflation. The Student Services Fee will annually increase by five percent from 2015-16 through 2019-20, with funds from half of the increase, net of financial aid, directed to support student mental health programs. The framework also anticipates moderate increases in undergraduate Nonresident Supplemental Tuition and Professional Degree Supplemental Tuition (PDST), with the exception that PDST levels for the University's four law schools are to remain at current levels through 2018-19.

TYPES OF CHARGES

Students[2] at the University of California pay the following different types of charges:

- **Tuition**, a mandatory systemwide charge assessed to all registered students providing general support for UC's budget;
- The **Student Services Fee**, another mandatory systemwide charge assessed to all registered students that supports services benefiting students such as individual and group tutorial services in writing, mathematics, and study skills;
- **Professional Degree Supplemental Tuition**, paid by students enrolled in a number of graduate professional degree programs to support instruction and specifically to sustain and enhance program quality;
- **Nonresident Supplemental Tuition**, charged to nonresident students in addition to mandatory systemwide charges and any applicable Professional Degree Supplemental Tuition charges, in lieu of State support for their cost of education; and

[2] Although included in enrollment counts as students, medical and other health sciences residents are not assessed student charges.

- **Fees Charged at the Campus Level**, which vary across campuses and by student level, and fund a variety of student-related expenses not supported by other fees.

Display XV-3 lists the level of each charge in 2017-18. Their respective contributions to the University's core operating budget and financial aid in 2016-17 are shown in Display XV-4. Each type of charge is described in greater detail below.

Tuition

Established as the Educational Fee in 1970 for capital outlay purposes, Tuition is charged to all registered students, and provides general support for the University's operating budget, including costs related to general campus and health sciences faculty and instructional support, libraries and other academic support, student services, institutional support, and operation and maintenance of plant. Tuition revenue is also used to provide student financial support. In 2016-17, Tuition generated $2.9 billion for operations.

The Regents set Tuition levels annually in accordance with the 1994 Student Tuition and Fee Policy, which directs the President of the University to recommend annual Tuition levels to the Regents, taking five factors into consideration:

- the resources necessary to maintain access under the Master Plan, to sustain academic quality, and to achieve the University's overall mission;
- the full cost of attending the University;
- the amount of support available from different sources to assist needy students;
- overall State General Fund support for the University; and
- the full cost of attendance at comparable public institutions.

Under the 1994 Student Tuition and Fee Policy, Tuition revenue is limited to the general support of UC's operating budget and cannot be used for capital expenditures. As noted above, Tuition increases have been needed primarily to offset reductions in State support.

Under the long-term funding framework, Tuition may increase in 2018-19 at a rate pegged to inflation, regardless of student level, residency, and program. Under the 2018-19 budget plan, the temporary Tuition surcharge of $60 attributable to the payment of damages from the *Luquetta* lawsuit (discussed in more detail in the last section of the chapter) would be eliminated, and Tuition would be adjusted by $348 (bringing the total level to $11,790), for a net adjustment of $288. The revenue from the Tuition adjustment will be used to help support the operating budget and a portion will be set aside for UC's financial aid – more than fully subsidizing the adjustment assessed to low-income students. The adjustment will be presented to the Regents for approval in January 2018.

Student Services Fee

The Student Services Fee is also charged to all registered students. Revenue from the fee funds services and programs that are important to students but which are not part of the University's programs of instruction, research, or public service. In 2016-17, $254 million in Student Services Fee revenue was collected, a majority of which was spent on student services, including counseling and career guidance, cultural and social activities, and student health services. Student Services Fee revenue is also used for capital improvements that provide extracurricular benefits for students. As with Tuition, the Regents set Student Services Fee levels annually in accordance with the 1994 Student Tuition and Fee Policy. In November 2014, the Regents approved a five percent annual increase in the Student Services Fee through 2019-20, with revenue from half of the increase, less return-to-aid, directed to support student mental health programs (discussed in more detail in the *Student Services* chapter of this document). In 2017-18, the Student Services Fee is $1,128 for all students. Under the 2018-19 budget plan, the Student Services Fee would increase by 4.8%, or $54.

Chancellors are authorized to determine specific allocations of Student Services Fee income on their campuses, within applicable University policies and guidelines. Each campus has a Student Fee Advisory Committee, the membership of which is at least 50% students, to advise the chancellor.

Professional Degree Supplemental Tuition

Professional Degree Supplemental Tuition (formerly known as the Fee for Students in Selected Professional Schools) was established in 1994-95 to allow UC's professional schools to offset reductions in State support and maintain program quality. Assessed in addition to mandatory student charges and, if applicable, Nonresident

Supplemental Tuition, Professional Degree Supplemental Tuition (PDST) levels during 2017-18 range from $4,410 to $44,624 depending on the program, campus, and student residency. See Appendix Display 15 for a list of programs that assess PDST and their accompanying PDST levels in 2017-18. In 2016-17, these charges generated $291 million for operations.

Historically, many of UC's professional schools have held a place of prominence in the nation, promising an exceptional education for a reasonable price. Budget cuts have depleted the resources available to the professional schools and, consequently, they face reduced capacity to recruit and retain excellent faculty, provide an outstanding curriculum, and attract high caliber students. New revenue generated from PDST increases has been critical to attract high-caliber faculty and students and to regain and maintain excellence despite budget cuts.

The Regents' PDST Policy[3] specifies that these charges will be approved by the Regents in the context of multi-year plans that advance the mission and academic plans of each graduate professional degree program. Multi-year planning with regard to PDST is a vital and fiscally prudent strategy that:

- provides a more stable planning environment for professional schools;
- allows the schools to consider and act on long-term investment needs such as new faculty positions, facility needs, and financial aid program development;
- provides each program with the opportunity to comprehensively analyze its program needs, the costs to address those needs, and the revenue available to support those needs;
- allows each program to examine its competitiveness with other institutions on a number of measures, including the "sticker price" of attendance, financial aid programs and their impact on the net cost to students, and other indicators of national competitiveness of the program;
- helps inform decision making by clearly identifying each degree program's goals and objectives and the steps that are needed to achieve them; and
- enables each program to consult with students and faculty about long-term plans and tuition levels.

The Regents' policy also includes specific conditions for ensuring that the University's commitment to access, affordability, diversity, and students' public service career decisions are not adversely affected by increases in fees for professional degree students.

At their March 2017 meeting, the Regents established PDST levels for two new programs effective beginning in the 2017-18 academic year. Also effective academic year 2017-18, the President approved increases up to 5% for existing PDST programs, consistent with the authority granted by the Regents at their November 2014 meeting, which authorized the President to approve increases up to 5% for existing programs for academic years 2015-16 through 2019-20.

Also at their March 2017 meeting, the Regents amended the PDST policy, which will be phased in across graduate professional degree programs that assess PDST starting in academic year 2018-19. Elements of the amended policy that differ from the previous policy include: Regental approval of multi-year plans (as opposed to annual PDST proposals); elimination of the provision requiring programs to ensure that the total charges for a California resident student remain at or below the average total in-state charges for comparable public programs outside UC; an emphasis on substantive consultation with students and other stakeholders; a more complete assessment of the graduate professional degree program's use of PDST funds and performance during the current multi-year plan with respect to excellence, access, inclusion, and affordability; and a clarified expectation that programs proposing to establish or adjust PDST shall provide compelling justification, based on demonstrated programmatic needs, for the proposed PDST levels. All multi-year plans will come under the purview of the amended policy by academic year 2020-21.

The amended policy did not directly rescind the authority delegated to the President by the Regents in November 2014 to approve PDST increases up to 5% through 2019-20. The President is authorized to approve such increases for programs with multi-year plans that have not expired. Accordingly, the President will review proposed

[3] http://regents.universityofcalifornia.edu/governance/ policies/3103.html.

increases of up to 5% in PDST programs for 2018-19, with the exception of the University's four law programs. As mentioned earlier, under the framework, the PDST levels of these law programs are to remain unchanged through 2018-19. PDST increases approved by the President will be reported to the Regents. Proposals for new PDSTs and from existing PDST programs whose multi-year plans have expired will be brought to the Regents for approval under the amended PDST policy.

Nonresident Supplemental Tuition

In addition to all other applicable tuition and fees, UC students who do not qualify as California residents are required to pay Nonresident Supplemental Tuition, consistent with the State's policy not to provide support for nonresident students. Enrollment of nonresident students, including both undergraduate and graduate international students and domestic students from other states, generated $1 billion in 2016-17.

The California Education Code provides direction to UC about setting Nonresident Supplemental Tuition levels. Nonresident Supplemental Tuition levels in 2017-18 vary by student level and program: $28,014 for undergraduate students, $15,102 for graduate academic students, and $12,245 for graduate professional students. Consistent with the budget framework agreed upon with the Governor, the proposed increase of 3.5%, or $978 ($28,992 total), of Nonresident Supplemental Tuition levels in 2018-19 for undergraduates is subject to approval by the Regents at their January 2018 meeting. Projected undergraduate Nonresident Supplemental Tuition revenue will total over $1.2 billion in 2018-19.

Undergraduates who enroll as nonresidents typically pay Nonresident Supplemental Tuition every term that they attend UC; unless a student's parents move to California or the student is deemed financially independent (a very high standard that is difficult to meet), the student is unlikely to satisfy the University's undergraduate residency requirements. Domestic graduate students are generally presumed to be financially independent and typically establish residency after one year. International students cannot establish residency and hence pay Nonresident Supplemental Tuition every term (although graduate academic students are exempt from this charge for up to three years once they advance to candidacy).

STATE LAW REGARDING NONRESIDENT TUITION

Section 68052 of the California Education Code directs California's public institutions of higher education to acknowledge the following when establishing nonresident student tuition levels:

- nonresident tuition methodologies used by California's public postsecondary education segments should consider: 1) the total nonresident charges imposed by each of their public comparison institutions, and 2) the full average cost of instruction;
- nonresident tuition plus required fees should not fall below the marginal cost of instruction;
- increases in the level of nonresident tuition should be gradual, moderate, and predictable; and
- in the event that State revenues and expenditures are substantially imbalanced due to factors unforeseen by the Governor and the Legislature, nonresident tuition will not be subject to the law's provisions.

In recent years, Nonresident Supplemental Tuition paid by undergraduate students and students in graduate professional degree programs has provided funds to backfill a portion of the shortfall in State funding. The financial impact of Nonresident Supplemental Tuition from academic graduate students is less significant because the University must effectively cover that cost for academic doctoral students in order to attract the best students from a global talent pool. Indeed, the faculty has regularly expressed interest in eliminating this charge for these students. State policy and the University's own budgetary needs constrain the extent to which the University can reduce Nonresident Supplemental Tuition levels. By forgoing increases in graduate Nonresident Supplemental Tuition for several years, the University has effectively reduced, in constant dollars, the funding needed for recruitment packages required to attract talented graduate students to the University.

Fees Charged at the Campus Level

Campuses may also charge fees for specific needs related to campus life and safety or instruction. Among the largest fee types assessed at the campus level include campus-based fees and course materials and services fees.

Campus-based Fees. Campus-based fees cover a variety of student-related expenses that are not supported by Tuition or the Student Services Fee. These fees help fund programs such as student government; the construction, renovation, and repair of sports and recreational facilities; and other programs and activities such as transit.[4] As shown in Display XV-5, the number and dollar amounts of campus-based fees vary across campuses and between undergraduate and graduate students.

Campus-based fees for 2017-18 range from $212 at San Francisco (graduates) to $1,820 at Santa Barbara (undergraduates); in 2017-18, average campus-based fees are $1,334 for undergraduates and $884 for graduates.[5] Generally, students must vote to establish or increase campus-based fees, but these fees also can be set by chancellors (with the concurrence of the Regents) if a fee is necessary to help ensure the safety of students (e.g., to pay for the seismic retrofit of a building funded by student fees). In recent years, a return-to-aid component has been built into newly established campus-based fees. Changes to campus-based fee levels for 2018-19 will not be known until student elections have been held in Spring 2018.

Display XV-5: 2017-18 Campus-based Fee Levels

Campus	Undergraduate	Graduate
Berkeley	$1,540	$1,540
Davis	$1,789	$977
Irvine	$1,107	$770
Los Angeles	$631	$373
Merced	$968	$637
Riverside	$1,287	$1,045
San Diego	$1,388	$816
San Francisco	N/A	$212
Santa Barbara	$1,821	$939
Santa Cruz	$1,390	$1,207
Average	$1,334	$884

Course Materials and Services Fees. Course Materials and Services Fees cover costs specific to a course, such as materials used in a studio art class, travel costs for an archeological dig, or laboratory supplies related to a specific course. The fees are set by the chancellors and may not exceed the actual cost of the materials and services provided for the course. In 2016-17, approximately $31 million in Course Materials and Services Fees revenue was collected at UC's 10 campuses.

HISTORY OF STUDENT FEES

The University first assessed student fees in the 1920s with the establishment of an Incidental Fee. In 1960, the California Master Plan for Higher Education affirmed that UC should remain tuition-free, but allowed that fees could be charged for costs not related to instruction. In the late 1960s, the Incidental Fee was renamed the Registration Fee, and revenue was used to support student services and financial aid. In 2010, the Registration Fee was renamed the Student Services Fee.

The Educational Fee was established in 1970-71 and was originally intended to fund capital outlay. However, each year a greater proportion of the Educational Fee was allocated for student financial aid. Consequently, in the late 1970s, the Regents stipulated that Educational Fee income was to be used exclusively for student financial aid and related programs. In 1981, the Regents extended the Educational Fee's use to include basic student services, which had lost State General Fund support.

In 1994, the University of California Student Fee Policy established that the Educational Fee may be used for general support of the University's operating budget. In addition, a goal of the policy is to maintain the affordability of a high quality educational experience at the University for low- and middle-income students. In 2011, the Educational Fee was renamed Tuition.

Over time, UC's tuition and fee levels have largely tracked the State's economy. In more economically stable years, such as during the mid-1980s and the late 1990s, charges were held steady or were reduced. In years of fiscal crisis – during the early 1990s and during the early 2000s, for example – tuition and fees increased dramatically in response to significant reductions in State funding, although these increases only partially compensated for the

[4] The University's Policy on Compulsory Campus-Based Student Fees is available at http://policy.ucop.edu/doc/2710528/PACAOS-80.
[5] Campus-based fee figures are weighted by enrollment and do not include waivable health insurance premiums.

RECENT HISTORY OF UNIVERSITY OF CALIFORNIA STUDENT TUITION AND FEE LEVELS

2006-07	The State provided supplementary funding to avoid student tuition and fee increases.
2007-08 to 2008-09	Mandatory systemwide charges increased by 8% in 2007-08 and 7% in 2008-09. Professional Degree Supplemental Tuition increased by 7-12% in 2007-08 and 5-20% in 2008-09.
2009-10 to 2010-11	In May 2009, the Regents approved an increase of 9.3% in mandatory student charges for all students for 2009-10. Due to budget cuts representing nearly 20% of State support, in November 2009 the Regents approved mid-year increases in mandatory charges of 15% for undergraduate and graduate professional students and 2.6% for graduate academic students. For 2010-11, the Regents approved additional 15% increases in mandatory student charges for all students. Professional Degree Supplemental Tuition increased from 0-25% in 2009-10 and from 0-30% in 2010-11.
2011-12	In November 2010, the Regents approved an 8% increase in mandatory systemwide charges for 2011-12. Professional Degree Supplemental Tuition increased by 0-31%. Due to reductions in State support for UC, mandatory systemwide charges for 2011-12 increased by an additional 9.6% in July 2011.
2012-13	Because the 2012-13 State budget called for UC to avoid a Tuition increase, mandatory systemwide charges did not increase in Fall 2012. Professional Degree Supplemental Tuition increased by 0-35%.
2013-14	Due to the Governor's proposed multi-year plan, mandatory systemwide charges did not increase in Fall 2013. Professional Degree Supplemental Tuition increased by 8% for UC's Nursing programs and was held flat for 53 programs.
2014-15	Mandatory systemwide charges did not increase in Fall 2014. The President announced the University's Tuition and Financial Aid Stabilization Plan to bring predictability to UC's systemwide charges.
2015-16 to 2018-19	Under the long-term funding framework, Tuition did not increase in 2015-16 or 2016-17, extending the Tuition freeze to six consecutive years. Tuition increases in 2017-18 and 2018-19 will generally be pegged to inflation. In November 2014, the Regents approved annual increases of 5% to the Student Services Fee through 2019-20. Professional Degree Supplemental Tuition and undergraduate Nonresident Supplemental Tuition are expected to increase moderately during this period.

reductions in State support. The Appendices to this document include historical tuition and fee levels for UC students by level and residency.

KASHMIRI AND *LUQUETTA* LAWSUITS

Two lawsuits against the University, *Kashmiri v. Regents* and *Luquetta v. Regents*, have affected Tuition levels for all students.

The *Kashmiri* lawsuit was filed against the University in 2003 by students who had enrolled in UC's professional degree programs prior to December 16, 2002. The class action suit alleged that the increases in Professional Degree Supplemental Tuition that were approved by the Regents for Spring 2003 (and for all subsequent years) violated a contract between the University and these students that their Professional Degree Supplemental Tuition levels would not increase during their enrollment. The trial court entered an order granting a preliminary injunction against the University, prohibiting collection of the Professional Degree Supplemental Tuition increases approved by the Regents for 2004-05 and 2005-06 from students affected by the lawsuit. As a result, by the end of 2012-13, the University had lost $24.1 million in uncollected Professional Degree Supplemental Tuition revenue.

In March 2006, the trial court entered a $33.8 million judgment in favor of plaintiffs. After the University exhausted its appeals, the trial court finalized the judgment in January 2008. A temporary Tuition surcharge of $60 was assessed to all students for several years until the lost revenue was fully recovered and the *Kashmiri* judgment was fully paid off, which occurred in 2012-13.

The *Luquetta* lawsuit was filed in 2005 and extended the Professional Degree Supplemental Tuition claim to professional students who enrolled during the 2003-04 academic year. In April 2010, the trial court entered judgment in favor of the plaintiffs in the amount of $39.4 million. The University unsuccessfully appealed the court's decision, and the judgment was made final in July 2012. At the March 2013 Regents meeting, the Board approved an extension of the temporary Tuition surcharge of $60 to cover the *Luquetta* judgment. This surcharge is incorporated into the total charges all students must pay to

register. Due to the accrual of post-judgment interest, losses associated with the *Luquetta* case total approximately $50 million. The University expects that the Luquetta judgment will be fully paid off by the end of academic year 2018-19. Accordingly, with Regental approval, the University plans to eliminate the temporary Surcharge effective fall 2018. Any remaining damages from the *Luquetta* lawsuit (estimated to be about $1 million) will be paid from the revenue generated by the 2018-19 Tuition adjustment.

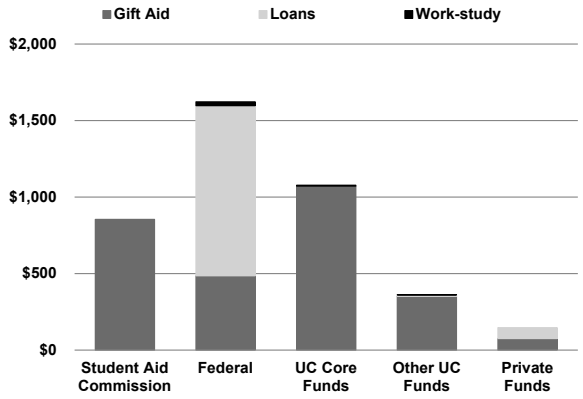
Student Financial Aid

Guided by the financial aid policy adopted by the Regents in 1994, the University's financial aid programs are closely linked to the University's goals of expanding student access and helping the state meet its professional workforce needs.[1] In 2015-16 (the most recent year for which information is available), UC students received $4.1 billion in financial aid, of which $1.4 billion (35%) was funded by UC. Maintaining robust undergraduate and graduate aid programs remains among the University's highest budget priorities.

At the undergraduate level, the goal of UC's financial aid program is to ensure that the University remains financially accessible to all eligible students. During the 2015-16 academic year, 57% of all California resident undergraduates received grant or scholarship assistance that fully covered their mandatory systemwide charges. Among UC undergraduates (both resident and nonresident), 64% received grant/scholarship aid averaging $16,930 per recipient. The University of California is recognized as a national leader in enrolling an economically diverse pool of undergraduate students. In 2014-15, 41% of UC undergraduates were low-income Pell Grant recipients – more than at any other comparably selective research institution. In addition, 48% of UC's 2015-16 graduating undergraduates had no student loan debt. The average debt among the other 52% who borrowed was $19,231 ($20,900 for students who were admitted as freshmen), well below the national average of $30,100.

At the graduate level, the Regents' financial aid policy calls upon the University to attract a diverse pool of highly qualified students by providing a competitive level of support relative to other institutions. Competitive support is key because graduate student enrollment is critical both to the University's research enterprise and to helping the state meet its academic and professional workforce needs. In 2015-16, 64% of graduate students received grant or fellowship support averaging about $18,607 per recipient.

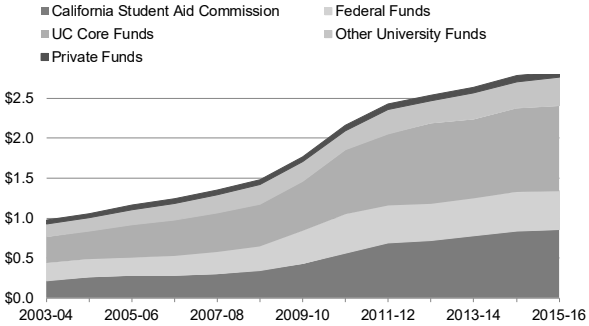
Display XVI-1: 2015-16 Financial Aid by Type and Source of Funds (Dollars in Millions) (Total: $4.1 Billion)



	CSAC	Federal	General Funds, Fees	Other UC	Private
Gift Aid	$854.6	$484.5	$1,071.1	$351.8	$75.1
Loans	$0.0	$1,111.8	$0.0	$7.8	$70.8
Work-study	$0.0	$25.6	$6.5	$0.9	$0.0
Total	$854.6	$1,621.9	$1,077.6	$360.5	$145.9

State, federal, and UC sources each provide large amounts of gift aid (i.e., scholarships and grants) for UC students, while federal funds provide the bulk of student loans.

Display XVI-2: Gift Aid Expenditures by Source (Dollars in Billions)



To offset tuition and fee increases and maintain the promise of higher education for all Californians, both the University and the State have invested heavily in student financial support. Total gift aid is projected to reach over $2.8 billion in 2015-16, half of which is generated from UC sources.

[1] The University of California Financial Aid Policy is available at http://regents.universityofcalifornia.edu/governance/policies/3201.html.

UNIVERSITY OF CALIFORNIA BLUE AND GOLD OPPORTUNITY PLAN

The Blue and Gold Opportunity Plan ensures that financially needy California resident undergraduates with total family incomes under $80,000 have their Tuition and Student Services Fee covered by scholarship or grant awards, up to the student's need. This Plan, introduced in 2009-10, helps ensure that these charges do not deter the half of California households with incomes below $80,000 from aspiring to attend UC. Over half of California resident undergraduates at UC are expected to qualify for the Plan in 2017-18.

In addition, teaching assistantships and research assistantships provide support to 49% of graduate students.

The University has faced challenges in recent years related both to achieving its goals of affordability at the undergraduate level and competitiveness at the graduate level. Earlier this decade, tuition and fee increases were implemented in response to declining State support for the University's budget. Tuition and fee levels remained nearly flat from 2011-12 through 2016-17, while other elements of the total cost of attendance (e.g., living expenses, books, and supplies) increased. Increases in Professional Degree Supplemental Tuition, which were implemented to help professional schools maintain the quality of their programs, also increased the demand for financial aid.

The University has responded to these challenges by adopting measures to expand the availability of student support and to mitigate student cost increases – for example, by augmenting funding for grants and fellowships, limiting Nonresident Supplemental Tuition increases for graduate students, and expanding loan repayment assistance programs for professional degree students choosing public interest careers.

To strengthen support for undergraduate and graduate students, the University uses a portion of the revenue derived from student tuition and fee increases to provide additional grants, fellowships, and other forms of student aid (e.g., loan repayment assistance programs). This practice, known as return-to-aid, is described more fully in the *Fund Sources for Financial Aid* section of this chapter.

Each year UC prepares a comprehensive report for the Regents describing how undergraduate and graduate students finance their education.[2] The University will continue to closely monitor the effectiveness of its financial aid programs in achieving the goals, articulated by the Regents, of affordability at the undergraduate level and competitiveness at the graduate level.

PROPOSALS FOR 2018-19

Financial Aid and Student Fees

As described in the *Student Tuition and Fees* chapter of this document, in 2018-19 the University proposes an increase to the Student Services Fee of $54 ($1,182 total) and a net Tuition adjustment of $288 ($11,790 total), which results from eliminating the $60 Tuition surcharge and adjusting the base Tuition charge by $348. The University will set aside 33% of the projected increase in undergraduate Tuition and Student Services Fee revenue for need-based grant assistance. Together with the State's Cal Grant program, this assistance is enough to offset the increases in tuition and fees for over half of California resident undergraduate students, and to provide the neediest students with additional assistance to help offset other cost increases described above.

Consistent with past practice, the University will also set aside 50% of the new revenue from the Tuition and Student Services Fee increases charged to graduate academic students, and 33% of the increases charged to students in graduate professional degree programs, for graduate student support. Graduate professional degree programs are also expected to supplement financial aid resources by an amount equivalent to at least 33% of new Professional Degree Supplemental Tuition revenue, or to maintain a base level of financial aid equivalent to at least 33% of the total Professional Degree Supplemental Tuition revenue. In addition, campuses are expected to set aside a minimum of 25% of the revenue from newly enacted campus-based fees for return-to-aid.

As noted in the *Student Tuition and Fees* chapter, prior to the inflation adjustment in Tuition in 2017-18, the University's mandatory systemwide charges remained

[2] The *Annual Report on Student Financial Support* is available at http://ucop.edu/student-affairs/data-and-reporting/.

nearly flat from 2011-12 through 2016-17, which limited the University's ability to expand its primary institutional aid programs. This nearly flat Tuition restricted the availability of additional aid to help the neediest students offset the many other cost increases that they face – for example, increases in both on- and off-campus room and board, books and supplies, and health insurance premiums.

Recent growth in the University's nonresident undergraduate enrollment has helped to address challenges associated with flat undergraduate Tuition by increasing the availability of UC institutional grant assistance for California residents. Nonresident undergraduates, as a group, tend to come from families with greater financial resources than families of California resident undergraduates. In addition, the University has discontinued the practice of providing need-based aid to new undergraduate nonresident students (discussed in more detail below). As a result, most of the institutional aid funded by the return-to-aid on nonresident students' mandatory systemwide charges is awarded to financially needy California resident students.

Redirecting Nonresident Undergraduate Aid to Support California Resident Enrollment Growth

In the 2015 Budget Act, the Legislature identified funds provided to nonresident undergraduates as need-based grants as a potential resource for supporting an increase in the number of California resident undergraduates that UC enrolls. Beginning in 2016-17, the University began to phase out funding for need-based grants for nonresident undergraduates and, instead, use these funds to support California resident enrollment growth. Students who entered UC before fall 2016 remain eligible to be considered for awards while they progress toward their degree objective, but cohorts of new nonresident undergraduates entering UC in fall 2016 or later are not eligible. This approach, which is designed to avoid any negative consequences for current UC students, has allowed for an estimated $15.5 million to be used for enrollment growth beginning in 2016-17 and an additional $14 million beginning in 2017-18. The funds available to support enrollment will continue to grow as the nonresidents who entered prior to 2016 and currently receive institutional financial aid graduate. This annual incremental growth will slow until it ends in about 2020-21.

FUND SOURCES FOR FINANCIAL AID

UC students may receive scholarships, fellowships, grants, loans, work-study jobs, and tuition and fee remissions to assist them in paying the educational costs of attending UC. The cost of attendance, as mentioned earlier in this chapter, includes tuition and fees, living expenses, books, and other expenses. UC students receive assistance from four major fund sources: State aid programs, federal aid programs, University funds, and private entities.

State Aid Programs

California students at all eligible California colleges and universities may receive financial support from programs administered by the California Student Aid Commission (CSAC), including the Cal Grant A and B Programs:

- The Cal Grant A Program is the largest of the State's student aid programs and provides grants covering UC systemwide charges for financially needy, meritorious undergraduates; and
- The Cal Grant B Program provides grants covering systemwide charges and a small stipend for living expenses to undergraduates from particularly low-income backgrounds. Generally, only first-year recipients receive the stipend.

The Cal Grant programs are designed to promote access to postsecondary education and to foster student choice among California institutions of higher education. Cal Grant awards for recipients attending UC and the California State University (CSU) cover systemwide student charges, but provide only minimal assistance to help students cover other costs of attendance, such as housing. In 2015-16, approximately 79,000 UC students were awarded $854.6 million in financial aid from all programs administered by CSAC. Cal Grant funding for UC students has increased as UC's systemwide charges have increased. UC will work with the other segments of California higher education and other stakeholders to ensure that the State maintains its historic commitment to the Cal Grant program, and that the program continues to be funded at necessary levels, including funding to cover any future increases in tuition and fees.

CSAC also administers the new Middle Class Scholarship Program (MCSP). The MCSP will complete its four-year phase in 2017-18 and is designed to ensure that eligible students with limited or no financial aid receive scholarship assistance to cover up to a specified portion of in-state tuition – 40% for students with family incomes and assets less than $110,000, falling to 10% for those with incomes and assets up to $165,000. (The actual percentage of tuition covered will be a function of the funding appropriated by the State for the program and the pool of eligible applicants.) The program is expected to provide up to $25 million in new grant assistance to about 10,000 UC students in 2017-18 once the program is fully phased in.

Federal Aid Programs

UC students who are U.S. citizens or legal permanent residents receive federal financial aid in four ways:

- Federal grants and scholarships worth $485 million in 2015-16, which comprised 17% of all grants and scholarships received by UC students that year;
- Loans totaling $1.1 billion in 2015-16;
- Work-study funds totaling $25.6 million in 2015-16; and
- Federal tax credits and income tax deductions, which benefit many UC families. Nationally, the value of these federal benefits has grown steadily since their introduction in 1997. Tax credits and deductions are described in greater detail at the end of this chapter.

While distinct from federal financial aid programs, federal research grants also provide financial support to many students, primarily those in graduate doctoral programs.

University Funds

University funds consist of two components: University core operating funds and other University aid funds. The University designates over $1.4 billion in UC core operating funds – student tuition and fee revenue, UC General Funds, and State General Funds – for student financial support. Approximately $146 million in other University aid funds are provided through campus-based programs funded by endowment income, current gifts, and campus discretionary funds. Nearly all of the financial aid provided by University funds is in the form of fellowships, scholarships, and grants.

Historically, the University has funded its systemwide aid programs largely by setting aside a portion of revenue from tuition and fee increases for financial aid for needy students. As mentioned earlier, this practice is called "return-to-aid." As UC more fully recognized student financial need not covered by external resources, and as student need increased over time, the percentage of revenue from tuition and fee increases dedicated to financial aid also increased. In 1987-88, the percentage of new tuition and fee revenue dedicated to financial aid was 16%; this proportion has increased over time to 33% for undergraduates.

In the latter half of 2015-16, UC implemented the DREAM Loan program for undergraduate undocumented AB 540 students. This program helps level the playing field for undocumented students, who have never had access to federal loan programs – the primary source of loans for documented UC undergraduates. UC expects to award up to $5 million annually in loans to eligible students through this program.

Private Support for Financial Aid

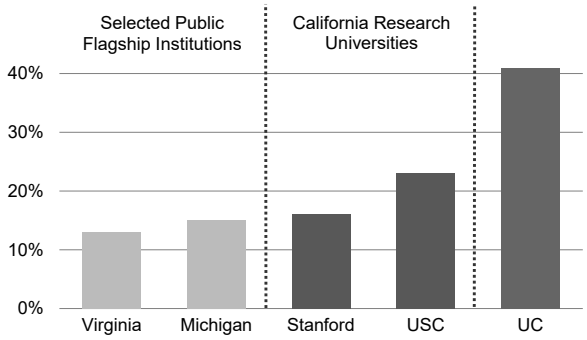
Private entities also provide student financial support through scholarships and other forms of aid. Funds in this category include traineeships and fellowships from private firms, funds from associations and foundations (e.g., the Gates Millennium Scholars program and the American Cancer Society), and small scholarships from community organizations. Nearly all funds in this category are awarded to students in the form of scholarship or grant support. In 2015-16, $82 million was awarded to UC students from private agency programs, representing 3% of the gift aid students received during that year.

Private loans are an important financing option for students with unique circumstances, such as international students with no U.S. co-signers and students who have already borrowed the maximum allowable amount under federal student loan programs. Such loans are particularly important for students in professional degree programs due to the relatively high cost of those programs. UC students borrowed $71 million from private lenders in 2015-16. UC makes extensive efforts to identify lenders that offer private student loans with competitive terms in order to help students in various programs make well-informed decisions about private loans.

Display XVI-3: Undergraduate Student Financial Aid At-A-Glance, 2015-16 All Year

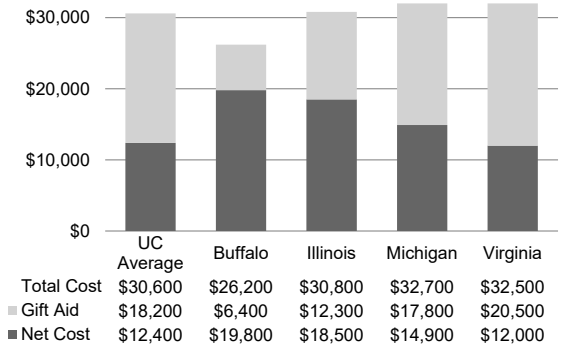
Total Aid (Includes Summer)	$2.9 billion
Aid Recipients	69%
Gift Aid	
Total gift aid	$2.2 billion
Gift aid recipients	65%
Average gift aid award	$16,119
Gift aid awards based on need	Over 92%
Student Loans	
Students who took out loans	41%
Average student loan	$8,479
Students graduating with debt	52%
Avg. debt at graduation among borrowers	$19,231
Student Employment	
Students who worked	46%
Students who worked more than 20 hours per week	9%

Display XVI-4: 2014-15 Undergraduate Pell Grant Recipients



UC remains accessible for students from low-income families. UC has a very high proportion of federal Pell Grant recipients – 41% during 2014-15 (the most recent year from which there are data), more than at any comparable public or private institution.

Display XVI-5: 2015-16 Net Cost of Attendance for Undergraduate Aid Recipients



	UC Average	Buffalo	Illinois	Michigan	Virginia
Total Cost	$30,600	$26,200	$30,800	$32,700	$32,500
Gift Aid	$18,200	$6,400	$12,300	$17,800	$20,500
Net Cost	$12,400	$19,800	$18,500	$14,900	$12,000

Undergraduate need-based aid recipients at UC received an average of $18,200 in gift aid, resulting in a net cost of $12,400. UC's net cost in 2015-16 was lower than the net cost at three of its four public comparison institutions. For comparison purposes, this chart is limited to new freshmen.

UNDERGRADUATE STUDENT FINANCIAL AID

The University is committed to accessibility for undergraduate students across income groups, particularly low-income students, despite increases in the cost of attending UC. As noted earlier in the chapter, 41% of UC students were low-income Pell Grant recipients in 2014-15 – more than at any other comparably selective research institution (See Display XVI-4).

Financial aid also contributes greatly to the University's ability to enroll a diverse population of undergraduate students. African American, Chicano(a)/Latino(a), and Asian American undergraduate students are disproportionately low-income; 48%, 51%, and 34%, respectively, of these students are either financially independent (generally, financially independent students are low-income) or have annual parent incomes of less than $40,000. Collectively, African American, Chicano(a)/Latino(a), and Asian American undergraduate students received 76% of all undergraduate gift aid in 2015-16.

For many years, the percentage of students from middle-income families enrolled at the University remained relatively stable, staying around 43% between 2000-01 and 2006-07, despite tuition and fee increases in most of those years. The percentage has declined to 34% in recent years, which may reflect a decline in middle-income families statewide, attributable to the recent economic recession. The State's new Middle Class Scholarship Program targets these families with awards for students with annual family incomes of up to $165,000. The University is closely monitoring this population, together with income trends among California families more generally.

A general measure of the University's affordability is students' average net cost of attendance (see inset on the following page), which represents the actual cost of attending UC for undergraduates after taking into account scholarship and grant assistance. In 2015-16, the University's *total* cost of attendance before financial aid was

UC GRANT ASSISTANCE UNDER THE EDUCATION FINANCING MODEL

The Total Cost of Attendance	
Minus	Grants from federal and state programs
Minus	A reasonable contribution from parents
Minus	A manageable student contribution from work and borrowing
Equals	University grant aid needed

lower than the total cost of attendance at three of UC's four public comparison institutions, as shown in Display XVI-5. After adjusting for gift aid, UC's *net* cost of attendance for resident need-based aid recipients remained lower than the estimated net cost at three of the University's four public comparison institutions

The Education Financing Model

Consistent with the financial aid policy for undergraduate students adopted by the Regents in January 1994, the University uses an integrated framework – the Education Financing Model (EFM) – to assess UC's role in funding its financial support programs, to allocate financial aid across campuses, and to guide the awarding of aid to individual students. The framework is based on four principles:

- The University must acknowledge the total cost of attendance: resident student fees, living and personal expenses, and costs related to books and supplies, transportation, and health care;
- Financing a UC education requires a partnership among students, their parents, federal and state governments, and the University;
- To maintain equity among undergraduate students, all students, no matter which campus they attend or their income level, are expected to make a generally similar contribution from student loans and employment to help finance their education; and
- Flexibility is needed for students in deciding how to meet their expected contributions and for campuses in implementing the EFM to serve their particular student bodies.

These principles are reflected in a relatively simple framework for determining the components of a student's financial aid package (see inset above).

Parent Contribution. Parents are expected to help cover the costs of attending the University if their children are considered financially dependent (which is the case for most UC undergraduates). The amount of the parental contribution is determined by the same formula used to determine need for federal and State aid programs, which takes into account parental income and assets (other than home equity and retirement accounts), the size of the family, the number of family members in college, and non-discretionary expenses. Particularly low-income parents have an expected contribution of zero.

Student Contribution. Undergraduates are expected to cover a portion of their educational expenses through part-time employment and borrowing. The expected contribution should be manageable so that students can make steady progress toward their degree objective and repay their loans after graduation. The EFM includes ranges for manageable loan and work expectations based on the University's estimates of the minimum and maximum manageable loan/work levels, adjusted annually for inflation and periodically for market changes in student wages and expected post-graduation earnings.

The University's goal is to provide sufficient systemwide funding to ensure that a student's expected contribution from work and borrowing falls within the manageable range established by the EFM. The determination of funding levels for its need-based grant program, how those funds are allocated across the campuses, and guidelines for awarding those funds to students are made in accordance with the EFM principles.

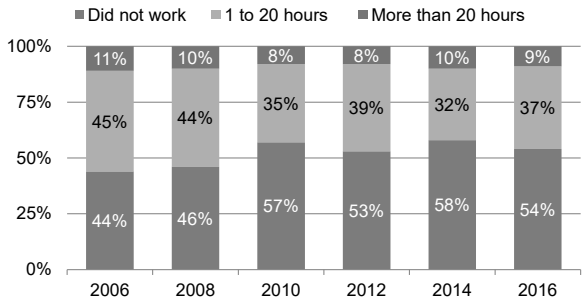
For 2017-18, UC grant recipients will be expected to work for or borrow, on average, about $10,000 to finance their education. Students can compete for UC scholarships and outside awards that effectively reduce their expected contribution. (During the 2015-16 academic year, 20% of undergraduates received scholarships worth $4,598 on average.)

Outcomes of the Undergraduate Aid Program

The University monitors a variety of outcome measures related to student support to evaluate the effectiveness of its undergraduate financial aid programs. These outcome measures are designed to answer the following questions:

- **Does the University enroll students from all income levels?** The University has achieved remarkable

Display XVI-6: Trends in Student Work Hours, 2006-2016



University of California Undergraduate Experience Survey figures from 2006 to 2016 show only slight changes in students' work patterns during this period.

success at enrolling a high percentage of low-income undergraduate students. In fact, during the last period of tuition and fee increases (2008-2011), the gap closed between the proportion of UC students and California families from low-income backgrounds.

- **Do UC students work manageable hours?** The University funds and administers its financial aid programs such that no student is expected to work more than 20 hours per week in order to finance their education. Surveys conducted over time depict similar patterns of work, indicating that increases in UC's cost of attendance have not significantly affected this outcome measure. Display XVI-6 shows students' self-reported work hours from the University of California Undergraduate Experience Survey (UCUES); periodic UCUES results indicate that the percentage of students working more than 20 hours per week has not increased.

- **Do students' financial circumstances affect their academic success?** Despite increases in tuition, fees, and other expenses, trends in student persistence remain stable for students at every income level. In addition, financial considerations do not seem to influence students' ability to graduate from UC. While students from lower-income families take slightly longer, on average, to graduate, their 6-year graduation rate is on par with that of wealthier students who enrolled at UC with similar levels of academic preparation.

- **Do students graduate with manageable debt?** Under the EFM, debt that requires between 5% and 9% of a student's annual postgraduate earnings is considered to be manageable. Among students who borrow, average cumulative debt has changed little during the past few years. (A slight increase in average cumulative debt among middle- and upper-income students may partly reflect increased federal loan limits.) As noted earlier in the chapter, among students who graduated in 2015-16, 52% borrowed at some point while enrolled at UC; their average cumulative borrowing at graduation was $19,231 ($20,900 for students who were admitted as freshmen), well below the national average of $30,100.

GRADUATE STUDENT FINANCIAL AID

At the undergraduate level, the Cal Grant and Pell Grant programs insulate many needy low- and middle-income families from the effects of tuition and fee and other cost increases and play an important role in maintaining the affordability of the University. No comparable State or federal programs exist at the graduate level. For graduate students, the burden of covering increases in the cost of attendance – including increases in tuition and fees – falls upon the University, research and training grants funded by federal and other extramural sources, private foundations, and students.

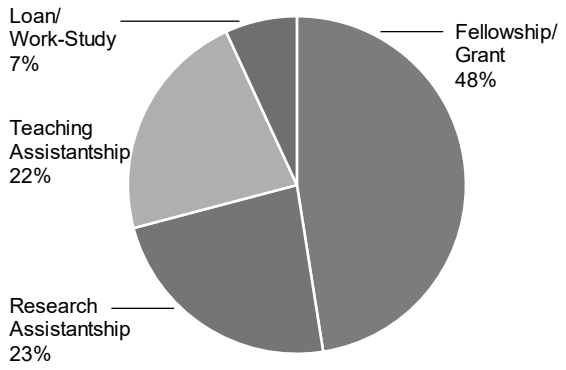
Graduate academic and graduate professional programs differ in a number of ways, including the intended outcomes of the programs, typical program length, and competitive markets for students. Because of these differences, the types of financial support provided to these two groups of graduate students differ greatly. In general, graduate academic students receive more grant aid and traineeships and graduate professional students receive more loans.

As shown in Display XVI-8 on the following page, in 2015-16, 48% of support for graduate academic students was in the form of fellowships and grants. Graduate academic students also serve as teaching and research assistants and hence receive significant funding – about $400 million in 2015-16 – from extramural faculty research grants and University teaching funds. Fellowship, grant, and assistantship support are viewed as more effective than loans for recruiting and retaining doctoral students whose academic programs are lengthy and whose future

Display XVI-7: Graduate Student Financial Aid At-A-Glance, 2015-16

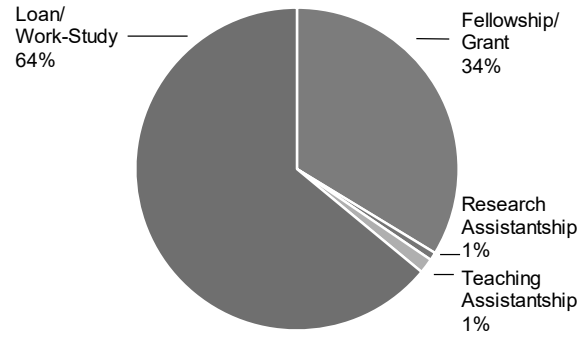
Total Aid	$2.0 billion
From gift aid	33%
From loans/work-study	24%
From assistantships	39%
Aid recipients	86%
Gift Aid	
Gift aid recipients	65%
Average gift aid award	$19,239

Display XVI-8: 2015-16 Graduate Academic Financial Support by Program Type and Aid Type



More than 90% of graduate academic financial aid is in the form of fellowships and grants, teaching assistantships, and research assistantships.

Display XVI-9: 2015-16 Graduate Professional Financial Support by Program Type and Aid Type



In contrast to graduate academic financial aid, most aid for professional school students is in the form of loans.

income prospects are relatively low. Combined, fellowships, grants, and assistantships represent over 90% of all support received by graduate academic students. In contrast, 64% of the support for graduate professional students in 2015-16 was in the form of student loans and work-study and only 34% was in the form of fellowships, grants, and assistantships, as shown in Display XVI-9. In 2015-16, the per-capita loan amount for graduate professional students accounted for 60% of their assistance and was over ten times that of graduate academic students.

Graduate Academic Student Aid

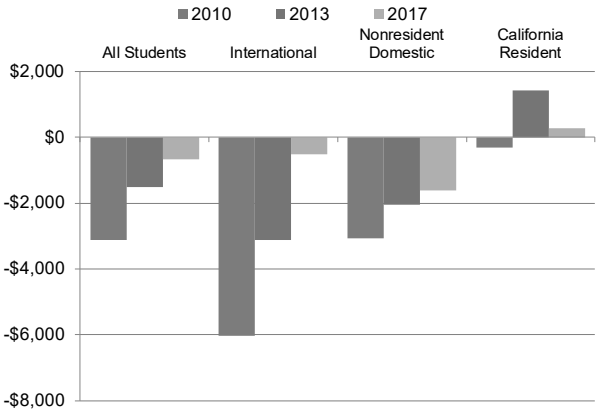
The competitiveness of student support for UC graduate academic students and its impact on the ability of the University to enroll top students from across the world has been a longstanding concern for the University. Top graduate students receive competitive multi-year funding offers from peer institutions, and if the University of California cannot guarantee funding support the best academic doctoral candidates will likely elect to attend other institutions. Excellent graduate students are needed for undergraduate instruction support and for faculty research.

The University has taken several steps to address the gap between graduate student support demand and supply.

- The University increased the percentage of new fee revenue from graduate academic students set aside for graduate student support, from 20% in 2004-05 to 50% currently. These funds allow the University to cover cost increases associated with UC teaching assistantships and fellowships that cover students' tuition and fees.
- The University has not increased graduate academic Nonresident Supplemental Tuition levels since 2004-05. The foregone revenue is seen as a worthwhile trade-off in order to avoid further demands on limited fellowship and research assistantship funding. In effect, this practice has reduced, in real terms, the costs associated with covering Nonresident Supplemental Tuition for out-of-state and international graduate academic students.
- The University has reduced costs for academic doctoral candidates. Effective in fall 2006, graduate doctoral students who advance to candidacy are exempt from paying Nonresident Supplemental Tuition for three years. This practice provides an incentive for these students to complete their dissertation work promptly and reduces the burden on research grants and other fund sources that are often used to fund this cost as part of a student's financial support package.

Since 2004, surveys of students admitted to the University's academic doctoral programs have repeatedly shown that UC's offers of financial support are, on average, less than the offers students receive from competing institutions. Recent surveys suggest that efforts such as those described above have begun to narrow that gap, as shown in Display XVI-10. While UC remains less competitive than other institutions on average – and especially for international and domestic nonresident students – the difference between UC and non-UC offers has diminished over time. These findings indicate progress in this important metric of graduate student support, along with the need for continued investment in the University's ability to

Display XVI-10: Competitiveness of UC Financial Support Offers to Academic Doctoral Students



Data from 2010 to 2017 show an overall decline in the difference between UC's financial support offers to academic doctoral students and the offers students received from competing institutions.

recruit highly talented students in a highly competitive environment.

Professional School Student Aid

The Regents' Policy on Professional Degree Supplemental Tuition[3] (PDST), approved in 1994, stipulates that funding equal to at least 33% of the total revenue from PDST be used for financial aid. The policy has been amended in recent years to include specific conditions for ensuring that the University's commitments to access, affordability, diversity, and students' public service career decisions are not adversely affected by PDST increases.

Nearly two-thirds of financial support awarded to graduate professional degree students is in the form of loans, primarily from federal loan programs. Indeed, the University sets aside less return-to-aid funding for professional school students (33%) than for graduate academic students (50%). A greater reliance on loans and a smaller return-to-aid percentage are appropriate for professional school students because their programs are shorter, and their incomes after graduation tend to be higher, than those of graduate academic students.

University funds are also used for loan repayment assistance programs (LRAPs) in certain disciplines. These programs acknowledge the fact that students who choose careers in the public interest often forego higher incomes and, hence, may be less able to meet their debt repayment obligations. Other LRAPs are funded at the federal, state, or regional level to encourage students to serve specific populations (e.g., to work as a physician in a medically underserved area). In recent years, every UC law school has significantly expanded its LRAP to provide a higher level of debt repayment relief to a broader population of graduates. Other professional schools are continuing to evaluate the appropriate mix of loan assistance and fellowship support to ensure that public interest careers remain a viable choice for their graduates.

Since 2009-10, students have been able to avail themselves of income-driven repayment plans for federal student loans, which are designed to make loan repayments easier for students who take jobs with lower salaries. The amount of debt repayment is determined not by the loan amount but by the borrower's discretionary income, and repayment will never exceed 15% of net disposable income.

OTHER FINANCIAL ASSISTANCE

The federal government and the State provide a number of vehicles to help finance a college education, which include the following:

Cal Vet Fee Exemptions. Consistent with provisions of the California Education Code, by University policy dependents of veterans whose death or disability was service-connected are generally eligible for exemption from mandatory systemwide fees. In 2015-16, over 3,100 UC students made use of such exemptions, worth a total of $39 million.

AB 540 Tuition Exemption. Consistent with Section 68130.5 of the California Education Code, by University policy, certain nonresident students who graduate from a California high school and either (1) attended a California high school for at least three years or (2) obtained three years of high school credit in California and attended some combination of California elementary or secondary schools for at least three years may be eligible for exemption from

[3] See http://regents.universityofcalifornia.edu/governance/ policies/3103.html.

Nonresident Supplemental Tuition at UC. Potentially eligible students include undocumented students and domestic students who fail to meet the University's requirements for residency.

Federal Tax Credits. The Taxpayer Relief Act of 1997 established two tax credit programs, the Hope Tax Credit and the Lifetime Learning Tax Credit, designed to provide tax credits to qualified taxpayers for tuition and fees paid for postsecondary education. Under the American Recovery and Reinvestment Act of 2009, the Hope Tax Credit was expanded and renamed the American Opportunity Tax Credit (AOTC). The AOTC's key enhancements include an increase in the maximum credit from $1,800 to $2,500; an increase in the income ceiling from $116,000 to $180,000 for married filers; and an increase in the length of eligibility from two to four years of education. The Lifetime Learning Tax Credit provides smaller tax credits, and taxpayers are not limited to payments made during the first four years. These tax credit programs generally benefit students from middle-income families. While the total value of higher education tax credits available to UC students and their families is not known, it was estimated to exceed $140 million for tax year 2013.

Tax Deduction for Higher Education Expenses. In 2001, a new higher education expense deduction was established to provide relief to families whose incomes disqualify them from participation in the federal education tax credits. Eligible families can qualify for a deduction of up to $4,000.

Scholarshare Trust College Savings Program. This tax-exempt college savings program administered by the California State Treasurer encourages families to save for college expenses.

Penalty-Free IRA Withdrawals. Taxpayers may withdraw funds penalty-free from either a traditional Individual Retirement Account (IRA) or a Roth IRA for postsecondary education expenses. This provision is intended to assist middle-income families.

Coverdell Education Savings Account. The Economic Growth and Tax Relief Reconciliation Act of 2001 established the Coverdell Education Savings Account (ESA) to replace the Education IRA and assist middle-income families. Although contributions are not tax-deductible, earnings on the ESA are tax-free and no taxes are due upon withdrawal if used for qualified higher education expenses.

U.S. Savings Bonds. The interest on U.S. savings bonds is, under certain circumstances, tax-free when bond proceeds are used to cover education expenses. Eligibility is a function of income level when the bond is redeemed and is intended to assist middle-income families.

Student Loan Interest Deduction. Borrowers may take a tax deduction for interest paid on student loans. Middle- and lower-middle-income borrowers with high debt are the primary beneficiaries of this deduction.

Loan Repayment Assistance Programs. Loan repayment assistance programs (LRAPs), loan assumption programs, and loan forgiveness programs are available to graduates who enter certain professions or who serve specific populations after graduation.

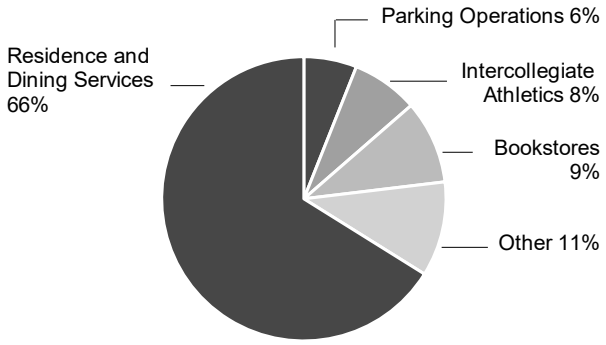
Veterans Education Benefits. Several federal programs provide financial assistance to help veterans and their dependents finance a college education. In particular, the newly enacted GI Bill provides eligible veterans attending UC with an amount equivalent to what is charged to in-state residents for tuition and fees.

Auxiliary Enterprises

Auxiliary enterprises are self-supporting services that are primarily provided to students, faculty, and staff. Student and faculty housing, dining services, and campus bookstores are the largest auxiliaries, with parking and some intercollegiate athletics making up the remaining components. No State funds are provided for auxiliary enterprises; revenues are derived from fees charged for the costs of goods and services provided to cover their direct and indirect operating costs. Auxiliary enterprises expenditures totaled $1.2 billion in 2016-17.

Auxiliary enterprises, as all functional areas of the University, have sought to reduce costs through increased efficiencies in administration and operations. Savings achieved in these programs are necessary to meet higher assessments being charged to auxiliaries for campus-wide operating costs and to cover rising mandated cost increases.

Display XVII-1: 2016-17 Auxiliary Enterprises Expenditures by Service Type (Total: $1.2 Billion)



Residence and dining services account for over two-thirds of the expenditures by auxiliary enterprises.

Display XVII-2: Auxiliary Enterprises At-A-Glance, 2016-17

Student Housing:	
Single student residence bed spaces	87,320
Student family apartments	6,289
Student housing occupancy rate	106%
Planned growth in student beds by 2017	2005
Faculty Housing:	
Faculty rental housing units	2,610
Planned growth by 2016	0
Mortgage loans provided	7,948
Faculty provided housing assistance	6,704
Parking:	
Parking spaces	125,626

STUDENT, FACULTY, AND STAFF HOUSING

UC's largest auxiliary enterprise is student housing, comprising 87,320 University-owned residence hall and single student bed spaces and 6,289 student family apartments, for a total of 93,609 spaces in fall 2017.

Affordable student housing is an important component of the University's ability to offer a high quality education and residential life experience. Campus housing is also important in addressing the University's sustainability goals and long-range planning targets. Rapid enrollment growth over the last decade has presented the University with many challenges; creating affordable, accessible student housing to accommodate this growth has been high among those challenges. In accommodating demand, campuses identified guaranteed housing for freshmen as one of their highest priorities. Providing additional housing options for transfer and graduate students is also of high importance. Even though the University has been better prepared in the last couple of years to meet the housing demand of students than in previous years, some campus residence halls continue to be occupied at over 100% design capacity. The systemwide occupancy rate is 106% . Campuses have been accommodating more students by converting doubles to triples, as well as modifying study areas into temporary quarters. Campuses continue to offer housing to all freshmen who meet enrollment and housing application deadlines.

In 2016, President Napolitano announced a housing initiative aimed at supporting current students and future enrollment growth across the UC system. The University expects to expand the pool of student housing over the next four years by adding an estimated 14,000 new beds, and to accelerate the timetable for completing student housing developments that are already in the planning phase.

This includes the creation of new beds for undergraduates in residence halls and the addition of more graduate student housing and other apartments. The overarching goals are to ensure that each of UC's campuses has sufficient housing for its growing student population and to keep housing as affordable as possible for students.

The California housing market is a continuing deterrent to UC's faculty recruitment efforts, particularly for junior faculty, and adding faculty and staff housing units continues to be a high priority. Various programs to alleviate this problem have been implemented since 1978, including the following:

- Rental housing units are made available to newly appointed faculty according to criteria established by each campus. These units are self-supporting without subsidy from student rental income.
- The University of California Employee Housing Assistance Program provides mortgage loans to full-time faculty members and other designated employee classes. The available loan products have favorable interest rates, no lender points or fees and low down payment requirements. The participants must use the property securing the loan as their primary residence and the loan documents contain a condition of employment provision that requires repayment of the loan in the event the participant leaves the University.
- The Faculty Recruitment Allowance Program provides grants to faculty members to assist with housing-related costs. The Recruitment Allowance can be paid as a lump sum or over a period of up to ten years. The program is limited to eligible participants who are within two years of their qualifying appointment.
- Six campuses have developed for-sale housing on land owned by the University. The homes are sold to faculty and other eligible participants subject to a long-term ground lease. Affordability of these homes is maintained by restricting the maximum sales price at the time of resale.

BOOKSTORES

The mission and vision of University bookstores is to provide the community with quality products, services and technologies that ensure academic success, promote campus pride, and enhance the lifestyle of our community while responding proactively to issues of environmental sustainability.

Six campuses (Davis, Los Angeles, Merced, San Diego, Santa Barbara, and Santa Cruz) operate University-managed bookstores. These bookstores provide a broad selection of general books, textbooks, computer products, supplies, insignia apparel and souvenirs, sporting goods, dormitory and apartment living supplies, newsstand materials, groceries, and a variety of other products. As independent and self-supporting divisions of Student Affairs or Business Services, the financial contributions from these campus-owned bookstores benefit student services and programs.

The Berkeley, Irvine, and Riverside campuses contract the management of the bookstores to private operators; the San Francisco campus provides textbooks and reference material through an online UCSF-specific vendor since closing its campus bookstore in 2011.

Although each campus bookstore serves the unique needs of the campus within the context of the local marketplace, there are common trends among UC bookstores and their counterparts serving other research universities:

- Rising income among students, faculty, staff, and parents – the result of a healthier economy in both the state and the nation – continues to have a positive impact on total revenue. However, mandatory costs that are increasing at a rate greater than total revenue continue to put a strain on operations.
- Textbook sales traditionally comprised of both new and used titles now include custom content textbooks, digital textbooks or eBooks, custom course packs, loose-leaf versions, and adaptive digital content. Adaptive digital content, also known as digital media content, is often priced 50-75% below the print equivalent. Licensing models are being developed at several campus bookstores to take advantage of this superior and much sought-after content.
- The total revenue from the sale of course materials content has declined and the sales of computer products (the tools to access that content) have leveled off as the much-coveted Educational Pricing – now available at Apple Computer stores as well as campus bookstores – has made these products more affordable to students.
- New product categories are being introduced to add value to the quality of campus life. Revenue from dormitory supplies, including microwaves, refrigerators,w sheets, towels, and bedding has increased in the last couple of years and has helped offset the continued decline in textbook and general book sales.
- New services such as passport application processing and textbook rentals are growing sources of revenue.

- Growth in revenues from online sales continues.

Textbooks are an important factor students need to consider when calculating the overall cost of attending college. To offset high textbook prices, students can rent and share peer-to-peer exchange textbooks online. In addition, the open source model allows faculty to personally adapt and publish course material that students can access for free or for a nominal cost.

PARKING

UC's parking program is another major auxiliary, with 129,587 spaces in 2017 for students, faculty, staff, and visitors. Campuses have successfully encouraged students, faculty, and staff through their Transportation Demand Management (TDM) programs to commute to campus via alternative modes. Alternative mode commuting reduces vehicle trips, parking demand, and greenhouse gas emissions. In support of the UC Policy on Sustainable Practices and in conformance with campus Long-Range Development Plan Environmental Impact Reports (EIRs), all campuses have implemented extensive TDM programs, including carpools, vanpools, shuttles, transit pass subsidies, carshare vehicles and similar initiatives. Campus Long-Range Development Plan EIRs require mitigation of University-created traffic impacts; thus, the more the campus population commutes via alternative transportation modes, the less impact on off-campus intersections and roadways can be attributed to UC, and the less obligation UC has to contribute towards off-campus transportation improvements. TDM programs are funded, in part, by parking revenues; thus, as TDM participation increases, parking revenue decreases, creating a challenge to continue and expand TDM programs. Lastly, the parking programs are installing and increasing the number of electric vehicle (EV) charging stations to both serve campus permit holders who already have electric vehicles and to encourage the use and/or purchase of electric vehicles.

INTERCOLLEGIATE ATHLETICS

Most UC campuses operate recreation and intercollegiate athletics programs exclusively as student services. However, the Berkeley and Los Angeles campuses – both campuses with large intercollegiate sports programs – operate a portion of their recreational and intercollegiate athletics programs as auxiliary enterprises with revenue generated from ticket sales, concessions, and other self-supporting sources. The San Francisco campus also runs its recreational facilities and programs as self-supporting auxiliary enterprises, with modest subsidies from Student Services Fee revenue.

Provisions for Allocation

Provisions for allocation serve as a temporary repository for certain funds until final allocation decisions are made. For instance, funds allocated for across-the-board cost increases, such as salary adjustments, employee benefit increases, and price increases that occur in most program areas, may be held in provision accounts pending final allocation. Such cost increases are discussed in the *Compensation, Employee and Retirement Benefits, and Non-Salary Cost Increases* chapter of this document. Provisions for allocation also include negative appropriations, e.g., undesignated reductions in State General Fund budgets awaiting allocation decisions or budgetary savings targets.

General Obligation Bond Debt Service

The 2013-14 Budget Act provided for the transfer of $200.4 million to UC's base budget to cover State General Obligation Bond debt service related to University capital projects. The portion of the University's appropriation that is annually required for debt service is, in effect, a pass-through that is not available for UC's operating needs. However, including the amount in the University's base budget increases the base from which future budget adjustments are calculated. For FY16-17, the actual debt service payment is $217.1 million.

Compensation, Employee and Retirement Benefits, and Non-Salary Cost Increases

Employee salaries and benefits represent the single largest category of expenses for the University of California, as it does for other knowledge and service based institutions. Increased salary costs are largely driven by the need to hire and retain faculty and staff at market-competitive rates that fairly compensate them for their services. Benefits and other non-salary increases are driven by inflation and price increases imposed by providers. To a large extent, adjustments to the University's budget reflect these rising costs of doing business, rather than initiation of new programs.

Display XIX-1: Compensation and Benefits At-A-Glance, 2016-17

Number of Employees as of April 2017 (base FTE)	
Academic	45,559
Professional/Support Staff	99,839
Managers/Senior Professionals	12,374
Senior Management	169
Total	157,941
Salaries and Wages	$14.7 billion
Employee Health Benefits	$1.7billion
UC Retirement Plan as of July 2017[1]	
Active members (Headcount)	126,869
Normal Cost	$1.9 billion
Retirees and survivors	59,806
Benefits payout for 2016-17	$3.3 billion
Annuitant Health Benefits[1]	
Retirees and family members (Headcount)	63,871
Projected Cost for 2017-18	$315 million

[1] For campuses and medical centers (excludes DOE Labs).

An area of ongoing concern, as a result of years of funding shortfalls, is the continuing lag in faculty and staff salaries compared to market. In 2005, the Regents adopted a program intended to achieve market parity with those institutions with whom UC competes for talent, calling for additional merit increase funding over a 10-year period. Due to budget constraints, this program was never fully implemented. Due to the State's most recent fiscal crisis, no merit increases or general range adjustments for non-represented staff employees were provided in 2008-09, 2009-10, 2010-11, and 2012-13. Academic employees continued to receive salary increases through the normal academic merit salary review program, but they received no general range adjustments. Four years without salary increases exacerbated an already significant problem with respect to the University's ability to provide competitive salaries.

The lack of general salary increases over a multi-year period has created profound talent management challenges in attracting and retaining high-performing faculty and staff at UC. Without UC action, these challenges will increase, particularly as the economy continues to improve and other institutions are in a position to recruit UC's top performers.

The University's 2018-19 budget plan includes funding for a multi-year initiative to reinvest in quality (described in the *Budget Summary*), part of which is targeted at addressing salary market gaps over time

COMPENSATION FOR ACADEMIC AND STAFF EMPLOYEES: SALARY INCREASES

The University's budget plan for 2018-19 includes funding for compensation adjustments for eligible employees paid from core funds.

Consistent with past practice, compensation increases for employees funded from other fund sources – including teaching hospital income, auxiliary enterprises, federal funds, and other sources – will be accommodated from within those fund sources and will conform to the University's established systemwide salary programs for core-funded employees.

In 2009, an updated study of UC's total compensation program indicated that, in general, average UC salaries were significantly below the market median, but the total compensation package, including salary and health and welfare benefits for employees as well as post-employment benefits (pension and retiree health), helped make up some of the shortfall. However, an update to this study, focusing on ladder rank faculty and completed in 2014, indicated that the value of benefits had decreased to such an extent that

COMPONENTS OF THE COMPENSATION BUDGET

Academic Merit increases recognize and reward relative levels of performance and contribution, and are critical to the preservation of the quality of the University and to reinforce a pay for performance philosophy. Merit salary increases for faculty and other academic employees provide a reward mechanism to recognize the quality and effectiveness of teaching and research, and enable the University to compete with other major research universities in offering long-term career opportunities. Merit increases are never automatic and are based on demonstrated contributions.

Contractual Wage Increases are established through collective bargaining agreements.

General Compensation Increases:

- **Merit-based/General Salary Program Increases** help the University to compete with other universities for talent and reward employees based on their performance and contribution to the University.
- **General range adjustments** for eligible employees reflect changes in the cost of labor.
- **Market and equity adjustments** help bring individual salaries to a competitive market level for individual employees in jobs with significant external market gaps and/or internal equity issues, or address recruitment and retention challenges.

Other Compensation Related Items:

- **Pension Contribution Increases** are paid by both the employer and the employee.
- **Health and Welfare Benefit Cost Increases** are paid by both the employer and employee, driven by rates negotiated with UC's health plan providers.
- **Retiree Health Cost Increases** are needed to cover similar cost increases in health benefits for annuitants.

total remuneration for faculty was 10% behind market and cash compensation was lagging by nearly 12%.

The value of the benefit package has decreased as employee contributions to the UC Retirement Plan have risen to 7%, 8%, or 9% of salary, depending on UCRP member tier, to ensure the solvency of the retirement program. In addition, inflationary increases for health benefit costs have required employees to contribute a larger share toward their medical premiums. The 2018-19 budget plan includes a 3% general increase for faculty and 3% merit increase for staff to recognize performance and contribution, and help the University improve its competitive position to attract new and retain existing talent.

Faculty Salary Gap

To evaluate its market position, UC compares its faculty salaries with eight peer institutions. Due to State budget cuts during the early 2000s, UC's average faculty salaries declined from parity with these comparators to a 9.6% lag by 2006-07. In 2007-08, the University instituted a four-year plan to eliminate the lag and return faculty salaries to market levels, and after one year of the plan, the faculty salary gap was reduced to 7.1%. However, the State's ongoing fiscal crisis prevented continuation of this plan, and the gap widened to 12,8% by 2010-11. Subsequently, this gap narrowed somewhat – it was 8,4% in 2016-17, and has since narrowed further as the University has been able to fund annual general increases for faculty. Even so, the gap was still larger than it was in 2007-08.

While the merit and promotion system for academic employees has been maintained, estimated at an incremental annual cost of about $32 million, the University is deeply concerned about the effects of the salary lag and reduced health and welfare, pension, and annuitant health benefits on faculty recruitment and retention, particularly for UC's promising junior faculty who often are supporting young families in a high-cost environment. As endowments at private institutions recoup their losses and other states stabilize funding for public institutions, it is expected that those institutions will rapidly move to restore academic programs by recruiting faculty away from other universities.

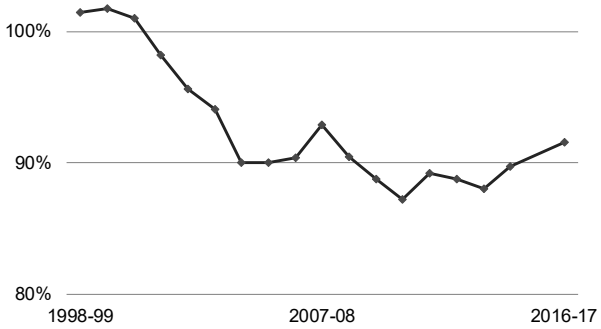
UC already finds itself struggling to retain its own high-quality faculty. Additionally, recruitment of new faculty, which significantly slowed during the recent fiscal crisis, has improved but remains a concern in the face of increasing student enrollments and sizable faculty retirements. Salary lags pose challenges to attracting the best faculty candidates, and there is a reputational cost associated with an inability to adequately compensate faculty.

Staff Salary Gap

Staff salaries in most workforce segments present a similar competitive market problem for the University. UC was unable to provide salary increases in 4 out of the 10 years since 2007-08, as noted in Display XIX-3. Market salaries

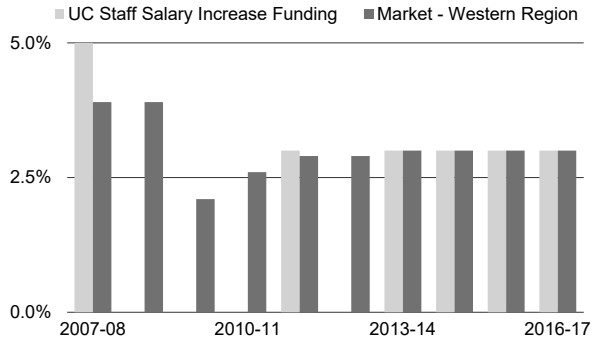
over the period have been increasing at approximately 3.0% per year, but UC staff salary increases have not kept pace at approximately 2.0%. Detailed information about the limited and sporadic adjustments to non-represented staff salaries since 2000 is provided in the highlighted section titled "Recent History of Salary Increases for Non-Represented Staff." The UC system competes to retain and hire well qualified leadership talent with the top public and private universities in the country, as well as other employers in the local labor market. While the University does not have the same financial resources that private universities have, it nonetheless competes with them for talented academics and leaders. Many top public research

Display XIX-2: Ladder Rank Faculty Salaries as a Percentage of Market



Due to funding constraints, the University has struggled to bring faculty salaries to par with comparators. In 2016-17, UC's faculty salaries were 8.4% below market.

Display XIX-3: Increases in Funding for Staff Salaries Compared to Market



In 4 of the last 10 years, UC was unable to provide increases in staff salaries, resulting in significant market disparities. (Source: World at Work Annual Salary Budget Survey, which represents data from over 1,000 employers from all sectors in the western United States.)

2014 TOTAL REMUNERATION STUDY

Past cuts to the University's budget have resulted in significant disparities in faculty and staff salaries compared to the market. To determine how these disparities have changed since they were last evaluated, former President Yudof commissioned a total remuneration study in July 2013 for general campus ladder rank faculty. Prohibitive costs prevented a study of all employee categories. Conducted by Mercer during the first half of 2014, the purpose of the study was to evaluate the University's current position for total remuneration compared to the market and to determine the impact of the New Tier post-employment benefits on total remuneration.

The study found that salaries for UC's ladder rank faculty lag market by 12% across all pooled ranks; health and welfare benefits are 7% below market; total retirement packages (including the defined benefit plan and retiree health plan) are 6% above market; and UC's total remuneration position is 10% below market, due primarily to non-competitive salaries.

The study also compared UC's competitive position in 2009 (when the last total remuneration study was undertaken) and 2014. The findings about UC's changing competitive position are of particular concern because they identify longer term trends in UC's competitiveness relative to its principal comparator institutions. The major findings included the following: UC's position with respect to total remuneration fell 8% between 2009 and 2014, from 2% below market to 10% below market; salaries fell from 10% below market to 12% below market; health and welfare benefits declined from 6% above to 7% below; changes to UC's retirement plans since 2009 based on the 2013 Tire have reduced UC's positioning against the market from 29% above market to 2% below market; total retirement decreased from 33% above market to 6% above market; and total benefits decreased from 18% above market to 1% below market. The study found that the total remuneration mix changed significantly between 2009 and 2014. In 2009, salaries represented 68% of total remuneration and total benefits represented 32% of total remuneration. In 2014, salaries increased to 78% of total remuneration and benefits decreased to 22%, underscoring the need for competitive salaries to address further erosion of UC's market position. Similar downward trends exist for other staff salaries in most workforce categories. The University is deeply concerned about the erosion of UC's competitiveness with respect to compensation and the widening gap between funds available for compensation and the resources needed to fund competitive salaries.

universities compensate their staff (as well as faculty) more highly, and in some cases, significantly more highly, than UC. The University must pay competitive wages in order to maintain its position as a top ranked institution of higher education.

That can be a challenge, however, when other universities are offering more than the UC system, as compensation at UC lags far behind counterparts at the top schools that are members of the Association of American Universities (an association of 61 leading research universities in the United States and Canada). The labor market is no different from other markets for goods and services. As the demand for experienced leaders has grown over the last decade or so, compensation costs of these leaders also has increased. UC needs high-performing employees at all levels, including senior leadership, to continue UC's success into the future. In order to attract and retain these employees, UC needs to have predictable, fair, competitive compensation programs.

Illustrating UC's staff compensation gap problem is the total compensation of UC chancellors. The median compensation for this group lags behind other public and private AAU institutions' leaders' compensation by 52.2%. Among their peers at other public institution members of the Association of American Universities, compensation for UC chancellors trails by 31.8%, falling in the bottom third, despite the size, complexity, and stature of UC.

For the last four years the University has been able to provide modest salary increases to non-represented staff due to increases in the State budget. In addition to helping to restore staff morale, these actions also assist the University's efforts to retain skilled, experienced employees. These increases have started to address the lack of salary increases during 2008-09, 2009-10, 2010-11, and 2012-13. The University would like to have a multi-year plan for increasing staff salaries similar to the 2005 Regents plan calling for 5% annual increases. The 2005 plan was never fully implemented due to funding constraints. Represented staff have received contractually negotiated salary increases on schedule.

RECENT HISTORY OF SALARY INCREASES FOR NON-REPRESENTED STAFF

2001-02 and 2002-03: Staff salary increases were lower than planned because of limited State funding.

2003-04 and 2004-05: The University instituted additional internal budget cuts in order to fund academic merit increases for faculty, but no employees received a general range adjustment and staff employees received no merit increases.

2005-06 through 2007-08: The Compact with the Governor provided funding for academic and staff salary increases.

2008-09 through 2010-11: Due to budget shortfalls, general salary increases were not provided to faculty or staff. However, the University continued to fund faculty merit increases by redirecting funds from existing resources.

2009-10: The Regents approved a one-year salary reduction/furlough plan effective September 1, 2009 to August 31, 2010. The plan instituted a tiered system of furloughs and pay reductions, based on employee pay; employees were furloughed from 10 to 26 days per year, with the lowest paid employees (up to $40,000) subject to the fewest furlough days. Pay reductions ranged from 4% to 10% per year for employees. The plan is estimated to have saved $136 million in General Funds to help address the State funding shortfall and $236 million from all fund sources.

2011-12: For the first time since 2007-08, non-represented staff were eligible for merit salary increases.

2012-13: No salary increases were given to non-represented staff.

2013-14: General salary increases of 2% for academic personnel and 3% for non-represented staff were implemented.

2014-15: General salary increases of 3% for non-represented staff and academic personnel were implemented.

2015-16 and 2016-17: Merit-based salary increases averaging 3% for non-represented staff and academic personnel were implemented.

EMPLOYEE HEALTH AND WELFARE BENEFITS

As part of the total compensation package for faculty and staff, the University seeks to provide competitive health and welfare benefits including medical, dental, vision, basic disability and life coverage. UC offers a range of medical plans to meet the varying needs of its employees, including HMOs for employees wanting predictable out of pocket costs, PPOs for those who prioritize choice of providers, and a Health Savings Plan that provides members with more financial control. For additional protection from adverse life events, employees may purchase optional voluntary disability, supplemental life, accidental death and legal insurance. Depending upon appointment type, the University may pay on average 35% to 40% of an employee's annual base salary in employer benefits.

The University continues its commitment to manage healthcare expenses despite health costs that are growing faster than the US economy and the uncertain future of the Affordable Care Act. To strengthen efforts on managing costs, UC Health and Human Resources created an innovative partnership, leveraging the University's capabilities as both provider and payer of health care to improve health outcomes while maintaining costs. Some of these strategies include:

- Self-funding all PPO plans, including the Health Savings Plan.
- Leveraging UC's captive insurance company, Fiat Lux, to provide reinsurance to the self-funded plans as needed.
- Providing incentives for employees and retirees to seek care at the world-renowned UC Medical Centers through a tiered benefit structure.
- Creating risk-sharing arrangements between UC Medical Centers and health plan administrators. By forming Accountable Care Organizations, UC health care providers assume some of the financial risk for their patients' care, encouraging them to create the most effective and cost-efficient care delivery systems and ensuring the best health outcome for patients.
- Strengthening disease management programs to improve the health of the UC population across the system and for early detection of at-risk candidates, further controlling costs over time.

This leading-edge approach, forging new collaboration between UC's health care providers and the benefits management team, is designed to improve patients' experiences and health outcomes while limiting cost escalation.

Additional strategies are being employed to help control benefits costs. A request for proposals (RFP) was issued to the market in 2016 seeking competitive bids for administration of UC's medical PPO portfolio. This action helped to ensure that UC secured the best-in-class plan administration which will provide members with strong customer service at a reasonable cost. Similarly, an RFP was issued for the Blue & Gold health maintenance organization (HMO) in 2017 for launch in 2019.

The University, through its Human Resources Compliance unit, continues the Family Member Eligibility Verification review for health benefits, ensuring that only those eligible for coverage by University benefits were enrolled in UC-funded plans. The annualized savings from this ongoing effort is approximately $8 million.

For 2017, the UC faculty and staff medical program cost increase will be held at 2.8% over 2016. The University will fund $1.4 billion of the $1.7 billion total cost of employee medical benefits. Furthermore, no increases to active employee vision premiums and minimal increases on the dental plans result in an overall health benefit package budget increase of 2.2%.

SALARY VERSUS TOTAL COMPENSATION

Job seekers often focus on salary to determine where to apply for employment. Salaries are the largest component of a compensation package and job seekers are not necessarily aware of the value of the benefits the University offers. If salaries are too low, job seekers may not even consider the total compensation package and apply elsewhere. In order to attract quality faculty and staff, the University cannot rely solely on its benefits package and must offer competitive salaries as well.

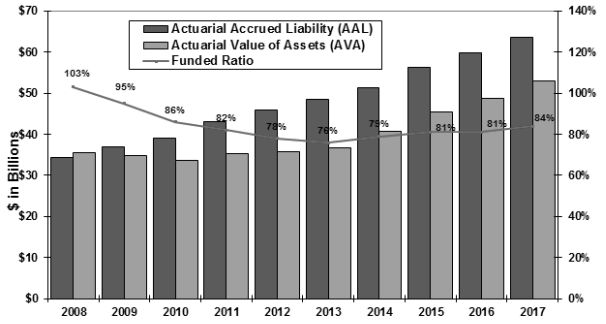
The University's goal is to offer a total compensation package that is competitive with the market. However, due to the rising costs of health and retirement benefits, and the increasing costs to employees, the value of the University's compensation package is diminishing. As these costs continue to rise, the University will experience greater difficulty recruiting and retaining high-quality faculty and staff, particularly if salaries are not competitive.

The 2.2% increase in the 2017 UC health program contribution is lower than the national trend: two surveys of large employers show health care costs are expected to rise by 5– 6% in 2017[1].

UC's progressive medical premium rate structure is designed to help offset the impact of the employee's share of the medical plan premiums on lower-paid employees. UC pays approximately 87% of medical premiums for employees on an aggregate basis, and has made a strategic decision to cover an even larger portion of the premium for those in lower salary brackets.

Despite the University's extensive efforts to stabilize benefits expenses, UC expects the upward trend of health care costs will continue due to external factors outside of the control of UC. It is anticipated that in coming years there will be an need to pass along a greater share of rising costs to employees through increased premiums.

Display XIX-4: UCRP Historical Funded Status (Dollars in Billions)[1]



The UC Retirement Plan funded percentage has diminished over time but has recently increased to a level of 85% on an actuarial value of assets (AVA) basis by July 2017.

[1] Includes assets and liabilities allocated to members of the Lawrence Berkeley National Laboratory, and retained segments of the Lawrence Livermore National Laboratory and the Los Alamos National Laboratory.

RETIREMENT BENEFITS

Pension Benefits

The University of California Retirement Plan ("UCRP" or "the Plan") is a governmental defined benefit plan that provides pension benefits for more than 59,000 retirees and survivors and has more than 126,000 active employee members as of July 1, 2017[2]. UCRP promotes recruitment of talented individuals and provides incentives for long careers with UC. Because UCRP provides guaranteed benefits, career faculty and staff gain income security over the span of their retirement years. UCRP disbursed $2.6 billion in retirement benefits during 2016-17.

Employer and Member Contributions

Prior to November 1990, contributions to UCRP were required from all employer fund sources and from employees (members). In the early 1990s, the Regents suspended University and member contributions to UCRP after actuaries determined that UCRP was adequately funded to provide benefits for many years into the future.

The University estimates that in the nearly 20 years during which employer contributions were not required (Employer and member contributions were re-started in April 2010), the State saved over $2 billion in contributions for those UCRP members whose salaries were State-funded.

The total cessation of contributions, which was desirable at the time for a variety of reasons, has created a serious problem today. For almost 20 years, faculty and staff continued to earn additional benefits as they accumulated UCRP service credit, yet no funds were collected from the various fund sources that were supporting member salaries and invested in UCRP to offset the annual increase in liabilities. Plan liabilities currently increase by $1.9 billion (17.4% of covered payroll) annually as active members earn an additional year of UCRP service credit.

Due to both increasing liability and recent turmoil in financial markets, the actuarial-funded ratio of UCRP for all locations, excluding DOE labs, fell from 156% in July 2000 to 85% in July 2017. The accrued liability exceeds the actuarial value of assets by $11.1 billion. The extent to which this unfunded liability grows depends on future investment returns, as well as employer and member contributions to UCRP and changes in plan provisions.

[1] http://khn.org/news/big-companies-expect-moderate-increases-in-2017-employee-health-care-costs/
[2] For campuses and medical centers (excludes DOE Labs).

The 2009-10 Governor's Budget acknowledged the need to provide $96 million for its share of employer contributions (covering employees funded from State funds and student fees), representing a rate of 4% to begin on July 1, 2009, rather than the proposed 9.5% employer rate. However, the Governor's budget proposal reduced this amount to $20 million, and ultimately no funding for this purpose was included in the final budget act.

The University restarted employer and member contributions in April 2010, with an employer contribution of 4% and contributions from most members of 2% for the period from April 2010 through the 2010-11 fiscal year. The State's share was funded by redirecting resources from existing programs.

In September 2010, the Regents approved increases to both employer and member contributions for 2011-12 and 2012-13. Employer contributions rose from 4% in 2010-11 to 7% for 2011-12, to 10% for 2012-13, to 12% for 2013-14, and 14% effective July 1, 2014. Contributions for most members rose from approximately 2% in 2010-11 to 3.5% for 2011-12 and rose to 5% for 2012-13, to 6.5% in 2013-14, and to 8% effective July 1, 2014.

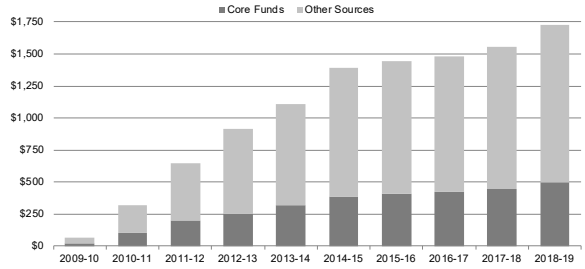
In December 2010 and March 2011, the Regents gave the President authority to transfer funds from the UC Short Term Investment Pool (STIP) to UCRP to stop further increases in the unfunded liability. Approximately $1.1 billion was transferred to UCRP in April 2011. Another $935 million was transferred to UCRP in July 2011, which was garnered from external borrowing through the issuance of a variable rate general corporate bond, and a third amount of $700 million was transferred from STIP in July 2014. In November 2015, the Regents again delegated to the President of the University authority and discretion to fully fund the Actuarially Determined Contribution (ADC) for the non-laboratory segment of the Plan during fiscal years 2015-16 through 2017-18. For UCRP the ADC is the total funding policy contribution less expected member contributions. A STIP transfer of $564 million was made in November 2015 and additional transfers totaling $481 million were made during July-December 2016. The amounts along with other contributions result in approximately full funding of the ADC for 2015-16 and 2016-17. Additional future transfers of $500 million for 2018-19 and 2019-20, $600 million for 2020-21, and $700 million for 2021-22 have been authorized in order to reach ADC for those years. Campus and medical center payroll funds are being assessed a fee to cover the principal and interest on the STIP note and bond debt. These cash transfers to UCRP were authorized to prevent future employer contributions to UCRP from rising to unsustainable levels.

Display XIX-5: Employer and Employee UCRP Contribution Rates[1]

	Employer		Most Members
	UCRP	STIP Note/ Bond Debt[2]	UCRP
2010-11	4.00%	0.00%	2.00%
2011-12	7.00%	0.07%	3.50%
2012-13	10.00%	0.63%	5.00%
2013-14	12.00%	0.65%	6.50%[3]
2014-15	14.00%	0.72%	8.00%
2015-16	14.00%	0.60%	8.00%
2016-17	14.00%	1.15%	8.00%
2017-18	14.00%	1.30%	8.00%

[1] Measured as a percentage of base pay. Member contribution amounts are pretax and less $19 per month. Member contributions are subject to collective bargaining agreements. Contributions were resumed in April 2010 at the 2010-11 rates.
[2] Payroll assessment to cover the principal and interest on the STIP note and bond debt used to stop further increases in the unfunded liability for UCRP.
[3] Member contributions for employees hired on or after July 1, 2013 will be 7% with no $19 per month offset.

Display XIX-6: Actual and Projected Employer Contributions to UCRP and Savings Choice by Fund Source (Dollars in Millions)



Employer contributions to UCRP restarted in April 2010. Contribution rates to retirement plans for 2017-18 are 14% of employee compensation on behalf of UCRP and Savings Choice members (for whom 6% goes to UCRP and 8% goes to participant accounts). The total cost for 2018-19 is about $461 million to core-funded programs and $1.6 billion from all funds.

In addition, the State provided a total of $436 million in Proposition 2 funding over three years ($96 million in 2015-16, $171 million 2016-17, and $169 million in 2017-18) to help reduce the University's unfunded liability for UCRP, subject to certain conditions described below.

Changes to Post-Employment Benefits

In December 2010, the Regents took action to make changes to post-employment benefits that reduced long-term costs. Most significantly, the Regents approved the establishment of a new tier of pension benefits for employees hired or (in certain situations) rehired on or after July 1, 2013, which increased the early retirement age from 50 to 55 and the maximum age factor from age 60 to 65. In addition, UCRP members hired on or after July 1, 2013 are paying 7% of covered compensation.

In September 2012, the Governor signed legislation to reform the California Public Employees Retirement System (CalPERS) for State employees hired after January 1, 2013. The new legislation limits the maximum compensation used for benefit calculations, requires State employees to pay 50% of their pension costs, and increases the early retirement age from 50 to 52 and the age at which the maximum age factor applies from 63 to 67. The pension reform also included measures (similar to measures the University already has) to prevent abusive practices such as "spiking," when employees are given big raises in their final year of employment as a way to inflate their pensions.

General Accounting Standards Board (GASB) rules require UC to report accrued unfunded pension liabilities on its financial statements. For 2016-17, UC recorded a net pension liability accrual of $10.7 billion.

In 2012-13, the State provided an augmentation to the University's budget of $89.1 million intended as support of the State's share of the contribution to UCRP. This augmentation was welcome acknowledgement of the State's responsibility for its share of these costs. However, this amount is far short of the $370 million needed to fully fund the State's 2017-18 share of UCRP. In 2017-18, the University is contributing $444 million from core fund sources and $1.6 billion from all sources to UCRP and Savings Choice. UC contributions are expected to rise to $494 million from core funds ($1.7 billion from all funds) in 2018-19. The State's share, based on State- and student tuition and fee-funded employees, is projected to rise to approximately $411.3 million in 2018-19. The budget plan for 2018-19 includes $17.1 million for the increase in these costs for core-funded programs.

As described earlier, the State provided one-time funding for UCRP totaling $436 million over three years beginning 2015-16. This funding could only be used to help fund the unfunded liability associated with the Plan and was conditional on a requirement that the University adopt a cap on UCRP covered compensation consistent with the cap mandated for other California public retirement plans by the Public Employees' Pension Reform Act of 2013 (the PEPRA cap). In March 2016 the Regents approved a new retirement choice program for employees hired or rehired on or after July 1, 2016. Under this program new or rehired employees can choose to participate in Pension Choice or Savings Choice.

Employees who choose Pension Choice become members of a new tier (the 2016 Tier) in the current defined benefit plan, UCRP. The 2016 Tier includes a cap on covered compensation for newly hired employees consistent with the PEPRA cap. For 2017, the cap is $118,775 for employees with Social Security and $142,530 for employees without Social Security. All other provisions of the 2016 Tier are the same as for the 2013 Tier, including the employer and employee contribution rates. The employee contribution is 7% and the University contribution is 14% of covered compensation (15% beginning July 1, 2018), but only up to the PEPRA cap for newly hired employees.

In addition to the defined benefit provided by UCRP, employees who chose Pension Choice may be eligible to receive a supplemental benefit under the UC Defined Contribution Plan. The employee contribution is 7% of covered compensation in excess of the PEPRA cap. The University contribution is 5% of all covered compensation for faculty and certain other academic appointees. For all other employees who choose Pension Choice, the University contribution is 3% of covered compensation that exceeds the PEPRA cap. This supplemental DC plan

benefit was adopted to ensure that the University's retirement benefits continue to be competitive.

Employees who choose Savings Choice do not become members of UCRP but instead receive their primary retirement benefits from the UC Defined Contribution Plan. The employee contribution is 7% of covered compensation; the University contribution is 14% (8% to participant accounts and 6% to reduce the UCRP unfunded liability). Contribution amounts are invested in funds selected by the participant. Under Savings Choice covered compensation is not subject to the PEPRA cap.

Savings Choice was adopted as an alternative to mandatory participation in UCRP to make UC more competitive in the labor markets for specific types of employees who typically have several employers during their careers and, therefore, may prefer the portable benefits provided by a defined contribution plan.

Annuitant Health Benefits

As part of the benefit package, UC provides medical and dental benefits for nearly 64,000 eligible retirees, survivors, and their dependents.[3] Eligible individuals who retire from UC with a monthly pension have health care coverage options similar to those offered to active employees. In 2018, the maximum UC contribution will be 70% of retiree medical premiums for in-state Medicare-eligible retirees and 70% of retiree medical premiums for non-Medicare-eligible retirees under age 65. Currently, the University does not pre-fund retiree health benefits and pays its share of health benefits for annuitants on a "pay-as-you-go" basis, whereby current plan premiums and costs are paid from an assessment on payroll of 2.80%. For 2017-18, UC's costs for annuitant health benefits are projected to be $315 million from all fund sources.

As of July 2017, UC has a Total OPEB liability (TOL) for retiree health of $18.7 billion. This amount represents the cost of benefits accrued to date by current faculty, staff, and retirees based on past service. In December 2010, in order to reduce long-term costs and the unfunded liability for retiree health, the Regents approved changes to retiree health benefits. Changes included gradual reductions in the University's aggregate annual contribution to the Retiree Health Program to a floor of 70% (subject to annual review) and a new eligibility formula for all employees hired on or after July 1, 2013.

General Accounting Standards Board (GASB) rules require UC to report accrued unfunded retiree health liabilities on its financial statements. For 2016-17, UC recorded a net retiree health liability accrual of $19.3 billion.

The University's budget plan for 2018-19 includes $7.7 million for increases in retiree health program costs consistent with funding provided for the State's annuitants.

NON-SALARY PRICE INCREASES

Prices of equipment, supplies, utilities, and other non-salary items purchased by the University are also rising. Non-salary items include instructional equipment and supplies such as chemicals, computers, machinery, library materials, and purchased utilities. Increases in non-salary costs without corresponding increases in budgeted funds oblige campuses to find alternative fund sources or efficiencies to cover these costs.

Costs of goods and services purchased by educational institutions, as measured by the Higher Education Price Index (HEPI), typically rise faster than the Consumer Price Index (CPI), though HEPI has tracked more closely to the CPI in recent years. For reasons discussed in the *Operation and Maintenance of Plant* chapter of this document, inflationary pressures are expected to be greater for UC's energy costs than other non-salary items. Longer-term forecasts identify a number of factors that are expected to drive a resurgence of higher energy costs in the next few years. The budget plan includes $32.3 million for non-salary price increases, an adjustment of 2.5%.

[3] For campuses and medical centers as of July 2017 (excludes DOE Labs).

Department of Energy - Office of the National Laboratories

For more than 70 years, the University has played a major public service role as a manager of three Department of Energy (DOE) national laboratories. In this role UC has focused on ensuring the health and vitality of the intellectual environment, promoting the highest integrity and quality standards in research, and sustaining efficient and effective business and operations functions at the laboratories. UC's partnership with DOE has also provided extensive research opportunities for faculty and students, both via collaborations with Lab scientists and through access to unique research facilities at the Labs.

Lawrence Berkeley National Laboratory (LBNL)

The University was awarded a new management and operating contract for LBNL on April 19, 2005. This contract, which had an initial five-year term, has been extended through May 31, 2020 following favorable DOE evaluations. The contract may be extended further through an award term provision that adds contract years, one year at a time, based on excellent annual performance, not to exceed 20 years in total, or to 2025.

Los Alamos National Security and Lawrence Livermore National Security Limited Liability Companies

The University's original contracts for Los Alamos National Laboratory (LANL) and Lawrence Livermore National Laboratory (LLNL) expired on May 31, 2006 and September 30, 2007, respectively. Both national laboratories are now managed by limited liability companies (LLCs) partially owned by the University. Los Alamos National Security, LLC (LANS), was awarded a new management and operating contract for LANL on December 21, 2005 and commenced full operations on June 1, 2006. Lawrence Livermore National Security, LLC (LLNS), was awarded a new management and operating contract for LLNL on May 8, 2007, and commenced full operations on October 1, 2007. Both contracts had initial seven-year terms that may be extended further, based on performance, through an award term provision for additional years, not to exceed 20 years in total. The management and operating contract for LANL currently expires September 30, 2018. The LLNS contract currently expires on September 30, 2021, but may be extended for additional years through award terms.

REVENUE STREAMS

Indirect Cost Reimbursement

Under its contract for LBNL, the University receives indirect cost reimbursement from DOE. In accordance with a Memorandum of Understanding between the University and the State Department of Finance, this indirect cost reimbursement contributes to UC General Fund income and helps support the University's research programs. Negotiations are continuing with DOE on the direct and indirect cost allocation methodology for the coming years.

DOE Management Fee

The University's management fees from LBNL are gross earned amounts before the University's payments of unreimbursed costs. For 2017-18, as a result of negotiations with DOE for the recent LBNL contract extension, LBNL is now eligible to earn a maximum of $6.6 million in management fee revenue. This fee revenue will be used for costs of LBNL-determined research programs not funded by DOE, reserves for future claims, and other appropriate costs associated with LBNL.

Display XX-1: Expenditure Plan for Income from LANS and LLNS (Dollars in Millions) for 2017-18

Contract Non-Reimbursable Compensation for LLC Employees in UC-Designated Key Personnel Positions	$ 2.2
UCOP Oversight	$ 5.2
Post-Contract Contingency Fund	$ 2.9
LLC Fee Contingency Fund (maintained at $7.7 million)	$ 0
UC Laboratory Fees Research Program (of which $400,000 is designated for the UC-NL Student Fellowship Pilot Program)	$11.4
Livermore Lab Foundation	$ 0.3
Accelerating Therapeutics Opportunities in Medicine (ATOM)	$ 1.0
Total allocation 2017-18	$ 23.0

LLC Income

Net income to UC from LANS and LLNS reflects UC's net share of fee income remaining after payment of unreimbursed costs incurred by the LLCs at the two national laboratories and shares to other LLC owners. Any net income available after UC's expenses are allocated is used to fund the Lab Fees Research Program, which fosters collaborative research between the campuses and LLNL and LANL. This year an allocation of $1 million was appropriated to Accelerating Therapeutic Opportunities for Medicine (ATOM). This allocation of LLC fee income provides essential foundational funding for collaborative research space at UCSF's Mission Bay campus and other student, faculty, and clinical researcher participation to enable UCSF and LLNL to become full partners in ATOM. At their July 13, 2017 meeting, the Regents approved an expenditure plan for income from LLNL and LLNS totaling $23 million for 2017-18, as shown in Display XX-1.

Historical Perspective

The University's ability to contribute to the economic, intellectual, and cultural vitality of California is due in large part to critical financial support provided by the State of California since the University's inception. That support remains an essential part of the University's core operating budget today. Historically, the University's State-funded budget has typically reflected the cyclical nature of the State's economy. During times of recession, the State's revenues have declined and appropriations to the University either held constant or were reduced. When the State's economy has been strong, there have been efforts to catch up. Until this past decade, each decade began with significant economic downturns followed by sustained periods of moderate, and sometimes extraordinary, economic growth. The first decade of this century was different – it, too, began with an economic downturn, but there was no sustained recovery. Instead, the State was cast into a second downturn within two years of emerging from the first – and this was the longest and deepest downturn of all. This chapter details the history of State funding of the University over the last several decades.[1]

1995-96 THROUGH 1999-00: THE COMPACT WITH GOVERNOR WILSON

The introduction of Governor Wilson's 1995-96 budget, which included a Compact with Higher Education that ultimately was operational through 1999-00, represented a significant milestone in the recent history of State support for the University. The Compact, described in Display XXI-1, followed years of budget shortfalls that resulted in cuts to the University's core-funded workforce, budget reductions to nearly every aspect of the University's operations, and a substantial gap between the UC faculty salaries and those of its comparison institutions. The goal of the Compact was to provide fiscal stability and allow for enrollment growth through a combination of State General Funds and student fee revenue.

The funding provided under the Compact was to be sufficient to prevent a further loss of financial ground as the University entered a period of moderate enrollment growth of about 1% per year. The Compact was not intended to provide restoration of funding that had been cut during the early 1990s, but it did provide UC with much-needed fiscal stability after years of cuts as well as a framework to begin planning for the future.

Display XXI-1: Provisions of the Compact with Governor Wilson, 1995-96 through 1999-00

- State funding increases averaging 4% per year
- Student fee increases averaging about 10% annually
- Further fee increases in selected professional schools
- At least 33% of new student fee revenue dedicated to financial aid
- Added financial aid through State Cal Grant Program
- Additional funding and deferred maintenance
- $10 million budget reduction each year for four years, i.e., built-in cuts of $10 million associated with expected efficiency savings
- $150 million a year for capital budget
- Priority for life-safety and seismic projects, infrastructure, and educational technology

The Compact of 1995-2000 was remarkably successful, allowing the University to maintain the quality, accessibility, and affordability that have been the hallmarks of California's system of public higher education. The University enrolled more students than the Compact anticipated, particularly at the undergraduate level, and the State provided funding to support them. Declining budgets were stabilized and further deterioration of the University's budget was halted.

Ultimately, the Legislature and the Governor not only honored the funding principles of the Compact, but also provided funding above the levels envisioned in the Compact. This additional funding allowed buyouts of student fee increases, even allowing for reductions in student fees for California resident students; provided $35 million for a number of high priority research efforts; and increased funding for K-14 and graduate outreach by

[1] Information about State funding is also available in the *Sources of University Funds* chapter.

$38.5 million to expand existing programs and develop new ones.

In all, the State provided nearly $170 million in funding above the level envisioned in the Compact. In addition, general obligation bonds and/or lease revenue bonds were provided each year for high priority capital projects.

2000-01: A NEW PARTNERSHIP AGREEMENT WITH GOVERNOR DAVIS

Governor Davis entered office in January 1999 with a commitment to improve California public education at all levels. For UC, his commitment manifested itself in a new Partnership Agreement, described in Display XXI-2, a comprehensive statement of the minimum resources needed for the University to maintain quality and accommodate enrollment growth projected throughout the decade. The Agreement was accompanied by the expectation that the University would manage these resources in such a way as to maintain quality, improve relationships with K-12 schools, and increase community college transfer, among other goals.

The significant infusion of State funding over this period was welcome support for the University. Faculty salaries had once again reached competitive levels, the University was beginning to address salary lags for staff employees, enrollment growth was fully funded, progress was being made to reduce shortfalls in funding for core areas of the budget, student fees were kept low, and support was provided for a variety of research and public service initiatives of importance to the State and the University.

2001-02 THROUGH 2004-05: ANOTHER STATE FISCAL CRISIS

Unfortunately, by 2001-02, the State's fiscal situation began to deteriorate. The University based its budget request on the Partnership Agreement and included information about other high priorities for the University and the State to be funded when the State's economic situation improved. While the Governor's Budget, released in January 2001, proposed full funding for the University's budget request as well as additional funds for initiatives beyond the Partnership Agreement, by the time the May Revise was issued, the State's financial situation had weakened to the point of requiring reductions to funding levels the Governor had originally proposed – and the State was fully engaged in a major fiscal crisis that was to last four years.

Display XXI-2: Provisions of the Partnership Agreement with Governor Davis

- 4% increase to the base budget each year to provide adequate funding for salaries and other cost increases
- Marginal cost funding for enrollment growth
- Further 1% annual increase to the base budget to address chronic underfunding of State support for core areas of the budget
- Acknowledgement of the need to either increase fees or provide equivalent revenue
- Commitment to provide State support for summer instruction
- State bond funding of $210 million annually

The final 2001-02 budget was the first budget in seven years that did not provide full funding of the Partnership Agreement or the earlier Compact. Partnership funds totaling $90 million were eliminated from the University's proposed budget, thereby significantly reducing the funding available for compensation and other fixed costs and eliminating the additional 1% ($30 million) originally proposed for core needs.

The budget did, however, provide an increase of $131 million, which included partial funding of the Partnership. Several initiatives representing high priorities for the Governor and the Legislature were also funded above the level called for under the Partnership, totaling $75 million in one-time and $3 million in permanent funds. UC's State General Fund budget for 2001-02 totaled $3.3 billion.

By the time development of the 2002-03 budget began, the State's fiscal situation had deteriorated markedly, necessitating the unusual action on the part of the Governor and the Legislature to adopt mid-year budget reductions for UC totaling $45.8 million for the 2001-02 budget. The State's budget deficit for 2002-03 eventually grew to $23.5 billion.

The final budget act for the 2002-03 budget provided funding to the University for a 1.5% increase to the base budget — instead of the 4% called for in the Partnership Agreement — to fund compensation, health and welfare benefits, and other increases. Increases to UC's State

General Fund budget totaled $149 million. While the increases to the budget were welcome, the budget also included base budget reductions totaling $322 million. State General Funds provided to the University in the 2002-03 Budget Act totaled $3 billion.

Mid-year cuts instituted in December 2002 (though not formally approved by the Legislature until March 2003) included $70.9 million in further base budget cuts for UC. In addition to cuts targeted at specific programs, $19 million was designated as an unallocated reduction, which the University offset by instituting a mid-year increase in mandatory systemwide student fees.

By the time the mid-year budget cuts were approved for 2002-03, the State was facing a deficit for 2003-04 that was unprecedented in magnitude. With the release of the May Revision, the Governor estimated the deficit to total $38.2 billion. For the University, cuts proposed by the Governor in January totaling $373.3 million and affecting nearly every area of the budget were all approved in the final budget act; this included $179 million in cuts, offset by increases in mandatory systemwide student fees, that otherwise would have been targeted at instructional programs.

The University took $34.8 million of the total cut that had been targeted at improving the University's student-faculty ratio as an unallocated reduction instead. In addition to cuts proposed by the Governor, the Legislature proposed $98.5 million in unallocated cuts that ultimately were included in the final budget. Of the total, $80.5 million was designated as one-time and $18 million was designated as permanent.

The final budget for 2003-04 did include some funding increases; however, most of the Partnership was not funded and the $29 million reduction in 2002-03 to core areas of the budget that had previously been specified as a one-time cut was not restored. The 2003-04 State General Fund budget approved in the budget act for the University was $2.87 billion, $282 million less than the State General Fund budget for 2002-03 adopted in September 2002.

A final round of mid-year reductions occurred in December 2003, totaling $29.7 million. While these mid-year reductions originally were intended by the Governor to be permanent reductions, the budget agreement for 2004-05 restored funding for some programs. Consequently, the mid-year reductions were taken on a temporary basis in 2003-04 and only $15 million associated with the unallocated reduction was ultimately approved as a permanent reduction. That reduction was ultimately offset on a permanent basis as part of the student fee increases approved for 2004-05.

The State remained in fiscal crisis for 2004-05 and the reductions to the University's budget were once again significant. State funds for 2004-05 totaled $2.72 billion, $147 million less than the funding level provided in the previous year. Base budget reductions included another cut to research and a reduction to academic and institutional support. Once again, another cut had originally been targeted at increasing the University's student-faculty ratio, but was instead taken by the University as an unallocated reduction.

Also included in the total reduction to the University's budget was $183.5 million in cuts offset by increases in student fees that otherwise would have been targeted at instructional programs. In 2004-05 undergraduate fees rose 14%, graduate academic fees rose 20%, and graduate professional fees rose 30%, which still generated $5 million less than expected. As a result of the shortfall, campuses were asked to absorb a temporary unallocated reduction of $5 million until fees could be raised again in 2005-06. Nonresident tuition was also increased by 20% in 2004-05 for undergraduate and graduate academic students.

One of the most difficult issues facing the University in the 2004-05 budget related to funding for enrollment. For the first time in recent history, the University was asked to reduce enrollment to help meet budget reductions. The Governor's January budget had proposed a 10%, or 3,200 FTE, reduction in University freshman enrollments and called for the campuses to redirect these students to the California Community Colleges for their first two years of study before accepting them to enroll for their upper-division work at UC, a program referred to as the Guaranteed Transfer Option (GTO). As part of the actions taken on the final budget for 2004-05, the Governor and the Legislature reached a compromise that lowered the reduction in enrollment from 3,200 FTE to 1,650 FTE,

which allowed the University to offer freshman admission to all students who originally received the GTO offer and preserve the Master Plan guarantee of access for eligible students.

Following the compromise, the University immediately sent offers of freshman admission to all eligible students who had not yet received a UC freshman offer. Among the roughly 7,600 applicants initially offered GTO and later offered freshman admission, approximately 1,850 enrolled at UC during 2004-05. Another 500 remained as GTO students with plans to later transfer to the University as upper division students.

Among other actions, the Governor's January budget proposed elimination of all State funds for the Institute for Labor and Employment (ILE) and student academic preparation. As part of the final budget package, the Governor and the Legislature assigned ILE a $200,000 reduction and cut student academic preparation by only $4 million, leaving the program with a total of $29.3 million for 2004-05. The final budget did, however, eliminate all remaining funding for the Digital California Project (K-12 Internet) from UC's budget.

Also, the one-time reduction of $80.5 million from 2003-04 was restored, consistent with the prior year budget act; in addition, consistent with past practice, funding for annuitant health benefits and lease revenue bond payments was provided.

With the 2004-05 budget, as a result of the State's fiscal crisis, the University's State General Fund budget was nearly $1.5 billion below what it would have been if a normal workload budget had been funded for the previous four years. About one-third of this shortfall was accommodated through base budget cuts to existing programs and one-fourth was addressed through student fee increases. The remainder represented foregone salary increases and other unfunded cost increases.

A NEW COMPACT WITH GOVERNOR SCHWARZENEGGER

As the State's economic recovery remained slow, the Governor's proposed solution to the overall deficit included major budget reductions in most areas of the budget, heavy borrowing, and several one-time actions that would only delay further cuts into future years. The University was gravely concerned about the future of the institution and the potential long term effect on quality of the academic enterprise as the State fought its way out of its economic crisis. Governor Schwarzenegger was equally concerned about the University's future and asked his administration to work with the University and with the California State University on a new long term funding agreement for the four year institutions.

Display XXI-3: Provisions of the Compact with Governor Schwarzenegger, 2005-06 through 2010-11

- Base budget adjustments of 3% in 2005-06 and 2006-07 and 4% for 2007-08 through 2010-11
- Additional 1% base budget adjustments for annual shortfalls in core areas beginning in 2008-09 and continuing through 2010-11
- Marginal cost funding for enrollment growth of 2.5% per year
- Student fee increases of 14% in 2004-05 and 2005-06 for undergraduates, and 20% in 2004-05 and 10% in 2005-06 for graduate students, followed by fee increases consistent with Governor's proposed long-term student fee policy beginning in 2007-08
- Annual adjustments for debt service, employer retirement contributions, and annuitant health benefits
- One-time funds and new initiatives when the State's fiscal situation allowed
- At least $345 million of capital outlay annually

A new higher education Compact was announced by Governor Schwarzenegger in May 2004, shown in detail in Display XXI-3. Negotiation of the Compact with Governor Schwarzenegger helped stem the tide of budget cuts that had prevailed for four years.

According to the Compact, beginning in 2007-08, the University was to develop its budget plan each year based on the assumption that fees would be increased consistent with the Governor's proposed long-term student fee policy, which said that that student fee increases should be equivalent to the rise in California per capita personal income or up to 10% in years in which the University determined that providing sufficient funding for programs and preserving academic quality would require more than the per capita increase rate. Revenue from student fees would remain with the University and would not be used to offset reductions in State support. The Compact also called

for UC to develop a long-term plan for increasing professional school fees that considered average fees at other public comparison institutions, the average cost of instruction, the total cost of attendance, market factors, the need to preserve and enhance the quality of the professional programs, the State's need for more graduates in a particular discipline, and the financial aid requirements of professional school students. Revenue from professional school fees would remain with UC and would not be returned to the State.

As with the first iteration of the Compact under Governor Wilson, the new Compact included accountability measures relating to issues that traditionally had been high priorities for the State, including maintaining access and quality; implementing predictable and moderate fee increases; enhancing community college transfer and articulation; maintaining persistence, graduation, and time-to-degree rates; assisting the state in addressing the shortage in science and math K-12 teachers; returning to paying competitive salaries and closing long-term funding gaps in core areas of the budget; and maximizing funds from the federal government and other non-State sources. The University was to report to the Administration and the Legislature on its progress in these areas each year.

With the 2005-06 budget, the Compact represented a true turning point. The first three years of the Compact were very good for the University. In each year, the State provided a normal workload budget and UC began to address major shortfalls that had occurred in the recent fiscal crisis.

Over that three-year period, base budget adjustments helped support salary cost-of-living, market-based, and equity salary adjustments; merit salary increases; health and welfare benefit cost increases; and non-salary price increases. Enrollment workload funding was provided to support significant enrollment growth. In addition, the marginal cost of instruction methodology was revised in 2006-07 to more appropriately recognize the actual cost of hiring faculty and to include a component for maintenance of new space, which had not been adequately funded by the State in recent years. In each of the three years, UC was also able to direct $10 million for a multi-year plan to restore $70 million of unallocated reductions that had originally been targeted at instructional programs. Thus, $30 million was put toward this goal. The State also funded several initiatives during this period, including the Science and Math Initiative, the labor and employment institutes, and the Gallo Substance Abuse Program.

Funding for student academic preparation programs was a major issue in the budget process for all three years. In each year, the Governor's January budget proposed eliminating State funds for this program, leaving only the University's $12 million in support for student academic preparation as called for in the Compact. In the end, the final budget act each year restored the State support, and in 2006-07 included an augmentation of $2 million for community college academic preparation programs. In 2007-08, the University's budget included $500,000 to support an increase for the California State Summer School for Mathematics and Science (COSMOS), an intensive academic four-week residential program for talented and motivated high school students.

Also in 2007-08, the Governor's January budget had proposed elimination of State funds for labor and employment research; however, the Legislature augmented the University's budget by $6 million to restore funding for labor research to its original level when the program was initiated in 2000-01.

In 2005-06 and 2007-08, fee increases were implemented, but in 2006-07 the State provided funding to avoid planned increases in student fees.

There were several initiatives the University had proposed in 2007-08 that were not funded in the final budget. The University had requested that employer and employee contributions to the UC Retirement Plan be reinstated (at an estimated cost of $60 million during the first year); however, the final budget did not include these funds. Also in 2007-08, the January Governor's budget proposed increasing core support for the four California Institutes for Science and Innovation by a total of $15 million to ensure that each Institute had a minimum level of support with which to operate, which in turn would serve as seed money to continue to attract funds from industry and governmental sources.

UC's State-funded budget rose 5% in 2005-06, 8.2% in 2006-07, and 5.9% in 2007-08, rising from $2.8 billion in 2005-06 to $3.26 billion in 2007-08.

2008-09 THROUGH 2011-12: A SECOND STATE FISCAL CRISIS IN A DECADE

The 2008-09 academic year began, fiscally, as a very difficult year for the State. The State's ongoing structural deficit was estimated to be about $6 billion when the University developed its plan for 2008-09 in November 2007 and ended up totaling closer to $14.5 billion when the Governor and the Legislature negotiated a final budget in September 2008. The State addressed its problem through a combination of budget cuts, borrowing, and revenue enhancements such as closing tax loopholes, among other actions.

For the University, the budget was constrained, falling short of funding basic costs. In developing the Governor's Budget, the Department of Finance first "funded" a normal workload budget consistent with the Compact with the Governor, and then proposed a 10% reduction (totaling $332 million) to that higher budget to address the State's fiscal situation. The net result in the Governor's January proposal between 2007-08 and 2008-09 was a reduction to the University's base budget of $108 million (excluding lease revenue bond payments and one-time funds). The Governor's May revision proposed to restore $98.5 million of the cut proposed in January, and this restoration was sustained through the signing of the budget act. With the adoption of a new State spending plan in September 2008, the University's State-funded budget was essentially flat compared to 2007-08, totaling $3.25 billion.

Unfortunately, the nation, and indeed the world, was entering the worst economic recession since the Great Depression of the 1930s. As a result, estimates of revenue contained in the State's September 2008 budget act proved unrealistic and the State began a process of budget negotiations over a ten-month period to resolve its deficit.

First, action occurred in October, after the final budget act had been passed, which required the University to achieve $33.1 million in one-time savings during 2008-09. During November, the Governor called a special session of the Legislature to deal with the State's fiscal crisis. That effort ended with a new 18-month budget package adopted in February 2009 that implemented mid-year cuts for 2008-09 and developed a spending plan for 2009-10 instituting additional cuts. Within a matter of weeks, it became evident the revenue estimates used to adopt the February Special Session budget were too optimistic. Late into the summer, the Legislature adopted its third budget for 2008-09 (after the fiscal year had ended) and a revised spending plan for 2009-10 to resolve an estimated $24 billion deficit.

Again, the State used a combination of spending cuts, borrowing, transfers to the General Fund, and increased revenue (through accounting system changes rather than additional taxes) to resolve the budget deficit. The new 18-month State budget included unprecedented cuts for the University. Reductions in 2008-09 totaled $814 million and included both permanent and one-time cuts. These reductions were partially offset by $716.5 million in one-time funds provided by the federal government through the American Recovery and Reinvestment Act (ARRA) as part of a wide-ranging economic stimulus package intended to jump-start economic recovery in a number of sectors, including education. Many of the reductions for 2008-09 were not approved until after the fiscal year had ended. In addition, much of the ARRA money was not provided until the new fiscal year. Thus, the University carried forward a large negative balance at the end of 2008-09.

The funding cuts for the University's 2009-10 budget reflected the continuing fiscal crisis in the State. When compared to the budget adopted in September 2008 before the mid-year cuts began, the University's 2009-10 State-funded budget was $637 million less, totaling $2.6 billion, a reduction of 20%.

The fiscal turbulence that characterized the 20 months between December 2008 and August 2010 for the State of California did not subside with the adoption of the 2009-10 budget. The State remained unable to develop permanent solutions to address its ongoing fiscal deficit.

Thus, with the presentation in January 2010 of a proposed budget for 2010-11, the Governor once again had difficult choices to make. As a signal of the high priority he placed on maintaining funding for higher education, the Governor

proposed additional funding totaling $370.4 million for UC, including the following:

- restoration of a $305 million one-time cut adopted as part of the 2009-10 budget package;
- $51.3 million to support 5,121 FTE students (at the time, UC estimated it had enrolled more than 14,000 students for whom it had not received State funding); and
- $14.1 million in annuitant benefits.

While the funding only partially addressed the shortfalls UC has experienced since 2007-08, the Governor's proposal was welcome news for UC's students, faculty, and staff, signaling that adequate funding for UC was important to the State of California.

Supporting the budget proposals Governor Schwarzenegger submitted in his January budget, the final budget included an additional $264.4 million for the University of California; another $106 million in one-time ARRA funds was approved in early September. Of this amount, $199 million was permanent funding to partially restore the one-time budget cut agreed to as part of the 2009-10 State budget. When combined with the one-time $106 million in ARRA funds, the total amount restored was $305 million, which is the total restoration the Governor originally proposed. The total also included the $51.3 million to address UC's unfunded enrollment. Another $14.1 million was included for the increase in health care costs for UC's retired annuitants.

An issue of great concern had been the funding of the State's share of the employer contribution to the University's retirement program, estimated to be $95.7 million in 2010-11. The final budget package for 2010-11 did not contain the funding to support this cost. However, the Legislature did approve trailer bill language to eliminate the current statutory language prohibiting any new State General Fund dollars from supporting the State's obligation to the University of California Retirement Program. The Legislature also adopted budget bill language asking for the Legislative Analyst's Office, the Department of Finance, and UC to work together to develop a proposal for how UC's retirement plan would be funded in future years. While this language was vetoed by the Governor, the Legislative Analyst's Office began to present the liability for contributions to the University's retirement program as an issue that must be addressed.

Display XXI-4: Major 2011-12 State Budget Actions (Dollars in Thousands)

Augmentations and Reductions	
Restoration of One-time Cuts	$106,000
Annuitant Health and Dental Benefits	$7,089
Undesignated Reduction (January)	($500,000)
Undesignated Reduction (June)	($150,000)
Trigger Cut (December)	$100,000
Other Initiatives	
UC Merced (one-time)	$5,000
*Total State Funding = $2.274 billion**	

*Subsequent adjustments reduced this total to $2.272 billion.

Other actions approved in the final package included budget language requiring UC to redirect $10 million from existing resources to support planning for a new medical school at UC Riverside and $600,000 to be redirected from existing resources for the Institute of Governmental Studies at UC Berkeley.

While some of the earlier cuts in State support imposed on the University in 2008-09 and 2009-10 were restored in 2010-11, the University continued to face significant unfunded mandatory cost increases and a significant budget shortfall. In November 2010, in addition to requesting further restoration of funding, support for contributions to the UC Retirement Plan, and funding to cover the costs of unfunded enrollments from the State, UC implemented an 8% student tuition and fee increase for 2011-12.

Despite the University's request for an increase in funding, in January 2011 newly-elected Governor Brown proposed the restoration of $106 million that had been funded through ARRA during 2010-11, a $7.1 million increase to support retiree health benefit cost increases, and a $500 million undesignated reduction in State support for UC. This reduction was part of a budget package seeking, through the referendum process, the extension of temporary tax increases that were set to expire in 2011-12. In spring 2011, the Legislature approved the Governor's proposal for UC for 2011-12. UC also faced $362.5 million

in unfunded mandatory costs, bringing UC's total budget gap for 2011-12 at that point to $862.5 million.

Ultimately, the Governor was unable to gain approval for placing the tax extension referendum on the ballot for 2011-12. On June 30, 2011, the Governor signed a second budget package for 2011-12 that included additional targeted reductions for many State programs, including $150 million each for UC and CSU, an assumption of significant revenue increases, and a trigger mechanism for more cuts mid-year if revenue targets were not realized.

The combined reduction for UC totaled $750 million, $100 million of which was not allocated until mid-year. The decrease represented a cut of 26% over the prior year. Combined with the unfunded mandatory cost increases of $360 million, the University's budget shortfall rose above $1 billion.

In response to the additional reduction of $150 million, at their July meeting the Regents approved a 9.6% increase in mandatory systemwide charges, effective for the fall 2011 term, to replace the lost State funding. This increase, combined with the increase approved in November 2010, meant that mandatory charges rose by $1,890, or 18.3%, over 2010-11 charges. These increases covered about 26% of the University's budget shortfall for 2011-12.

The University sought endorsement by the Legislature of its plan to target specific cuts to programs that had received large increases from the State but had not been reviewed to determine their necessity or appropriate funding level. While many of the targeted program cuts were accepted, several were protected by the Legislature.

2012-13: UC BEGINS TO SEE INCREASES IN STATE FUNDING

The budget package adopted by the Governor and the Legislature for 2012-13 resolved about $10 billion of the $15.7 billion gap identified by the Governor in his May Revision, primarily through cuts to Health and Human Services, Social Services, child care, Proposition 98, and other State programs. The 2012-13 State budget assumed adoption of the Governor's revenue-raising initiative (*The Schools and Local Public Safety Protection Act of 2012* – Attorney General, reference number 12-0009) on the November ballot, which was approved by California voters in November 2012 and addressed about $5.6 billion of the gap. (If the Governor's revenue-raising initiative had not been adopted in the November election, the budget called for nearly $6 billion in trigger reductions to various State agency budgets, including $250 million to UC and $250 million to the California State University.)

For the University, the 2012-13 budget included no further cuts to the base budget and provided an augmentation of $89.1 million toward the State's share of the employer

ACTIONS TO ADDRESS BUDGET SHORTFALLS: A SNAPSHOT FROM 2012-13

The 2012-13 academic year marked the fifth year in which UC campuses implemented measures to reduce expenditures, avoid costs, and introduce efficiencies at the local level to address significant budget gaps. Academic and administrative units on the campuses had been assigned cuts ranging in general from 0% to 35%. By 2012-13, more than 4,200 staff had been laid off and more than 9,500 positions had been eliminated or remained unfilled since the beginning of the recent fiscal crisis. Over 180 programs had been eliminated and others consolidated for an estimated savings of over $116 million.

Against this backdrop, it is important to note that at that time, the University was enrolling about 11,500 students for whom it had never received funding from the State. In addition, in 2011-12 and total faculty hires were more than 200 less than total faculty separations, yet enrollment had grown by more than 10,000 students since the fiscal crisis began. All campuses reported moving aggressively toward implementing shared service centers to reduce duplication and streamline processes. All campuses had curtailed faculty recruitment. No campus was applying across-the-board cuts; each used a consultative, deliberative process to determine how reductions should be allocated. All campuses applied disproportionate cuts to administrative programs in order to reduce the impact on academic programs. Campuses also reported taking a wide variety of other measures to avoid or reduce costs and raise new revenue to address budget shortfalls. Examples from campus reports include:

- Between April 2009 and April 2011, Berkeley reduced its staff workforce by more than 900, a 10% drop;
- Riverside reported that the average size of an undergraduate lower-division lecture class increased 33%, from just over 66 in fall 2008 to over 88 in fall 2011; and
- San Francisco eliminated Clinical Nurse Specialist programs in cardiovascular care and neonatal intensive care, as well as nurse practitioner programs.

contribution to the University's retirement plan. The budget also included an augmentation of $5.2 million for annuitant health benefits and $11.6 million for lease revenue bond debt service. The new State funding base for UC in 2012-13 was $2.377 billion, up from $2.271 billion in 2011-12. Considering the $15.7 billion budget gap the Legislature and the Governor were addressing, UC fared well compared to other State agencies.

The budget deal also provided UC with $125 million in deferred tuition buy-out funding in the 2013-14 budget upon passage of the Governor's revenue-raising initiative passes in November. In addition, UC students were spared major cuts to their Cal Grants in the 2012-13 State budget. (The Governor's January budget had proposed several changes to the entitlement provisions, all of which were rejected by the Legislature.)

2013-14: THE BEGINNING OF THE GOVERNOR'S MULTI-YEAR PLAN

When Governor Brown took office, the State faced a $26.6 billion short-term budget problem and estimated annual gaps between spending and revenues of roughly $20 billion. With submission of the 2013-14 State budget to the Legislature in January 2013, the Governor effectively completed his two-year effort to close the state's structural budget gap. His ability to close such a significant budget gap in a short period of time is due in part to the economic recovery at both the national and state levels, as well as the passage of Proposition 30 in November 2012.

The Governor stated his highest budget priority for 2013-14 was education, as reflected in his funding recommendations for K-12, the California Community Colleges, the California State University, and the University of California. For UC and CSU, these recommendations were embodied in a multi- year funding plan that proposed a level of State funding stability for both university systems over a four-year period. The overall base budget for UC increased from $2.377 billion in 2012-13 to $2.844 billion in 2013-14. However, $400 million of that total was debt service related to capital outlay and was not available for operating budget purposes. Consistent with the 2012-13 Budget Act, the budget for 2013-14 included $125 million to buy out the planned tuition and fee increase from 2012-13, and $125.1 million for a 5% base budget adjustment, the first of four years of base budget adjustments under the Governor's multi-year funding plan for UC. Of this $125.1 million, $15 million was directed to the UC Riverside School of Medicine, $10 million was to be used to advance online education, and $3.6 million was to be used to fund the debt service for a $45 million Classroom and Academic Office Building at the Merced campus. The budget also provided $6.4 million for annuitant health benefit costs and a $10.2 million adjustment for lease revenue bond payments. In addition, the budget shifted $200.4 million of State General Obligation Bond debt service to the University's base; with this shift, the University will benefit from future base budget adjustments.

Funding for debt service for capital outlay was changed significantly in 2013-14. With the shift of General Obligation Bond debt service to the University's budget, all State-funded debt service for capital outlay is now contained in the University's base budget. As indicated above, this will be important for base budget increases in the coming years. Moreover, the State Lease Revenue bond debt has been shifted off of the State's balance sheet and onto the University's (General Obligation Bond debt service cannot be shifted from the State). The University refinanced the Lease Revenue bond debt in September 2013 – and by doing so reduced the annual debt service by $85 million for 10 years and by $17 million for the subsequent seven years. Thus, about $185 million of the $221.4 million in UC's base budget that would have been otherwise used to cover the State's debt service payments was available to help cover operating costs in 2013-14. The Legislature adopted budget trailer bill language requiring that the savings be used to address the University's UCRP unfunded liability. Because these are one-time funds, this will temporarily alleviate pressure on the University's operating budget and can help mitigate the fact that there is no source of funding identified for the cost increases associated with the tuition-funded portion of the University's core operating budget.

Consistent with the Governor's request, there was no tuition increase proposed for 2013-14; tuition and fees remained flat at 2011-12 levels.

2014-15: ANOTHER YEAR OF FISCAL CONSTRAINT

The 2014-15 budget year marked the second year of the Governor's multi-year plan for UC. In addition to the base budget adjustment proposed by the Governor, other additional funds were targeted for the Governor's and Legislature's priorities. Specifically, the 2014-15 budget included the following provisions:

- an additional $142.2 million from the State General Fund, representing a 5% increase in the University's base State General Fund budget (which equates to a 1.8% increase in total core funds).
- $2 million in one-time funding for the Labor Centers at UC Berkeley and UC Los Angeles;
- $2 million in one-time funding to establish the California Blueprint for Research to Advance Innovations in Neuroscience (Cal BRAIN) program intended to leverage federal funding opportunities to accelerate the development of brain mapping techniques;
- $15 million from the Proposition 63 mental health fund for the Behavior Health Centers for Excellence of California at UC Davis and UC Los Angeles (with three years to expend).

The final budget specified that $2 million of the permanent State funds provided to the University must be used for the Labor Research Centers at the Berkeley and Los Angeles campuses (in addition to the one-time funds noted above) and that $770,000 must be used for the Statewide Database Project at the Berkeley campus. In addition, the State budget included funding for the first year of the new Middle Class Scholarship Program, which provides new assistance to students at UC and CSU with family incomes up to $150,000. The University estimates that UC students received approximately $30 million from this program in 2014-15. This funding for UC students will grow to over $100 million by 2017-18 as the program is phased in. UC students also received an additional $2 million in Cal Grants in 2014-15 due to a modest increase in Cal Grant B awards.

The budget package also included $50 million in one-time funds for the Governor's Innovation Awards, for the three higher education segments for programs that promote increased graduation rates, decreased time to degree, or improved Community College transfer.

Finally, the budget authorized funding for the UC Berkeley Tolman Hall Seismic Replacement Project, in addition to projects that had already been authorized for 2014-15.

Upon taking office, President Napolitano pledged that tuition and fees would not rise in 2014-15 while the University developed a long-term plan to keep student fees as affordable as possible and end sudden spikes in tuition levels in response to reduced State support. Thus, tuition and fees remained flat in 2014-15.

Despite the University's efforts to secure additional State funds in the 2014-15 budget, the final budget provided no new permanent funds for key components of the University's 2014-15 budget plan, including the State's share of the employer contribution to the University of California Retirement Plan, enrollment growth, and reinvestment in academic quality. The University's budget plan requested $35 million from the State for the first year of a multi-year effort to reinvest in critical areas of the academic program that have been adversely affected by the State's recent fiscal crisis, such as reducing the student-faculty ratio, addressing the current competitive gap in faculty and staff salaries, increasing graduate student support, increasing undergraduate instructional support, or supporting start-up costs for new faculty.

The State funds provided in 2014-15 were a welcome departure from past years' base budget cuts. However, the State funds were insufficient alone to fund even mandatory cost increases, let alone support other high-priority costs and begin to address the investment in quality. With tuition and fees held flat, more than half of the University's core budget had no source of funds to support mandatory and high-priority cost adjustments.

2015-16 and 2016-17: A NEW BUDGET FRAMEWORK WITH THE GOVERNOR

With enactment of the 2015-16 State Budget Act, the University of California found itself in a much better situation than it was in a year ago. The 2015-16 budget signed by the Governor included the principal elements of the funding framework that UC negotiated with the Governor and which were incorporated into the Governor's May Revision. The framework agreed to with the Governor would provide the University with base budget adjustments

of 4% annually over the next four years, through 2018-19, extending by two years the horizon of the Governor's original multi-year funding plan for the University. These base adjustments would be expected increase State funding over the next four years by $507 million.

Under the agreement with the Governor, the University would also receive $436 million in one-time funds over the next three years in Proposition 2 debt repayment funds for UCRP, including $96 million in 2015-16, $170 million in 2016-17, and $170 million in 2017-18. As specified in the State Constitution, Proposition 2 funds must be supplemental above Regent-approved contribution rates and must be used to help pay down the unfunded liability associated with UCRP. This funding was contingent upon the Regents approving of a cap on pensionable salary at the same rate as the State's Public Employee Pension Reform Act (PEPRA) cap for the defined benefit plan for employees hired on or after July 1, 2016. The President convened a retirement options task force to advise on the design of new retirement options that would include the new pensionable salary cap consistent with PEPRA. The retirement options were brought to the Regents at the March 2016 meeting for review and were approved. The pension cap previously in place was equivalent to the Internal Revenue Service level, set at $265,000. Under the new design, for employees hired on or after July 1, 2016, pensionable salaries would be capped at $117,020 in 2015-16, for those in the defined benefit plan. New employees will have the opportunity to choose a fully defined contribution plan as a retirement option as an alternative to the PEPRA-capped defined benefit plan. For represented groups retirement options will be subject to collective bargaining.

These changes to UC's pension obligations were a key priority of the Legislature and the Governor. The one-time money from Proposition 2 could be combined with additional internal borrowing to improve the funding status of UCRP.

The framework also provided $25 million in one-time funding for deferred maintenance. This was the first time since 2002 that the State provided funding to the University to help address its aging physical plant. The $25 million in one-time Cap and Trade funds for energy projects proposed in the framework negotiated by the President and the Governor were not included in the final budget act.

The framework also called for no tuition increases in 2015-16 and 2016-17, with tuition increases generally pegged to the rate of inflation to be implemented beginning in 2017-18. The Student Services Fee was to increase 5% ($48) in 2015-16 and each year thereafter with the customary one-third of the increase being directed to financial aid. Fifty percent of the remaining revenue generated from the increase would be used to enhance student mental health services, consistent with the University's priority to build resources to support mental health programs, and the remaining 50% would be distributed to support other student services programs consistent with the Regental policy on the Student Services Fee.

The framework also acknowledged the University's plan to increase nonresident supplemental tuition by up to 8% for 2015-16 (or $1,830) and 2016-17 and 5% thereafter, as approved by The Regents in May 2015. The framework also recognized the increases in PDSTs approved by the Regents in November 2014 for existing and new programs other than the law schools. The framework called for no increases in law school PDSTs for the next four years.

In addition to these funding elements, the budget framework included a number of performance-related provisions. These provisions were the subject of considerable discussion and examination during the Select Advisory Committee meetings and covered five basic performance areas involving delivery of the academic program. These are described in greater detail in the *Cross-Cutting Issues* chapter of this document.

2015-16 Budget Act Funding. In the final budget negotiations, the Legislature approved all of the major funding elements of the framework agreed to between UC and the Administration and as set forth in the Governor's May Revision. As noted above, the funding framework did not, however, address one significant element of UC's long-term funding plan: UC's desire to significantly increase enrollment of California students. While independent groups have confirmed that UC has met its enrollment obligations under the Master Plan even through the recession of the last several years, enrollment growth is a

key priority for future years – a goal that is shared with the Legislature. The final 2015-16 budget language indicated that the University would receive an additional $25 million above its 4% base budget adjustment if it could demonstrate in the spring of 2016 that it had admitted a sufficient number of resident undergraduate students to achieve an increase in 2016-17 of 5,000 students over the 2014-15 academic year. As explained in more detail in the *General Campus Instruction* chapter of this document, the University met this enrollment goal and received the $25 million at the end of the 2015-16 fiscal year.

The final budget also provided an additional $4 million in permanent funding for the Labor Centers at the Berkeley and Los Angeles campuses above the 4% base budget adjustment and above the $2 million in permanent funding directed to the centers from the University's base support in 2014-15. The budget also included $1 million in one-time funds for the Wildlife Health Center at the Davis campus.

The final budget also called for UC to redirect funds within its existing base budget to fund several items that are priorities for various legislators, including planning for a School of Medicine at the Merced campus, the California DREAM Loan Program, and the Statewide Data project at the Berkeley campus.

For 2015-16, as provided in Education Code Sections 92493 and 92496 (AB 94), the Department of Finance also authorized the University to finance 15 capital outlay projects totaling $296.7 million with its State General Fund support appropriation.

Language accompanying the funding called for several reports and actions by the University and others.

One provision indicated the Legislature's intent that UC use revenue from enrollment of nonresident students to help fund the 2016-17 enrollment increase. Language in the budget also called for several reports: a report on all "University fund sources legally allowable" to support costs for education; another three-year financial sustainability plan, which was to again be approved by the Board of Regents; and another on the use of funds for support services to increase graduation rates for low-income and underrepresented populations.

In addition, the University was asked to take two more actions: revise Market Reference Zones for Senior Management Group employees to include comparable positions in State government and post information on its website that explains the details related to the subcategories of personnel within the Managers and Senior Professional personnel category, disaggregating personnel categories by fund source.

The higher education "trailer bill," which was legislation that accompanied the budget to implement certain related statutory provisions, also included two studies of note: one asked the Legislative Analyst to study the need for additional new campuses for CSU and for UC and another asked the California State University to conduct a new eligibility study with the University's participation.

By adopting the provisions of the funding framework agreed to by the Governor and the University, the budget approved by the Legislature put UC in a strong financial position that provided the University with predictable and stable support for the next four years and offered students and their families the certainty to confidently budget for the costs of a UC education. This outcome resulted from the spirited debate over appropriate funding levels for higher education in California sparked in large part by the plan adopted by the Board in November.

2016-17 Budget Act Funding. For 2016-17, ongoing State General Funds totaled $3.279 billion, a 4.6% increase over 2015-16. This included a 4% base budget adjustment and $91 million in one-time funds for a variety of programs of interest to the University, the Legislature, and the Governor. In addition, the State provided $171 million of Proposition 2 funding to help address the unfunded liability associated with the University of California Retirement Plan (UCRP), consistent with the budget framework agreement, and $3 million in one-time additional support from the State Transportation Account for the Institutes of Transportation Studies.

With regard to enrollment funding, the final budget included a compromise reached between the Legislature and the Governor to fund enrollment growth of 2,500 FTE California resident undergraduates with $18.5 million. Similar to the arrangement in the prior year budget, UC was required to

demonstrate by May 1, 2017 that it had taken sufficient action to increase enrollment of California resident undergraduate students by this number in 2017-18 in order to receive the enrollment funding. The level of enrollment increase was consistent with UC's own plan for growing enrollment by 2,500 undergraduates in 2017-18 and in 2018-19. However, the level of funding was less than the $10,000 per student that the University requested; the amount provided equated to about $7,400 per student, equivalent to the amount CSU receives per student from the State. This was higher than the $5,000 per student provided by the State for enrollment growth in 2016-17.

In addition, the University was requested to adopt a policy that specifies a limit on nonresident enrollment. A nonresident undergraduate enrollment policy was developed and presented to the Board in May 2017. The Regents approved the policy, which caps nonresident enrollment on five campuses at 18%, with the other four campuses capped at the proportion that each campus enrolls in the 2017-18 academic year.

As noted above, the Budget Act included funding for several initiatives, including support for the Innovation and Entrepreneurship initiative, a program the University requested funding for early in the legislative process through a bill introduced by Assemblymember Jacqui Irwin. One-time funds totaling $22 million were provided to develop the infrastructure necessary to support innovative start-ups by sponsoring business training, incubation space, proof-of-concept support, and affiliations with local industry, among other activities. Funding for this initiative demonstrated the State's support for the crucial role UC research plays in the economic development of California.

Also, as part of a package of initiatives proposed by President Pro Tem of the Senate Kevin de León, the budget included $20 million in one-time funds for support services for low-income students and students from underrepresented minority groups, including students who were enrolled in school districts which are designated as Local Control Funding Formula districts. These districts enroll a large proportion of students who are English language learners, who qualify for free or reduced-price meals, or who are foster youth (defined as "unduplicated pupils" in the California Education Code Section 42238.02).

The final budget also included one-time funds for the following purposes:

- $35 million for deferred maintenance;
- $5 million for a firearms research center;
- $4 million for the development of online classes courses for K-12 students;
- $2 million for a program promoting best practices in equal employment opportunity to help enhance faculty diversity;
- $2 million for the Wildlife Health Center at the Davis campus for support of local marine mammal stranding networks;
- $500,000 for the Underground Scholars Initiative at the Berkeley campus; and
- $100,000 for the Wildlife Health Center for large whale entanglement programs.

Display XXI-5 provides a brief outline of State budget actions since 2000-01.

2017-18 Budget Act Funding. For 2017-18, the University will receive overall ongoing State support of about $3.4 billion, including a projected $178.1 million for general obligation bond debt service. This includes a 4% base budget increase of about $131 million. In addition, the University will receive $176 million in one-time funding, including the third installment of Proposition 2 funds in the amount of $169 million toward the unfunded liability associated with the University of California Retirement Plan. The Act also replaces $50 million of State General Funding with $50 million of revenue from the Tobacco Tax Act of 2016 (Proposition 56), to be used for graduate medical education.

The 2017-18 State Budget Act includes an expectation that the University will enroll at least 1,500 more resident undergraduate students in 2018-19 compared to 2017-18. The Act acknowledges that the State and UC should share the cost of enrollment growth. As part of that cost-sharing, the Act requests that UC, the Legislature, and the Department of Finance identify funds to support enrollment growth from funds that UC currently expends on systemwide programs or at UCOP. The budget also includes $5 million in new General Fund support to support enrollment growth of 500 graduate students in 2017-18.

The budget conditions expenditure of $50 million of the University's State General Fund appropriation upon UC

demonstrating to the Department of Finance that it has met five conditions. First, the University must demonstrate completion of an activity-based costing pilot at two additional campuses. Second, attain a ratio at each UC campus except Merced and San Francisco of at least one entering transfer student for every two entering freshman students beginning in the 2018–19 academic year. Third, implement the California State Auditor's recommendations by April 1, 2018. Fourth, adopt a policy that does not provide supplemental retirement payments for any new employee designated to be in the Senior Management Group no later than May 1, 2018. Fifth, provide detailed reporting on revenues and expenditures as highlighted in the recent audit.

The final budget also includes one-time funds for the following purposes:

- $2.5 million to address food insecurity;
- $2 million for a program promoting best practices in equal employment opportunity to help enhance faculty diversity;
- $2 million for the Wildlife Health Center at the Davis campus for support of local marine mammal stranding networks; and
- $100,000 for the Wildlife Health Center for large whale entanglement programs.

Finally, the 2017-18 State Budget Act creates a separate line-item appropriation of State General Funds to replace funding that UCOP would otherwise have received through two campus assessments. The general campus assessment used to support a portion of the UCOP budget is replaced by a State General Fund appropriate of $296.4 million, and a separate assessment attributable to UCPath is replaced by a State General Fund appropriate of $52.4 million.

Display XXI-5: The UC Budget Since 2002-03

2002-03 *Total State Funding: $3.15 billion*

With the State in fiscal crisis, Partnership funding was provided for enrollment and annuitant benefits, but UC's base increase was lower than planned and partially offset by fee increases, and cuts were made throughout the University.

2003-04 *Total State Funding: $2.87 billion*

Large cuts were made throughout the enterprise, as high as 50% in outreach, but increases to enrollment and annuitant benefits were still provided.

2004-05 *Total State Funding: $2.70 billion*

The effect of the State budget on UC peaked, with increases in student fees and the student-faculty ratio, a smaller freshman class, and large budget reductions throughout the University.

2005-06 *Total State Funding: $2.84 billion*

A return to increases in base budget and enrollment funding and few targeted cuts through the new Compact with Governor Schwarzenegger signaled a turning point in UC's budget after four years of reductions.

2006-07 *Total State Funding: $3.1 billion*

The State provided Compact funding, as well as additional funding for outreach and research, and provided students with fee increase buyouts.

2007-08 *Total State Funding: $3.26 billion*

Compact funding was again available, with some additional funding for outreach.

2008-09 *Total State Funding: $2.42 billion*

With the onset of another fiscal crisis, the Compact was funded, but equivalent unallocated cuts were assigned and institutional support was reduced.

2009-10 *Total State Funding: $2.59 billion*

The Compact was again funded, but equivalent unallocated cuts were assigned; in addition, large and wide-ranging cuts were assigned throughout the University.

2010-11 *Total State Funding: $3.15 billion*

The Governor prioritized investing in higher education, which was reflected in the final State budget with partial restoration of earlier cuts and new funding for enrollment.

2011-12 *Total State Funding: $2.27 billion*

With the Governor unable to place a referendum to extend temporary tax increases on the ballot, higher education was assigned cuts totaling $1.7 billion. Also, for the first time, revenue from student tuition and fees exceeded revenue from the State.

2012-13 *Total State Funding: $2.38 billion*

While most other State agencies received more budget cuts, the University received a budget augmentation to help fund the State's share of the employer contribution to the University's retirement plan. Given the passage of the Governor's revenue-raising initiative in November 2012, no further cuts occurred to the University's budget. A planned tuition increase was avoided with the promise of tuition buy-out funds provided in 2013-14, tied directly to the success of if Proposition 30 on the November ballot.

2013-14 *Total State Funding: $2.84 billion*

The State began implementing the Governor's multi-year funding plan for higher education, increasing the University's base budget 5% and marking the end of a half-decade of base budget cuts and extreme fiscal volatility in State funding. Tuition was held flat.

2014-15 *Total State Funding: $2.89 billion*

The 5% base budget adjustment proposed by the Governor was provided to UC; however, with tuition held flat at the 2011-12 level, there was insufficient funding to meet UC's basic mandatory costs.

2015-16 *Total State Funding: $3.14 billion*

UC's base budget was adjusted upward by 4% and tuition was once again held flat. One-time funds were provided for UCRP, deferred maintenance, and energy projects. A new framework agreed to with the Governor provided a stable base from which to plan.

2016-17 *Total State Funding: $3.28 billion*

Consistent with the framework agreement with the Governor, UC's base budget was adjusted upward by 4% and tuition was held flat. One-time funds were made available for a variety of initiatives of importance to the University, Governor, and Legislature.

2017-18 *Total State Funding: $3.41 billion*

Per the framework agreement with the Governor, UC's base budget was adjusted upward by 4%. In line with the framework, tuition was raised for the first time in six years. The Legislature directly appropriated funding for UCOP and UCPath.

Appendix Display 1: Budget for Current Operations and Extramurally Funded Operations (Dollars in Thousands)

INCOME		
	2016-17 Actual	2017-18 Estimated
BUDGET FOR CURRENT OPERATIONS		
General Fund		
State of California	$ 3,278,742	3,373,693
GO Bond Debt Service	217,093	174,682
UC Sources	1,418,345	1,532,415
Total General Funds	$ 4,914,180	5,080,790
Restricted Funds		
State of California	$ 60,868	213,539
U. S. Government Appropriations	20,496	21,000
Educational, Student Services & Professional School Fees	3,441,946	3,639,048
Extension, Summer Session & Other Fees	948,206	981,376
Teaching Hospitals	10,394,923	11,330,466
Auxiliary Enterprises	1,228,100	1,289,505
Endowment Earnings	230,374	286,737
Other	4,899,826	5,261,479
Total Restricted Funds	$ 21,224,739	23,023,150
TOTAL BUDGET FOR CURRENT OPERATIONS	$ 26,138,919	28,103,940
EXTRAMURALLY FUNDED OPERATIONS		
State of California	$ 318,522	319,000
U.S. Government	2,851,914	2,852,000
Private Gifts, Contracts & Grants	2,020,030	2,060,431
Other	629,430	654,000
TOTAL EXTRAMURALLY FUNDED OPERATIONS	$ 5,819,896	5,885,431
DEPARTMENT OF ENERGY LABORATORY (LBNL)	$ 771,570	858,000
TOTAL OPERATIONS	$ 32,730,385	34,847,371

EXPENDITURES		
	2016-17 Actual	2017-18 Estimated
BUDGET FOR CURRENT OPERATIONS		
Instruction:		
General Campus	$ 3,476,400	3,593,409
Health Sciences	2,810,672	3,068,027
Summer Session	17,138	16,520
University Extension	281,670	290,120
Research	848,533	964,074
Public Service	312,595	328,467
Academic Support: Libraries	293,187	309,321
Academic Support: Other	1,633,699	1,754,480
Teaching Hospitals	10,394,923	11,330,466
Student Services	1,020,168	1,078,008
Institutional Support	1,397,507	1,445,168
Operation and Maintenance of Plant	678,799	677,705
Student Financial Aid	1,396,175	1,484,621
Auxiliary Enterprises	1,228,100	1,289,505
Provisions	126,955	299,367
Program Maintenance: Cost Increases	222,398	174,682
TOTAL BUDGET FOR CURRENT OPERATIONS	$ 26,138,919	28,103,940
EXTRAMURALLY FUNDED OPERATIONS		
Sponsored Research	$ 3,746,091	3,837,576
Other Activities	2,073,805	2,047,855
TOTAL EXTRAMURALLY FUNDED OPERATIONS	$ 5,819,896	5,885,431
DEPARTMENT OF ENERGY LABORATORY (LBNL)	$ 771,570	858,000
TOTAL OPERATIONS	$ 32,730,385	34,847,371

Appendix Display 2: University of California Income and Funds Available (Dollars in Thousands)

		2016-17 Actual	2017-18 Estimated
STATE APPROPRIATIONS			
General Fund	$	3,278,742	3,373,693
GO Bond Debt Service		217,093	174,682
Special Funds		60,868	213,539
TOTAL, STATE APPROPRIATIONS	$	3,556,703	3,761,914
UNIVERSITY SOURCES			
General Funds Income			
Student Fees			
Nonresident Supplemental Tuition	$	1,013,965	1,124,562
Application for Admission and Other Fees		50,934	52,462
Interest on General Fund Balances		2,047	2,047
Federal Contract & Grant Overhead		320,581	320,581
Overhead on State Agency Agreements		20,263	20,263
Other		10,555	12,500
Total UC General Fund Income	$	1,418,345	1,532,415
Special Funds Income			
GEAR UP State Grant Program	$	5,000	3,500
United States Appropriations		20,496	21,000
Local Government		156,198	156,000
Student Fees			
Tuition [Educational Fee]		2,896,443	3,048,417
Student Services Fee [Registration Fee]		254,277	276,029
Professional School Fees		291,226	314,602
University Extension Fees		281,670	290,120
Summer Session Fees		17,318	16,520
Other Fees		649,218	674,736
Sales & Services - Teaching Hospitals		10,394,923	11,330,466
Sales & Services - Educational Activities		3,428,927	3,771,820
Sales & Services - Support Activities		908,094	935,335
Endowments		230,374	286,737
Auxiliary Enterprises		1,228,100	1,289,505
Contract and Grant Off-the-Top Overhead		55,479	55,479
DOE Management Fee		31,021	22,000
University Opportunity Fund		241,957	242,000
Other		73,150	75,345
Total Special Funds	$	21,163,871	22,809,611
TOTAL, UNIVERSITY SOURCES	$	22,582,216	24,342,026
TOTAL INCOME AND FUNDS AVAILABLE	$	26,138,919	28,103,940

Note: Excludes extramural funds.

Appendix Display 3: SAPEP State General Funds and University Funds Budgets (Dollars in Thousands)

This table shows the budget for each SAPEP program in 1997-98, prior to significant funding augmentations; in 2000-01, when SAPEP funding reached its peak; in 2008-09, representative of a few years of stable funding for SAPEP programs; and in 2009-10 and 2011-12, when SAPEP programs were subject to budget reductions. 2012-13 through 2016-17 budget levels remain unchanged from 2011-12 levels.

	1997-98	2000-01	2008-09	2009-10	2011-12	2016-17
Direct Student Services Programs						
Community College Transfer Programs [1]	$1,718	$5,295	$3,279	$3,058	$2,413	$2,413
EAOP	4,794	16,094	8,914	8,416	7,356	7,356
Graduate and Professional School Programs	1,893	8,575	2,661	2,623	2,408	2,408
MESA Schools Program	4,169	9,355	4,861	4,394	3,806	3,806
MESA Community College Program	22	1,309	327	327	327	327
Puente High School Program	-	1,800	1,051	980	793	793
Puente Community College Program	162	757	450	419	340	340
Student-Initiated Programs	-	-	440	440	388	388
UC Links	-	1,656	694	622	622	622
Statewide Infrastructure Programs						
ASSIST	360	360	429	389	377	377
Community College Articulation	-	-	600	600	600	600
Longer-Term Strategies						
K-20 Regional Intersegmental Alliances [2]	-	15,591	1,395	1,361	1,209	1,209
Direct Instructional Programs						
Preuss Charter School	-	1,000	1,000	1,000	-	-
UC Scout (online courses, formerly UC College Preparation)	-	8,400	3,106	3,059	2,411	2,411
Other Programs						
Evaluation	-	1,386	1,180	1,077	855	855
Other Programs [3]	203	3,887	936	829	652	652
Programs that have been eliminated or consolidated [4]	4,750	9,717	-	-	-	-
Total	$18,071	$85,182	$31,323	$29,594	$24,557	$24,557
General Funds	$16,996	$82,243	$19,323	$17,594	$12,557	$12,557
University Funds	$1,075	$2,939	$12,000	$12,000	$12,000	$12,000

[1] Includes an additional $2 million beginning in 2006-07 for the UC/Community College Transfer Initiative for Access and Success.
[2] Formerly School-University Partnerships.
[3] Currently includes University-Community Engagement, ArtsBridge, and other programs.
[4] Includes Test Preparation, Dual Admissions, Gateways, Informational Outreach and Recruitment, Central Valley Programs, and UC ACCORD.

Appendix Display 4: Expenditures by Fund Category, 1980-81 Through 2017-18 (Dollars in Thousands)

	Core Funds[1]	Medical Centers	Other Sales and Services[2]	Government Contracts and Grants[3]	Private Support[4]	Other Sources[5]	Total
1980-81	$1,238,071	$464,817	$395,382	$1,491,715	$97,746	$66,024	$3,753,755
1981-82	1,310,575	521,330	464,184	1,647,181	116,411	51,494	4,111,175
1982-83	1,356,921	552,051	487,739	1,762,389	134,328	55,801	4,349,229
1983-84	1,375,660	599,469	520,933	2,009,905	155,344	65,769	4,727,080
1984-85	1,713,333	656,730	585,721	2,301,626	173,915	99,711	5,531,036
1985-86	1,930,560	721,270	678,215	2,463,841	198,812	101,484	6,094,182
1986-87	2,060,597	791,311	786,544	2,624,563	222,154	120,950	6,606,119
1987-88	2,210,321	889,243	852,459	2,763,853	243,764	114,455	7,074,095
1988-89	2,341,127	1,002,931	934,816	3,004,112	272,735	126,654	7,682,375
1989-90	2,479,193	1,135,818	1,079,927	3,136,119	320,818	160,336	8,312,211
1990-91	2,553,581	1,384,994	1,120,365	3,177,571	339,355	159,856	8,735,722
1991-92	2,616,360	1,499,059	1,159,711	3,391,898	365,686	200,862	9,233,576
1992-93	2,583,420	1,570,590	1,253,884	3,549,713	392,237	249,080	9,598,924
1993-94	2,536,244	1,577,936	1,332,303	3,487,858	402,886	211,889	9,549,116
1994-95	2,652,691	1,609,225	1,461,064	3,541,181	456,243	210,963	9,931,367
1995-96	2,749,966	1,821,352	1,627,301	3,486,237	485,694	233,928	10,404,478
1996-97	2,924,341	1,906,454	1,660,431	3,789,774	540,194	245,973	11,067,167
1997-98	3,079,198	1,820,062	1,751,567	4,071,680	602,666	292,693	11,617,866
1998-99	3,461,295	1,811,702	1,936,911	4,459,237	675,989	343,902	12,689,036
1999-00	3,675,637	2,109,383	2,043,538	4,595,925	758,731	359,378	13,542,592
2000-01	4,206,044	2,662,843	2,055,110	4,831,201	851,127	335,733	14,942,058
2001-02	4,460,637	2,880,079	2,098,019	5,463,526	926,355	310,351	16,138,967
2002-03	4,395,681	3,114,683	2,218,477	6,294,983	1,002,227	352,736	17,378,787
2003-04	4,492,468	3,378,824	2,324,417	6,462,902	1,073,828	398,059	18,130,498
2004-05	4,490,079	3,579,653	2,510,067	6,575,227	1,107,101	432,874	18,695,001
2005-06	4,781,469	3,705,005	2,718,023	6,710,678	1,235,546	467,634	19,618,355
2006-07	5,083,748	4,126,066	3,049,629	4,755,621	1,338,356	516,046	18,869,466
2007-08	5,427,851	4,554,364	3,533,777	3,649,040	1,512,588	530,338	19,207,958
2008-09	4,980,495	4,913,330	3,693,711	3,324,549	1,632,435	517,999	19,062,519
2009-10	5,719,980	5,131,765	3,705,881	3,913,403	1,633,590	500,655	20,605,274
2010-11	5,921,179	5,595,563	4,107,989	4,256,858	1,684,369	449,128	22,015,086
2011-12	6,086,352	6,288,149	4,803,190	4,155,490	1,781,530	459,013	23,.573,724
2012-13	6,244,066	6,717,232	5,324,980	4,059,432	1,820,887	606,151	24,772,748
2013-14	6,622,008	7,395,124	5,267,674	4,303,103	1,941,341	471,421	26,000,671
2014-15	7,035,207	7,939,016	6,282,346	3,978,141	2,009,279	395,228	27,639,217
2015-16	7,364,848	9,467,149	6,835,022	4,076,941	2,055,270	473,254	30,272,484
2016-17	8,009,129	10,394,923	7,298,955	4,028,370	2,250,404	401,607	32,383,388
2017-18 Est.	8,370,815	11,330,466	7,788,036	4,267,039	2,347,168	394,824	34,498,348

[1] **Core funds** consists of State General Funds [Excluding GO bond debt service & one-time State contribution to UCRS], UC General Funds, American Recovery and Reinvestment Act (2009) funds, and student tuition and fees.

[2] **Other sales and services** revenue includes support for clinical care staff; auxiliary enterprises such as housing and dining services, parking facilities, and bookstores; University Extension; and other complementary activities such as museums, theaters, conferences, and publishing.

[3] **Government contracts and grants** include direct support for specific research programs as well as student financial support and DOE Laboratory operations.

[4] **Private Support** includes earnings from the Regents' endowment earnings, grants from campus foundations, and other private gifts, grants, and contracts from alumni and friends of the University, foundations, corporations, and through collaboration with other universities.

[5] **Other sources** include indirect cost recovery funding from research contracts and grants and other fund sources.

Appendix Display 5: Core Funds Expenditures by Fund Source, 1980-81 Through 2017-18 (Dollars in Thousands)

	State General Funds	UC General Funds[1]	ARRA Funds[2]	Tuition	Student Services Fees	Professional Degree Supplemental Tuition	Total
1980-81	$1,074,584	$66,219	-	$42,958	$54,310	-	$1,238,071
1981-82	1,097,293	93,252	-	61,602	58,428	-	1,310,575
1982-83	1,125,425	86,349	-	85,705	59,442	-	1,356,921
1983-84	1,110,012	96,695	-	102,984	65,969	-	1,375,660
1984-85	1,457,144	89,100	-	97,322	69,767	-	1,713,333
1985-86	1,641,741	119,936	-	97,025	71,858	-	1,930,560
1986-87	1,788,304	97,462	-	99,357	75,474	-	2,060,597
1987-88	1,888,872	126,870	-	112,102	82,477	-	2,210,321
1988-89	1,970,047	160,524	-	124,815	85,741	-	2,341,127
1989-90	2,076,662	172,676	-	135,944	93,911	-	2,479,193
1990-91	2,135,733	166,407	-	148,891	100,750	$1,800	2,553,581
1991-92	2,105,560	182,250	-	223,690	103,046	1,814	2,616,360
1992-93	1,878,531	237,954	-	360,883	104,232	1,820	2,583,420
1993-94	1,793,236	223,104	-	418,623	99,461	1,820	2,536,244
1994-95	1,825,402	246,121	-	473,374	104,423	3,371	2,652,691
1995-96	1,917,696	249,124	-	479,480	90,238	13,428	2,749,966
1996-97	2,057,257	270,258	-	473,991	102,182	20,653	2,924,341
1997-98	2,180,350	281,911	-	480,804	105,304	30,829	3,079,198
1998-99	2,517,773	301,996	-	489,944	114,096	37,486	3,461,295
1999-00	2,715,762	340,779	-	460,913	114,014	44,169	3,675,637
2000-01	3,191,614	370,631	-	472,287	127,904	43,608	4,206,044
2001-02	3,322,659	428,115	-	525,943	130,663	53,257	4,460,637
2002-03	3,150,011	480,256	-	577,056	130,956	57,402	4,395,681
2003-04	2,868,069	549,393	-	860,935	131,596	82,475	4,492,468
2004-05	2,698,673	544,258	-	993,607	143,548	109,993	4,490,079
2005-06	2,838,567	554,151	-	1,118,723	147,278	122,750	4,781,469
2006-07	3,069,339	560,594	-	1,171,290	161,427	121,098	5,083,748
2007-08	3,257,409	577,299	-	1,299,590	165,575	127,978	5,427,851
2008-09[2]	2,418,291	616,872	$268,500	1,358,365	164,856	153,611	4,980,495
2009-10[2]	2,591,158	626,413	448,000	1,722,946	163,595	167,868	5,719,980
2010-11[2]	2,910,697	691,238	106,553	1,816,444	190,703	205,544	5,921,179
2011-12	2,271,410	792,340	-	2,584,272	200,188	238,142	6,086,352
2012-13	2,376,805	848,466	-	2,549,871	211,196	257,728	6,244,066
2013-14[3]	2,644,064	891,422		2,606,111	221,913	258,498	6,622,008
2014-15[3]	2,797,495	1,072,026		2,678,868	226,119	260,699	7,035,207
2015-16[3]	2,959,247	1,194,188		2,702,598	239,228	269,587	7,364,848
2016-17[3]	3,148,838	1,418,345		2,896,443	254,277	291,226	8,009,129
2017-18[3] Est.	3,199,352	1,532,415		3,048,417	276,029	314,602	8,370,815

[1] UC General Funds includes Nonresident Supplemental Tuition, application fees, a portion of indirect cost recovery from federal and state contracts and grants, a portion of patent royalty income, and interest in General Fund balances.
[2] State Fiscal Stabilization Funds authorized by the 2009 American Reinvestment and Recovery Act.
[3] State General Funds exclude GO bond debt service & one-time State contribution to UCRS.

Appendix Display 6: General Campus and Health Sciences Full-Time Equivalent Student Enrollment

	2016-17 Actual	2017-18 Estimated
Berkeley		
General Campus	37,863	39,124
Health Sciences	733	732
Total	38,596	39,856
Davis		
General Campus	33,434	34,163
Health Sciences	2,249	2,321
Total	35,683	36,484
Irvine		
General Campus	32,365	34,494
Health Sciences	1,471	1,490
Total	33,836	35,984
Los Angeles		
General Campus	38,938	39,580
Health Sciences	3,792	3,862
Total	42,730	43,442
Merced		
General Campus	7,440	8,216
Riverside		
General Campus	22,080	22,759
Health Sciences	296	338
Total	22,376	23,097
San Diego		
General Campus	33,794	34,434
Health Sciences	1858	1,885
Total	35,652	36,319
San Francisco		
Health Sciences	4,516	4,639
Santa Barbara		
General Campus	24,305	24,914
Santa Cruz		
General Campus	18,823	19,641
Totals		
General Campus	249,042	257,325
Health Sciences	14,915	15,267
Total	263,957	272,592

Appendix Display 7: General Campus Full-Time Equivalent Student Enrollment

	2016-17 Actual	2017-18 Estimated
Berkeley		
Undergraduate	29,888	31,116
Graduate	7,975	8,008
Total	37,863	39,124
Davis		
Undergraduate	28,880	29,417
Graduate	4,554	4,746
Total	33,434	34,163
Irvine		
Undergraduate	28,373	30,342
Graduate	3,992	4,152
Total	32,365	34,494
Los Angeles		
Undergraduate	31,903	32,365
Graduate	7,035	7,215
Total	38,938	39,580
Merced		
Undergraduate	6,937	7,626
Graduate	503	590
Total	7,440	8,216
Riverside		
Undergraduate	19,542	20,094
Graduate	2,538	2,665
Total	22.080	22,759
San Diego		
Undergraduate	28,977	29,494
Graduate	4,817	4,940
Total	33,794	34,434
Santa Barbara		
Undergraduate	21,641	22,111
Graduate	2,664	2,803
Total	24,305	24,914
Santa Cruz		
Undergraduate	17.072	17,836
Graduate	1,751	1,805
Total	18,823	19,641
General Campus		
Undergraduate	213,213	220,401
Graduate	35,829	36,924
Total	249,042	257,325

Appendix Display 8: Enrollment History, 1980-81 Through 2017-18

	General Campus		Health Sciences		Total
	Undergraduate	Graduate	Undergraduate	Graduate	
1980-81	88,963	24,704	697	11,755	126,119
1981-82	90,476	25,037	492	12,030	128,035
1982-83	92,771	24,470	370	12,102	129,713
1983-84	94,469	24,192	354	11,807	130,822
1984-85	96,613	24,996	344	11,752	133,705
1985-86	99,392	25,440	344	11,752	136,928
1986-87	103,506	26,229	347	11,694	141,776
1987-88	108,141	25,676	358	11,808	145,983
1988-89	112,377	25,676	364	11,903	150,320
1989-90	114,365	26,142	380	11,976	152,863
1990-91	116,546	26,798	412	12,125	155,881
1991-92	117,297	26,511	407	12,156	156,371
1992-93	115,133	26,374	410	12,318	154,235
1993-94	113,548	25,930	400	12,324	152,202
1994-95	113,869	25,546	400	12,235	152,050
1995-96	116,176	25,346	356	12,320	154,198
1996-97	117,465	25,318	315	12,289	155,387
1997-98	119,852	25,682	278	11,999	157,811
1998-99	123,227	25,629	292	12,252	161,400
1999-00	127,208	26,114	274	12,304	165,900
2000-01	132,026	26,666	274	12,279	171,245
2001-02	143,853	28,725	287	12,439	185,304
2002-03	152,320	30,738	321	12,809	196,188
2003-04	156,243	32,385	162	13,106	201,896
2004-05	156,066	31,872	127	13,338	201,403
2005-06	159,515	32,397	131	13,325	205,368
2006-07	166,966	32,882	202	13,596	213,646
2007-08	173,703	33,652	350	13,608	221,313
2008-09	180,210	33,939	462	13,714	228,325
2009-10	183,515	34,673	512	13,913	232,613
2010-11	185,442	34,851	504	14,075	234,872
2011-12	187,566	34,865	470	14,156	237,057
2012-13	188,991	34,556	435	14,138	238,156
2013-14	193,012	34,817	383	14,034	242,246
2014-15	199,995	35,341	353	14,098	249,787
2015-16	203,129	35,489	352	14,519	253,489
2016-17	213,213	35,829	358	14,557	263,957
2017-18 est.	220,401	36,924	371	14,896	272,592

Appendix Display 9: UC Mandatory Student Charge Levels

		Tuition					
	Student	Undergraduate		Graduate Academic		Professional[1]	Surcharge[2]
	Services Fee	Resident	Nonresident	Resident	Nonresident		
1980-81	$419	$300	$300	$360	$360	$360	
1981-82	463	475	475	535	535	535	
1982-83	510	725	725	785	785	785	
1983-84	523	792	792	852	852	852	
1984-85	523	722	722	782	782	782	
1985-86	523	722	722	782	782	782	
1986-87	523	722	722	782	782	782	
1987-88	570	804	804	804	804	804	
1988-89	594	840	840	840	840	840	
1989-90	612	864	864	864	864	864	
1990-91	673	951	951	951	951	951	
1991-92	693	1,581	1,581	1,581	1,581	1,581	
1992-93	693	2,131	2,131	2,131	2,131	2,131	
1993-94	693	2,761	2,761	2,761	2,761	2,761	
1994-95	713	3,086	3,086	3,086	3,086	3,086	
1995-96	713	3,086	3,086	3,086	3,086	3,086	
1996-97	713	3,086	3,086	3,086	3,086	3,086	
1997-98	713	3,086	3,086	3,086	3,086	3,086	
1998-99	713	2,896	3,086	3,086	3,086	3,086	
1999-00	713	2,716	3,086	2,896	3,086	3,086	
2000-01	713	2,716	3,086	2,896	3,086	3,086	
2001-02	713	2,716	3,086	2,896	3,086	3,086	
2002-03[3]	713	3,121	3,491	3,301	3,491	3,491	
2003-04	713	4,271	4,751	4,506	4,751	4,751	
2004-05	713	4,971	5,451	5,556	5,801	4,751	
2005-06	735	5,406	5,922	6,162	6,429	5,357	$700
2006-07	735	5,406	5,922	6,162	6,429	5,357	1,050
2007-08	786	5,790	6,342	6,594	6,888	5,736	60
2008-09	864	6,202	6,789	7,062	7,374	6,144	60
2009-10[4]	900	7,998	8,742	7,998	8,352	7,920	60
2010-11	900	9,342	10,200	9,342	9,750	9,252	60
2011-12	972	11,160	11,160	11,160	11,160	11,160	60
2012-13	972	11,160	11,160	11,160	11,160	11,160	60
2013-14	972	11,160	11,160	11,160	11,160	11,160	60
2014-15	972	11,160	11,160	11,160	11,160	11,160	60
2015-16	1,020	11,160	11,160	11,160	11,160	11,160	60
2016-17	1,074	11,160	11,160	11,160	11,160	11,160	60
2017-18	1,128	11,442	11,442	11,442	11,442	11,442	60
2018-19[5]	1,182	11,790	11,790	11,790	11,790	11,790	0

[1] Charged to resident and nonresident professional degree students. Through 2010-11, excludes students paying Architecture, Environmental Design, Information Management, International Relations and Pacific Studies, Physical Therapy, Preventive Veterinary Medicine, Public Health, Public Policy, Social Welfare, and Urban Planning Professional Degree Supplemental Tuition.

[2] Before 2007-08, surcharges were only charged to professional degree students.

[3] Mid-year increases were applied to spring academic term. Figures shown are annualized levels.

[4] Mid-year increases were applied in January 2010. Figures shown are annualized levels.

[5] Subject to approval by the Regents in January 2018, the proposed 2018-19 levels reflect a $54 increase in Student Services Fee and a $288 net increase in Tuition that includes the elimination of the $60 Tuition surcharge.

Appendix Display 10: UC Average Annual Student Charges for Resident Undergraduate Students

	Mandatory Charges	Increase	Campus-based Fees[1]	Total Charges	Total Increase
1980-81	$719	5.0%	$57	$776	5.4%
1981-82	938	30.5%	60	998	28.6%
1982-83	1,235	31.7%	65	1,300	30.3%
1983-84	1,315	6.5%	72	1,387	6.7%
1984-85	1,245	-5.3%	79	1,324	-4.5%
1985-86	1,245	0.0%	81	1,326	0.2%
1986-87	1,245	0.0%	100	1,345	1.4%
1987-88	1,374	10.4%	118	1,492	10.9%
1988-89	1,434	4.4%	120	1,554	4.2%
1989-90	1,476	2.9%	158	1,634	5.1%
1990-91	1,624	10.0%	196	1,820	11.4%
1991-92	2,274	40.0%	212	2,486	36.6%
1992-93	2,824	24.2%	220	3,044	22.4%
1993-94	3,454	22.3%	273	3,727	22.4%
1994-95	3,799	10.0%	312	4,111	10.3%
1995-96	3,799	0.0%	340	4,139	0.7%
1996-97	3,799	0.0%	367	4,166	0.7%
1997-98	3,799	0.0%	413	4,212	1.1%
1998-99	3,609	-5.0%	428	4,037	-4.2%
1999-00	3,429	-5.0%	474	3,903	-3.3%
2000-01	3,429	0.0%	535	3,964	1.6%
2001-02	3,429	0.0%	430	3,859	-2.6%
2002-03[2]	3,834	11.8%	453	4,287	11.1%
2003-04	4,984	30.0%	546	5,530	29.0%
2004-05	5,684	14.0%	628	6,312	14.1%
2005-06	6,141	8.0%	661	6,802	7.8%
2006-07	6,141	0.0%	711	6,852	0.7%
2007-08	6,636	8.1%	881	7,517	9.7%
2008-09	7,126	7.4%	901	8,027	6.8%
2009-10[3]	8,958	25.7%	938	9,896	23.3%
2010-11	10,302	15.0%	977	11,279	14.0%
2011-12	12,192	18.3%	989	13,181	16.9%
2012-13	12,192	0.0%	1,008	13,200	0.1%
2013-14	12,192	0.0%	1,030	13,222	0.2%
2014-15	12,192	0.0%	1,125	13,317	0.7%
2015-16	12,240	0.4%	1,211	13,451	1.0%
2016-17	12,294	0.4%	1,257	13,548	0.7%
2017-18	12,630	2.7%	1,334	13,964	3.1%
2018-19[4]	12,972	2.7%	1,401	14,373	2.9%

[1] Beginning in 1998-99, campus-based fees are calculated on a weighted basis using enrollments.

[2] Mid-year charge increases were applied to spring academic term. Figures shown are annualized charge levels.

[3] Mid-year charge increases were applied in January 2010. Figures shown are annualized charge levels.

[4] Subject to approval by the Regents in January 2017, the proposed 2018-19 levels reflect a $54 increase in Student Services Fee and a $288 net increase in Tuition that includes the elimination of the $60 Tuition surcharge. Assumes a 5% increase in campus-based fees.

Appendix Display 11: UC Average Annual Student Charges for Nonresident Undergraduate Students

	Mandatory Charges	Increase	Campus-based Fees[1]	Nonresident Supplemental Tuition	Increase	Total Charges	Total Increase
1980-81	$719	5.0%	$57	$2,400	0.0%	$3,176	1.3%
1981-82	938	30.5%	60	2,880	20.0%	3,878	22.1%
1982-83	1,235	31.7%	65	3,150	9.4%	4,450	14.7%
1983-84	1,315	6.5%	72	3,360	6.7%	4,747	6.7%
1984-85	1,245	-5.3%	79	3,564	6.1%	4,888	3.0%
1985-86	1,245	0.0%	81	3,816	7.1%	5,142	5.2%
1986-87	1,245	0.0%	100	4,086	7.1%	5,431	5.6%
1987-88	1,374	10.4%	118	4,290	5.0%	5,782	6.5%
1988-89	1,434	4.4%	120	4,806	12.0%	6,360	10.0%
1989-90	1,476	2.9%	158	5,799	20.7%	7,433	16.9%
1990-91	1,624	10.0%	196	6,416	10.6%	8,236	10.8%
1991-92	2,274	40.0%	212	7,699	20.0%	10,185	23.7%
1992-93	2,824	24.2%	220	7,699	0.0%	10,743	5.5%
1993-94	3,454	22.3%	273	7,699	0.0%	11,426	6.4%
1994-95	3,799	10.0%	312	7,699	0.0%	11,810	3.4%
1995-96	3,799	0.0%	340	7,699	0.0%	11,838	0.2%
1996-97	3,799	0.0%	367	8,394	9.0%	12,560	6.1%
1997-98	3,799	0.0%	413	8,984	7.0%	13,196	5.1%
1998-99	3,799	0.0%	428	9,384	4.5%	13,611	3.1%
1999-00	3,799	0.0%	474	9,804	4.5%	14,077	3.4%
2000-01	3,799	0.0%	535	10,244	4.5%	14,578	3.6%
2001-02	3,799	0.0%	430	10,704	4.5%	14,933	2.4%
2002-03[2]	4,204	10.7%	453	12,009	16.6%	17,137	14.8%
2003-04	5,464	30.0%	546	13,730	10.0%	19,740	15.2%
2004-05	6,164	12.8%	628	16,476	20.0%	23,268	17.9%
2005-06	6,657	8.0%	661	17,304	5.0%	24,622	5.8%
2006-07	6,657	0.0%	711	18,168	5.0%	25,536	3.7%
2007-08	7,188	8.0%	881	19,068	5.0%	27,137	6.3%
2008-09	7,713	7.3%	901	20,021	5.0%	28,635	5.5%
2009-10[3]	9,702	25.8%	938	22,021	10.0%	32,661	14.1%
2010-11	11,160	15.0%	977	22,021	0.0%	34,158	4.6%
2011-12	12,192	9.2%	989	22,878	3.9%	36,059	5.6%
2012-13	12,192	0.0%	1,008	22,878	0.0%	36,078	0.1%
2013-14	12,192	0.0%	1,030	22,878	0.0%	36,100	0.1%
2014-15	12,192	0.0%	1,125	22,878	0.0%	36,195	0.3%
2015-16	12,240	0.4%	1,211	24,708	8.0%	38,159	5.4%
2016-17	12,294	0.4%	1,257	26,682	8.0%	40,233	5.4%
2017-18	12,630	2.7%	1,334	28,014	5.0%	41,978	4.4%
2018-19[4]	12,972	2.7%	1,401	28,992	3.5%	42,387	3.3%

[1] Beginning in 1998-99, campus-based fees are calculated on a weighted basis using enrollments.

[2] Mid-year charge increases were applied to spring academic term. Figures shown are annualized charge levels.

[3] Mid-year charge increases were applied in January 2010. Figures shown are annualized charge levels.

[4] Subject to approval by the Regents in January 2018, the proposed 2018-19 levels reflect a $54 increase in Student Services Fee, a $288 net increase in Tuition that includes the elimination of the $60 Tuition surcharge, and a $978 increase in undergraduate Nonresident Supplemental Tuition. Assumes a 5% increase in campus-based fees.

Appendix Display 12: UC Average Annual Student Charges For Resident Graduate Academic Students

	Mandatory Charges	Increase	Campus-based Fees[1]	Total Charges	Total Increase
1980-81	$779	4.6%	$45	$824	5.1%
1981-82	998	28.1%	45	1,043	26.6%
1982-83	1,295	29.8%	51	1,346	29.1%
1983-84	1,375	6.2%	58	1,433	6.5%
1984-85	1,305	-5.1%	63	1,368	-4.5%
1985-86	1,305	0.0%	64	1,369	0.1%
1986-87	1,305	0.0%	82	1,387	1.3%
1987-88	1,374	5.3%	100	1,474	6.3%
1988-89	1,434	4.4%	125	1,559	5.8%
1989-90	1,476	2.9%	222	1,698	8.9%
1990-91	1,624	10.0%	482	2,106	24.0%
1991-92	2,274	40.0%	557	2,831	34.4%
1992-93	2,824	24.2%	608	3,432	21.2%
1993-94	3,454	22.3%	703	4,157	21.1%
1994-95	3,799	10.0%	786	4,585	10.3%
1995-96	3,799	0.0%	836	4,635	1.1%
1996-97	3,799	0.0%	868	4,667	0.7%
1997-98	3,799	0.0%	923	4,722	1.2%
1998-99	3,799	0.0%	839	4,638	-1.8%
1999-00	3,609	-5.0%	969	4,578	-1.3%
2000-01	3,609	0.0%	1,138	4,747	3.7%
2001-02	3,609	0.0%	1,305	4,914	3.5%
2002-03[2]	4,014	11.2%	1,327	5,341	8.7%
2003-04	5,219	30.0%	1,624	6,843	28.1%
2004-05	6,269	20.1%	1,606	7,875	15.1%
2005-06	6,897	10.0%	1,811	8,708	10.6%
2006-07	6,897	0.0%	1,973	8,870	1.9%
2007-08	7,440	7.9%	2,281	9,721	9.6%
2008-09	7,986	7.3%	2,367	10,353	6.5%
2009-10[3]	8,958	12.2%	2,505	11,463	10.7%
2010-11[4]	10,302	15.0%	602	10,904	-4.9%
2011-12	12,192	18.3%	606	12,798	17.4%
2012-13	12,192	0.0%	616	12,808	0.1%
2013-14	12,192	0.0%	621	12,813	0.0%
2014-15	12,192	0.0%	697	12,889	0.6%
2015-16	12,240	0.4%	800	13,040	1.2%
2016-17	12,294	0.4%	801	13,095	0.4%
2017-18	12,630	2.7%	884	13,514	3.2%
2018-19[5]	12,972	2.7%	928	13,900	2.9%

[1] Beginning in 1998-99, campus-based fees are calculated on a weighted basis using enrollments.

[2] Mid-year charge increases were applied to spring academic term. Figures shown are annualized charge levels.

[3] Mid-year charge increases were applied in January 2010. Figures shown are annualized charge levels.

[4] Beginning in 2010-11, campus-based fee figures for graduate students do not include waivable health insurance fee.

[5] Subject to approval by the Regents in January 2018, the proposed 2018-19 levels reflect a $54 increase in Student Services Fee and a $288 net increase in Tuition that includes the elimination of the $60 Tuition surcharge. Assumes a 5% increase in campus-based fees.

Appendix Display 13: UC Average Annual Student Charges For Nonresident Graduate Academic Students

	Mandatory Charges	Increase	Campus-based Fees[1]	Nonresident Supplemental Tuition	Increase	Total Charges	Total Increase
1980-81	$779	4.6%	$45	$2,400	0.0%	$3,224	1.3%
1981-82	998	28.1%	45	2,880	20.0%	3,923	21.7%
1982-83	1,294	29.8%	51	3,150	9.4%	4,495	14.6%
1983-84	1,375	6.2%	58	3,360	6.7%	4,793	6.6%
1984-85	1,305	-5.1%	63	3,564	6.1%	4,932	2.9%
1985-86	1,305	0.0%	64	3,816	7.1%	5,185	5.1%
1986-87	1,305	0.0%	82	4,086	7.1%	5,473	5.6%
1987-88	1,374	5.3%	100	4,290	5.0%	5,764	5.3%
1988-89	1,434	4.4%	125	4,806	12.0%	6,365	10.4%
1989-90	1,476	2.9%	222	5,799	20.7%	7,497	17.8%
1990-91	1,624	10.0%	482	6,416	10.6%	8,522	13.7%
1991-92	2,274	40.0%	557	7,699	20.0%	10,530	23.6%
1992-93	2,824	24.2%	608	7,699	0.0%	11,131	5.7%
1993-94	3,454	22.3%	703	7,699	0.0%	11,856	6.5%
1994-95	3,799	10.0%	786	7,699	0.0%	12,284	3.6%
1995-96	3,799	0.0%	836	7,699	0.0%	12,334	0.4%
1996-97	3,799	0.0%	868	8,394	9.0%	13,061	5.9%
1997-98	3,799	0.0%	923	8,984	7.0%	13,706	4.9%
1998-99	3,799	0.0%	839	9,384	4.5%	14,022	2.3%
1999-00	3,799	0.0%	969	9,804	4.5%	14,572	3.9%
2000-01	3,799	0.0%	1,138	10,244	4.5%	15,181	4.2%
2001-02	3,799	0.0%	1,305	10,704	4.5%	15,808	4.1%
2002-03[2]	4,204	10.7%	1,327	11,132	4.0%	16,663	5.4%
2003-04	5,464	30.0%	1,624	12,245	10.0%	19,333	16.0%
2004-05	6,514	19.2%	1,606	14,694	20.0%	22,814	18.0%
2005-06	7,164	10.0%	1,811	14,694	0.0%	23,669	3.7%
2006-07	7,164	0.0%	1,973	14,694	0.0%	23,831	0.7%
2007-08	7,734	8.0%	2,281	14,694	0.0%	24,709	3.7%
2008-09	8,298	7.3%	2,367	14,694	0.0%	25,359	2.6%
2009-10[3]	9,312	12.2%	2,505	14,694	0.0%	26,511	4.5%
2010-11[4]	10,710	15.0%	602	14,694	0.0%	26,006	-1.9%
2011-12	12,192	13.8%	606	15,102	2.8%	27,900	7.3%
2012-13	12,192	0.0%	616	15,102	0.0%	27,910	0.0%
2013-14	12,192	0.0%	621	15,102	0.0%	27,915	0.0%
2014-15	12,192	0.0%	697	15,102	0.0%	27,991	0.3%
2015-16	12,240	0.4%	800	15,102	0.0%	28,142	0.5%
2016-17	12,294	0.4%	801	15,102	0.0%	28,197	0.2%
2017-18	12,630	2.7%	884	15,102	0.0%	28,616	1.5%
2018-19[5]	12,972	2.7%	928	15,102	0.0%	29,002	1.3%

[1] Beginning in 1998-99, campus-based fees are calculated on a weighted basis using enrollments.

[2] Mid-year charge increases were applied to spring academic term. Figures shown are annualized charge levels.

[3] Mid-year charge increases were applied in January 2010. Figures shown are annualized charge levels.

[4] Beginning in 2010-11, campus-based fee figures for graduate students do not include waivable health insurance fee.

[5] Subject to approval by the Regents in January 2018, the proposed 2018-19 levels reflect a $54 increase in Student Services Fee and a $288 net increase in Tuition that includes the elimination of the $60 Tuition surcharge. Assumes a 5% increase in campus-based fees.

Appendix Display 14: 2017-18 Total Charges for Undergraduates and Graduate Academics[1]

	Without Health Insurance		With Health Insurance	
	Undergraduate	Graduate	Undergraduate	Graduate
Berkeley				
Residents	$14,170	$14,170	$17,000	$18,632
Nonresidents	42,184	29,272	45,014	33,734
Davis				
Residents	14,419	13,607	16,678	17,891
Nonresidents	42,433	28,709	44,692	32,993
Irvine				
Residents	13,738	13,400	15,516	17,332
Nonresidents	41,752	28,105	43,530	32,434
Los Angeles				
Residents	13,261	13,003	15,438	16,819
Nonresidents	41,752	28,105	43,452	31,921
Merced				
Residents	13,598	13,267	15,776	15,784
Nonresidents	41,612	28,369	43,790	30,886
Riverside				
Residents	13,917	13,675	15,675	17,239
Nonresidents	41,931	28,777	43,689	32,341
San Diego				
Residents	14,018	13,446	15,971	17,019
Nonresidents	42,032	28,548	43,985	32,121
San Francisco				
Residents	n/a	12,842	n/a	17,871
Nonresidents	n/a	27,944	n/a	32,973
Santa Barbara				
Residents	14,451	13,569	17,775	16,893
Nonresidents	42,465	28,671	45,789	31,995
Santa Cruz				
Residents	14,020	13,837	16,903	18,265
Nonresidents	42,034	28,939	44,917	33,367

[1] Total charges include mandatory systemwide charges (i.e., Tuition and the Student Services Fee totaling $12,630), campus-based fees, and, where applicable, Nonresident Supplemental Tuition and/or health insurance as estimated in July 2017.

Appendix Display 15: 2017-18 Total Charges for Professional Degree Students by Program and Campus

	Professional Degree Supplemental Tuition		Total Charges[1]	
	Residents	Nonresidents	Residents	Nonresidents
Applied Economics and Finance				
Santa Cruz	$8,001	$8,001	$26,266	$38,511
Architecture				
Los Angeles	8,820	8,820	25,639	37,884
Art				
Los Angeles	8,478	5,298	25,297	34,362
Biomedical and Translational Science				
Irvine	11,016	11,016	28,348	40,593
Biotechnology Management				
Irvine	13,230	12,303	30,562	41,880
Business				
Berkeley	44,624	33,396	63,256	64,273
Davis	25,242	25,242	43,133	55,378
Irvine	26,484	21,888	43,816	51,465
Riverside	26,448	26,448	43,687	55,932
San Diego	31,392	22,872	48,411	52,136
Civil and Environmental Engineering				
Berkeley	6,000	11,700	24,632	42,577
Dental Hygiene				
San Francisco	15,288	15,288	33,159	45,404
Dentistry				
Los Angeles	26,127	23,280	42,946	52,344
San Francisco	30,129	30,129	48,000	60,245
Development Practice				
Berkeley	18,600	18,600	37,232	49,477
Educational Administration/Leadership				
Berkeley (M.A.)	6,000	6,000	24,632	36,877
Davis (Ed.D.)	4,410	4,410	22,301	34,546
Engineering (M.Eng.)				
Berkeley	33,700	24,700	52,332	55,577
Engineering Management				
Irvine	13,230	13,230	30,562	42,807
Environmental Science and Engineering				
Los Angeles	7,848	7,848	24,667	36,912
Games and Playable Media				
Santa Cruz	30,980	30,980	49,245	61,490
Genetic Counseling				
Irvine	10,419	10,419	27,751	39,996
Health Informatics				
Davis	7,014	7,014	24,905	37,150
Information Management				
Berkeley	7,496	7,496	26,128	38,373
International Affairs				
San Diego	8,793	8,793	25,812	38,057

[1] Total charges include estimated campus-based fees and health insurance. Total charges also include mandatory systemwide charges (i.e., Tuition and the Student Services Fee totaling $12,630); Professional Degree Supplemental Tuition; and Nonresident Supplemental Tuition, disability, and other fees where applicable.

	Professional Degree Supplemental Tuition		Total Charges[1]	
	Residents	Nonresidents	Residents	Nonresidents
Journalism				
Berkeley	$7,500	$7,500	$26,132	$38,377
Law				
Berkeley	35,164	26,870	53,796	57,747
Davis	34,182	31,188	52,073	61,324
Irvine	31,755	26,004	49,087	55,581
Los Angeles	31,755	26,004	48,574	55,068
Medicine				
Berkeley	21,756	21,756	40,388	52,633
Davis	21,756	21,756	39,647	51,892
Irvine	21,756	21,756	39,088	51,333
Los Angeles	22,614	22,614	39,433	51,678
Riverside	21,756	21,756	38,995	51,240
San Diego	21,756	21,756	38,775	51,020
San Francisco	21,756	21,756	39,627	51,872
Nursing				
Davis	11,055	11,055	28,946	41,191
Irvine	11,055	11,055	28,387	40,632
Los Angeles	11,055	11,055	27,874	40,119
San Francisco	11,055	11,055	28,926	41,171
Optometry				
Berkeley	17,258	16,436	35,890	47,313
Pharmacy				
San Diego	21,456	21,456	38,475	50,720
San Francisco	21,456	21,456	39,327	51,572
Physical Therapy				
San Francisco	12,975	13,341	30,846	43,457
Preventive Veterinary Medicine				
Davis	5,886	6,351	23,777	36,487
Product Development				
Berkeley	25,466	18,522	44,098	49,399
Public Health				
Berkeley	8,372	8,372	27,004	39,249
Davis	7,866	8,364	25,757	38,500
Irvine	6,498	6,498	23,830	36,075
Los Angeles	7,200	7,656	24,019	36,720
Public Policy				
Berkeley	9,284	9,864	27,916	40,741
Irvine	6,888	6,888	24,220	36,465
Los Angeles	8,436	9,000	25,255	38,064
Riverside	5,952	5,952	23,191	35,436
San Diego	8,793	8,793	25,812	38,057
Social Welfare				
Berkeley	4,618	4,618	23,250	35,495
Los Angeles	6,195	6,651	23,014	35,715
Statistics				
Berkeley	17,364	17,364	35,996	48,241

[1] Total charges include estimated campus-based fees and health insurance. Total charges also include mandatory systemwide charges (i.e., Tuition and the Student Services Fee totaling $12,630); Professional Degree Supplemental Tuition; and Nonresident Supplemental Tuition, disability, and other fees where applicable.

Appendix Display 15 (continued): 2017-18 Total Charges for Professional Degree Students by Program and Campus

	Professional Degree Supplemental Tuition		Total Charges[1]	
	Residents	Nonresidents	Residents	Nonresidents
Teacher Education				
Berkeley	$6,000	6,000	$24,632	$36,877
Technology and Information Management				
Santa Cruz	23,000	14,000	41,265	44,510
Technology Management				
Santa Barbara	33,954	33,954	50,847	63,092
Theater, Film & Television				
Los Angeles	11,037	11,037	27,856	40,101
Translational Medicine				
Berkeley (Jt. UCSF)	33,456	33,456	52,088	64,333
Urban and Regional Planning/Environmental Design				
Berkeley	6,614	6,614	25,246	37,491
Irvine	6,000	6,000	23,332	35,577
Los Angeles	6,888	7,398	23,707	36,462
Veterinary Medicine				
Davis	15,594	15,594	33,485	45,730

[1] Total charges include estimated campus-based fees and health insurance. Total charges also include mandatory systemwide charges (i.e., Tuition and the Student Services Fee totaling $12,630); Professional Degree Supplemental Tuition; and Nonresident Supplemental Tuition, disability, and other fees where applicable.

Index

University of California
Office of the President
Budget Analysis and Planning
1111 Franklin Street, 6th Floor
Oakland, California 94607
(510) 987-9113
www.ucop.edu/operating-budget

AS PRESENTED TO THE REGENTS

AS PRESENTED TO THE REGENTS