UNIVERSITY
OF
CALIFORNIA

Budget for Current Operations

Summary & Detail

2017-18

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 *2017-18 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 2016-17. It provides explanatory detail for all aspects of the University's operating budget.

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 $31.5 billion in operating revenues in 2016-17.

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 *2016-26 Capital Financial Plan,* provides information about the University's capital facilities needs.

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INTRODUCTION

As the University of California nears its 150th anniversary in 2018, many of us are looking back at our institution's history and gaining a new appreciation for the progress California's public research university system has made over the years.

UC has proudly educated generation after generation of Californians. We have nurtured a world-class research infrastructure that creates new knowledge and produces transformational technologies. We continue to serve as a leader in the healthcare sector through the work of UC Health. And we contribute significantly to California's growing economy and workforce.

Among our institution's greatest accomplishments is our unwavering commitment to California students. Today, the University educates more California students than ever. Beginning in fall 2015, UC implemented a plan to increase enrollment of California undergraduates by 10,000 over three years. The growth in California undergraduates between Fall 2015 and Fall 2016 was the single largest one-year increase in California resident enrollment since the end of World War II.

UC's budget agreement with Governor Jerry Brown two years ago provided the University with new and much-needed State funding, giving us increased financial stability, and allowing students and families to better plan for the costs of their higher education.

As we look to the future, State support will continue to play a critical role in the University's efforts to meet its commitments under California's Master Plan for Higher Education – namely, preserving the academic excellence of a UC education for future generations of Californians, and expanding access for California resident undergraduates at UC. Just as important, however, is funding for the University's graduate students, who support our teaching and research missions by helping to educate undergraduates and participating in UC's research work.

Along with State support and other revenue sources, this year the University is also proposing a moderate, inflation-based Tuition and student fee adjustment to support student success and accessibility for Californians after six years of flat Tuition.

UC's commitment to affordability and maintaining a robust financial aid program has not wavered. One-third of all new revenue from undergraduate Tuition and the Student Services Fee is set aside for financial aid. California undergraduates who currently receive need-based grants will have the adjustments fully covered and, indeed, most will receive additional aid to help cover other costs such as housing, food, and books.

The remaining revenue from the proposed adjustments will allow the University to hire more faculty, improve support for graduate students and fund more teaching assistants, offer more courses, provide more student academic counseling and tutoring, expand student mental health services, improve technology such as internet service and multimedia capabilities used in teaching and learning, and support other student priorities tailored to each of our ten campuses.

The coming year may be a challenging one for the University of California in many ways – but it also promises to be a year of growth and possibility. Through the University's expansion, our state's economic shifts, and changes in demographics and technology, UC's commitment to California and its residents has been a constant and guiding principle. On behalf of President Janet Napolitano, I can affirm that this commitment will continue to guide our way forward as we enter the 2017-18 fiscal year, helping us shape our priorities and overcome our fiscal challenges.

Nathan Brostrom
Chief Financial Officer and Executive Vice President
January 2017

KEY ELEMENTS OF THE 2017-18 BUDGET PLAN

Enrollment Growth. The budget plan incorporates enrollment growth of 2,500 California resident undergraduates in 2017-18 compared to 2016-17, consistent with the Budget Act of 2016 provision that appropriates $18.5 million in State funding to the University for this purpose. The plan also includes $9 million of State funds to support 900 graduate students in 2017-18, consistent with the State's historical share of the marginal cost of instruction. Graduate students educate and mentor undergraduate students, are critical to attracting the most talented faculty members, and make important contributions to the University's research mission and, upon graduation, to the economy and skill base of California.

Investing in Student Success and Academic Excellence. The plan calls for $50 million in strategic investments to hire faculty and improve the student-faculty ratio, increase graduate student support, expand technology essential to instructional delivery, and rebuild other areas where the impact of past budget cuts on the quality of the academic program have 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 $49.3 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 $134.6 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 $151.4 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.

4% Increase in State Support. The plan assumes a 4% ($131.2 million) base budget increase in State General Funds, consistent with the Governor's multi-year funding plan for the University.

Nonresident Supplemental Tuition. The plan assumes a $1,332 adjustment to Nonresident Supplemental Tuition and enrollment growth of 1,000 nonresident undergraduates in 2017-18. This will yield an estimated $70.7 million, or roughly $60.7 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 $14 million in 2017-18.

Tuition. The plan incorporates a $282 (2.5%) adjustment to Tuition. 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 (5%) adjustment to the Student Services Fee. Half of the revenue generated, net of financial aid, will be used to increase student mental health services.

Proposition 2 Funds for the University of California Retirement Plan. Though separate from the University's core funds budget plan, the University anticipates $169 million in one-time Proposition 2 funds to help address the unfunded liability of the University's retirement program, consistent with the multi-year funding plan for UC established with the Governor.

2017-18 Budget Plan for Core Funds (Dollars in Millions)

2016-17 OPERATING BUDGET

State General Funds	$3,351.1
Less General Obligation Bond Debt Service	(220.8)
State General Funds (excluding GO Bond Debt Service)	$3,130.3
Total Core Funds (State General Funds, Student Tuition and Fee Revenue, and UC General Funds)	$7,832.4

PROPOSED INCREASES IN REVENUE

Cost Savings/Alternative Revenues		
Asset Management	$	3.0
Systemwide Contracts	$	7.8
Fiat Lux / Risk Captive	$	5.0
Philanthropy	$	10.0
Reallocation from Nonresident Aid	$	14.0
Subtotal	$	39.8
State General Funds		
CA Undergraduate Enrollment Growth	$	18.5
Graduate Enrollment Growth	$	9.0
4% Base Budget Increase	$	131.2
Subtotal	$	158.7
Fees		
Student Services Fee Adjustment ($54)	$	9.2
Tuition Adjustment ($282)	$	48.0
Enrollment Growth - Tuition & SSF	$	36.2
Revenue for Financial Aid	$	49.3
Subtotal	$	142.6
UC General Funds		
Nonresident Tuition Adjustment ($1,332)	$	42.1
Nonresident Enrollment Growth	$	28.6
Subtotal	$	70.7
One-Time Resources		
Deferred Maintenance (to be requested)	$	35.0
Prior Year Enrollment Funding	$	18.5
TOTAL INCREASE IN REVENUE	**$**	**465.2**

PROPOSED INCREASES IN EXPENDITURES

Enrollment Growth Marginal Cost	$	79.9
Mandatory Costs		
Retirement Contributions	$	18.3
Employee Health Benefits	$	19.0
Annuitant Health Benefits	$	8.1
Contractually Committed Compensation	$	29.9
Faculty Merit Program	$	32.0
Non-Salary Price Increases	$	27.3
Subtotal	$	134.6
Student Success & Academic Excellence	$	50.0
Student Mental Health Resources	$	4.6
High-Priority Costs		
Compensation	$	81.8
Deferred Maintenance	$	50.0
High-Priority Capital Needs	$	15.0
Subtotal	$	146.8
Financial Aid		
Return-to-aid	$	49.3
Subtotal	$	49.3
TOTAL INCREASE IN EXPENDITURES	**$**	**465.2**

Figures may not sum to totals due to rounding.

ENSURING ACCESS, AFFORDABILITY, AND EXCELLENCE – NOW AND FOR THE FUTURE

The year 2018 will mark the 150th anniversary, or sesquicentennial, of the founding of the University of California. What began in 1868 as a college of about 15 teachers and a few small buildings in downtown Oakland has since grown to be the preeminent public institution of higher education in the world. Today, the University maintains ten campuses, five medical centers, three national laboratories, and approximately 150 institutes, centers, bureaus, and research laboratories throughout the state that collectively benefit all Californians.

This extraordinary success was hardly inevitable. On the contrary, it was made possible through an equally extraordinary combination of factors that have shaped the University over time and that continue to guide its future. They include, but are not limited to, the following:

- **A sustained investment by the State of California.** The University today is supported by multiple revenue sources, consistent with its diverse operations. Sponsored research grants from public and private sources, payments from public and private medical insurance plans, laboratory management fees, and other sources all play a role in supporting different aspects of the University's work. Yet among the University's core funds – those that most directly support the University's academic enterprise and serve as the base for the University as a whole – State General Fund support for the University's permanent base budget remains critical. The University could never have achieved the rapid expansion that occurred in the 1990s in response to the boom in California high school graduates known as "Tidal Wave II," for example, without reliable State funding for enrollment growth. That support enabled UC to serve ever-growing cohorts of students and – equally important – to provide those students with an education of the same or better quality as that enjoyed by earlier generations of UC students. Despite shortfalls in State support that followed economic downturns during the 2000s and less funding for enrollment growth in recent years, the State remains a critical partner in the University's success.
- **A clear vision for California higher education.** Throughout the University's history, leaders in both State government and California public higher education have come together to define a vision for California higher education and to marshal together the resources needed to execute it. Since the 1960s, this vision has been articulated by the California Master Plan for Higher Education. In establishing the Master Plan, the higher education segments agreed to a clear differentiation of functions and admissions pools in order to avoid wasteful overlap and duplication between segments. In exchange, State government and taxpayers agreed to provide support for higher education. Staying true to this vision requires overcoming certain challenges – securing adequate funding for both undergraduate and graduate enrollment growth and associated capital needs, for example, or the emergence of academic programs that have slightly blurred the lines separating the missions of the segments. Nevertheless, the Master Plan continues to shape California higher education policy, and the vision that it laid out decades ago is directly reflected in the University's three principal goals of access, affordability, and excellence.
- **Outstanding students, faculty, and researchers.** The University's strength among national university systems is excellence across all of its ten campuses, as reflected in its students, faculty, and researchers. The qualifications and accomplishments of UC undergraduates are higher today than ever before, as is the diversity of students' ethnic backgrounds, socioeconomic levels, and geographic origins. UC also enrolls among the very best graduate students from around the world, who contribute to cutting-edge research and support faculty, enhance California's ability to meet its growing workforce needs for highly trained professionals, and help instruct an ever-growing undergraduate population. UC campuses accounted for about 7% of all doctoral degrees in science and engineering awarded by American universities in 2015 and enrolled a far greater share – nearly 15% – of all students who were awarded prestigious National Science Foundation Graduate Research Fellowships that year. UC faculty members are similarly accomplished – a total of 61 faculty and researchers affiliated with the University of California have won 62 Nobel

Prizes, over 500 are current, emeritus, or retired National Academy of Sciences members, and over 500 are members of the American Academy of Arts and Sciences.

Every University stakeholder – the State, the Board of Regents, the UC community, and the people of California – will play a role in shaping how the University evolves over the *next* 150 years. Doing so will require hard thinking about difficult questions. For example,

- As the number of California high school graduates continues to grow due to improved success rates among students from historically underrepresented backgrounds, how can we ensure that future generations of UC undergraduates have access to the same or better educational experiences as their predecessors?
- As demand for graduate academic and professional degrees rises, where will the resources come from to ensure that UC can continue to attract and train the most talented students from across the State, the nation, and the world?
- What new financial models can be developed to secure the resources needed to meet these goals, particularly in an era of limited State funding for the capital renewal and expansion needed to address an aging UC infrastructure and to accommodate demand for future enrollment growth?

The University's budget plan for 2017-18 addresses all of those questions as they relate to the most pressing needs of the State, UC students and families, and the University as a whole.

CONTEXT FOR THE 2017-18 BUDGET PROPOSAL

The University faces a variety of opportunities and challenges – some long standing, some new – that either directly or indirectly affect every aspect of the University's three-part mission of instruction, research, and public service. The most significant of these can be grouped into four broad categories:

- **Enrollment Growth.** Demand for a UC education has never been higher – particularly at the undergraduate level. Accommodating recent growth in the number of California resident undergraduates and planning for further growth in 2017-18 and beyond are essential.
- **Investing in Student Success and Academic Excellence.** Years of chronic underfunding have led to worrisome trends in key indicators of UC excellence that, if left unchecked, put at risk the University's long tradition of excellence in instruction, ground-breaking research, and contributions to the California economy.
- **Improving Affordability.** UC has established a remarkable track record of enrolling students from every socioeconomic background, including a large percentage of students from historically underrepresented populations. Yet even as Tuition has remained flat since 2011, there is growing concern about students' ability to cover other unavoidable costs that they face – costs such as rent, food, books and supplies, transportation, and other personal expenses.
- **Addressing Urgent Infrastructure Needs.** Historically, the University of California and the California State University have relied heavily on public financing to build the classrooms, laboratories, and other facilities and infrastructure needed to serve a growing student and faculty population. In recent years, however, the availability of such funds has plummeted. Alternative strategies are needed to address the growing capital needs of UC campuses, both to provide adequate resources for current levels of enrollment and to accommodate the desired level of enrollment growth described above.

Each of these considerations is discussed in the following pages.

Enrollment Growth

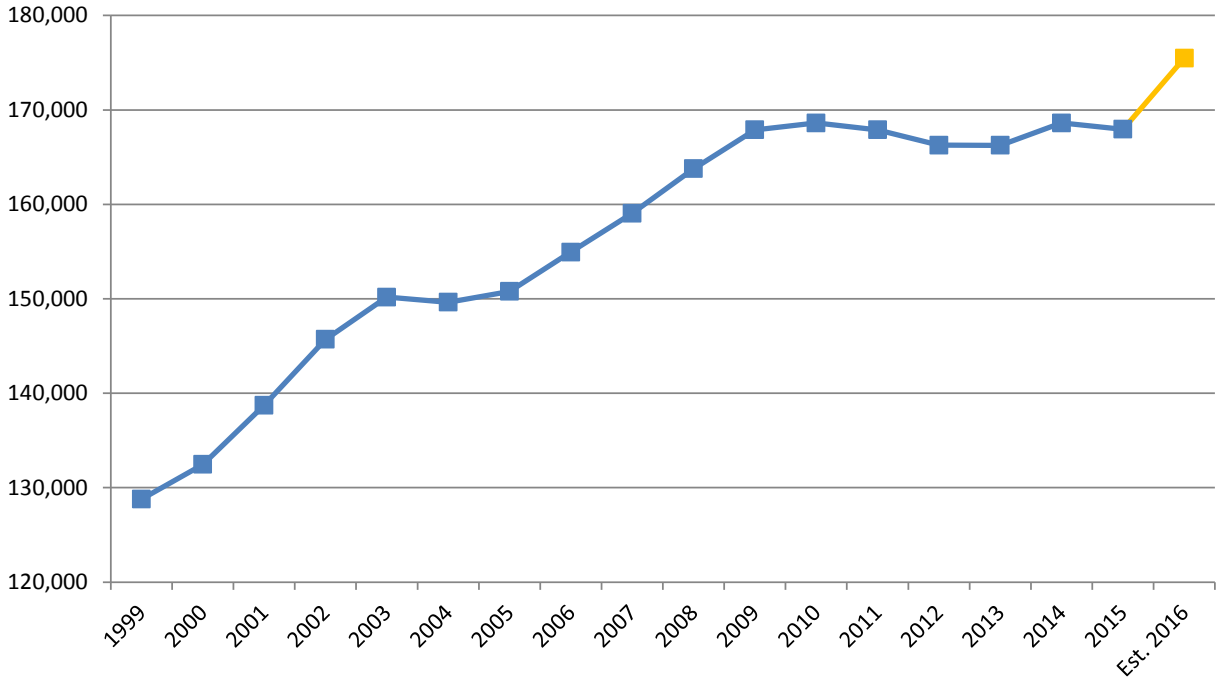
The University and the State share the goal of expanding access to a UC education. The Budget Act of 2015 provided $25 million to the University to grow enrollment of California resident undergraduates by 5,000 full-time equivalent (FTE) students in 2016-17 compared to 2014-15 levels. This funding represented the second investment by the State dedicated to enrollment growth since 2008-09.

The level of State support provided to achieve this goal – $5,000 per additional student – represented only half of the State's historical share of the marginal cost of instruction. The University was expected to use its own resources to fund the remaining portion of this cost. By comparison, the State provided $10,586 per student in 2007-08 to fund enrollment growth of 5,000 students, and $10,011 per student in 2010-11 to enroll an additional 5,121 students.

The University achieved this goal – and more. Preliminary estimates suggest that UC enrolled over 6,400 more FTE California resident undergraduates in 2016-17 compared to 2014-15, and about 7,400 more than it enrolled in 2015-16. The resulting growth in California resident undergraduate enrollment between Fall 2015 and Fall 2016 was the ***largest one-year increase in California resident Fall enrollment since the end of the Second World War*** about 70 years ago. Enrollment figures from 1999 to the present are shown in Display 1, below.

Enrollment of California resident FTE in excess of the 5,000 funded in the Budget Act was, in part, the inevitable result of the terms upon which the $25 million was to be provided to the University. Funding was provided on what was effectively an all-or-nothing basis: had it fallen short of the 5,000 goal by a single student, the University would have received none of the $25 million in designated funding for enrollment growth. Consequently, campuses and the University as a whole were required to err on the side of overenrollment in order to receive even a portion of the $25 million in funding.

Display 1: Growth in California Undergraduate Student Enrollment, Fall Headcount, 1999-2016

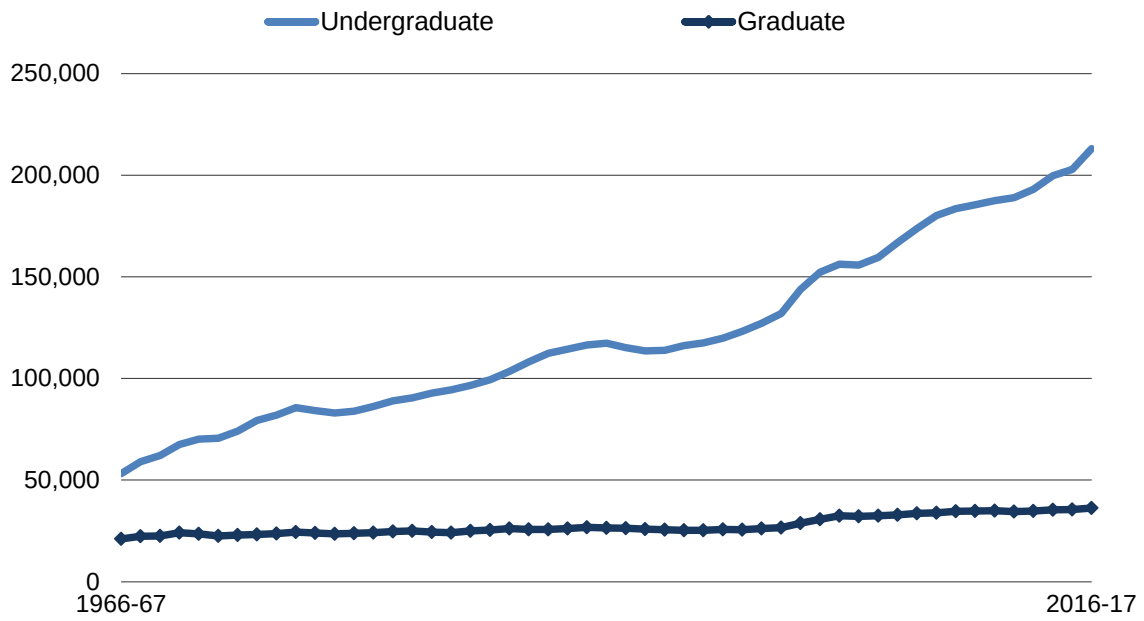


Growth in California resident undergraduate enrollment between Fall 2015 and Fall 2016 represents the single largest one-year increase in California resident Fall enrollment in the past 70 years.

This rapid growth in California resident undergraduate enrollment in a single year – following years of constrained financial resources – has caused several challenges.

- **Limited resources for instruction.** Due to limited financial resources, campuses have had to defer needed investments that directly affect students' educational experience, including hiring faculty, updating classrooms, providing access to study space, and providing the instructional technology essential to accommodating the pressing demand for courses in science, technology, education, and mathematics (STEM) disciplines.
- **Increased demand for advising and other student services.** Additional one-time funds were provided in the 2016-17 budget to help increase academic support services. However, the strain on student support budgets has been severe since the Great Recession. While very helpful, one-time funds cannot adequately relieve the strain on these budgets. Campuses report longer wait times for student advising, and access to student mental health services has not kept pace with student demand for those services.
- **Housing shortages.** Most campuses are reporting housing challenges such as turning double-occupancy rooms into triples and an inability to provide on-campus housing to students beyond their freshman year. Campuses have been converting study areas and other spaces used for academic purposes to temporary quarters as part of a short-term strategy to meet student housing needs. The student housing occupancy rate in 2015-16 was 108% and is projected to be significantly higher in 2016-17.
- **A growing imbalance between graduate and undergraduate enrollment.** Since 1966-67, UC general campus undergraduate enrollment has grown dramatically, from 53,200 FTE to an estimated 213,100 FTE in 2016-17, a 300% increase. This growth occurred largely during Tidal Waves I and II, which reflected "baby booms" of population growth

Display 2: Undergraduate and Graduate General Campus Enrollment Over Time (FTE)



Graduate students represent a much smaller percentage of UC's total enrollment today than they did in the past. Graduate students serve as educators and mentors for undergraduate students, are critical to attracting the most talented faculty members, and make important contributions to the University's research mission and, upon graduation, to the skill base of the State of California.

and reflected the University's commitment to meeting its Master Plan role of accommodating all eligible undergraduates who wish to attend. However, graduate enrollment did not keep pace, growing from 21,000 FTE to an estimated 36,300 FTE during that same period. As a consequence, the proportion of graduate students has decreased from 28.3% of general campus enrollment in 1966-67 to an all-time low of 14.5% in 2016-17. This trend is worrisome for the University and for the State due to the important roles that graduate students play at UC and at any major research university. Graduate students play a vital role in educating and mentoring undergraduate students, attracting the most talented faculty members, and contributing to the University's research mission and, upon graduation, to the skill base and economy of the State of California.

Restoring and Enhancing Quality

UC's commitment to the State of California extends beyond an offer of admission to all eligible undergraduate applicants. To remain true to its mission – and to the expectations of generations of California students and parents – the University is charged with providing an education comparable to that of an elite private institution. This charge extends back to the earliest days of the University. In 1899, for example, the following observation appeared in the *San Francisco Examiner*:

> *It is one of the glories of the University of California that for the most part its students are poor. It is carrying out the purpose of its foundation – to put the children of citizens of small means on the same footing in opportunities for education as the children of the rich.*

That phrase – *the same footing in opportunities for education as the children of the rich* – places in stark contrast the mission of the University of California compared to that of many other public universities across the nation. It is not enough for the University merely to enroll and to graduate eligible students. It must also provide them with an outstanding educational experience within the setting of a research university on par with the very best institutions in the world.

The University has been hard pressed to provide today's students with the quality of a UC education they deserve in the wake of dramatic cuts in State support that have occurred over the past decade. The trend in funding for public higher education in California has, to a large extent, mimicked a larger trend nationwide. Every state faced economic hardship caused by the Great Recession, for example. In many cases, states responded – at least in part – by reducing their investment in higher education, resulting in increased Tuition at public universities nationwide.

Neither the State nor the University of California was immune to these pressures. It is important to note, however, that increase in UC Tuition that occurred in the 2000s in response to State cuts did not fully compensate for the decline in State support that occurred during that time. This is illustrated in Display 3, which shows total available resources per student from a combination of State General Funds, UC Tuition and fees, and UC General Funds 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 36.1% – $13,000 per student – due to the following factors:

- **Increases to financial aid.** UC expenditures on financial aid increased from $241 million to $1.077 billion in constant dollars between 2007-08 and 2016. 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.
- **Increase in debt service for General Obligation and lease revenue bonds**. A 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

Display 3: Change in Available Resources from State General Funds and Student Tuition/ Fees

	2016-17 (Estimated)	2000-01 Adj. for Inflation	2000-01 Not Adj. for Inflation
State General Funds - Permanent ($M)	$3,261	$5,000	$3,192
Tuition/Student Services Fee	$3,092	$940	$600
Professional Degree Fees	$279	$68	$44
UC General Funds	$1,331	$581	$371
	$7,963	$6,590	$4,206
Resources Unavailable for Current Operations ($M)			
Financial Aid	($1,077)	($241)	($154)
Lease revenue / GO Bond payments	($350)	($168)	($107)
UCRP Contributions	($433)		
	($1,860)	($409)	($261)
Available Resources ($M)	$6,103	$6,180	$3,945
Number of Students Enrolled (FTE)	264,633	171,270	171,270
Available Resources per Student ($)	**$23,062**	**$36,086**	**$23,033**
Change since 2000-01	***-36.1%***		

After taking into account inflation and increased expenditures on financial aid, debt service, and contributions to 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).

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.

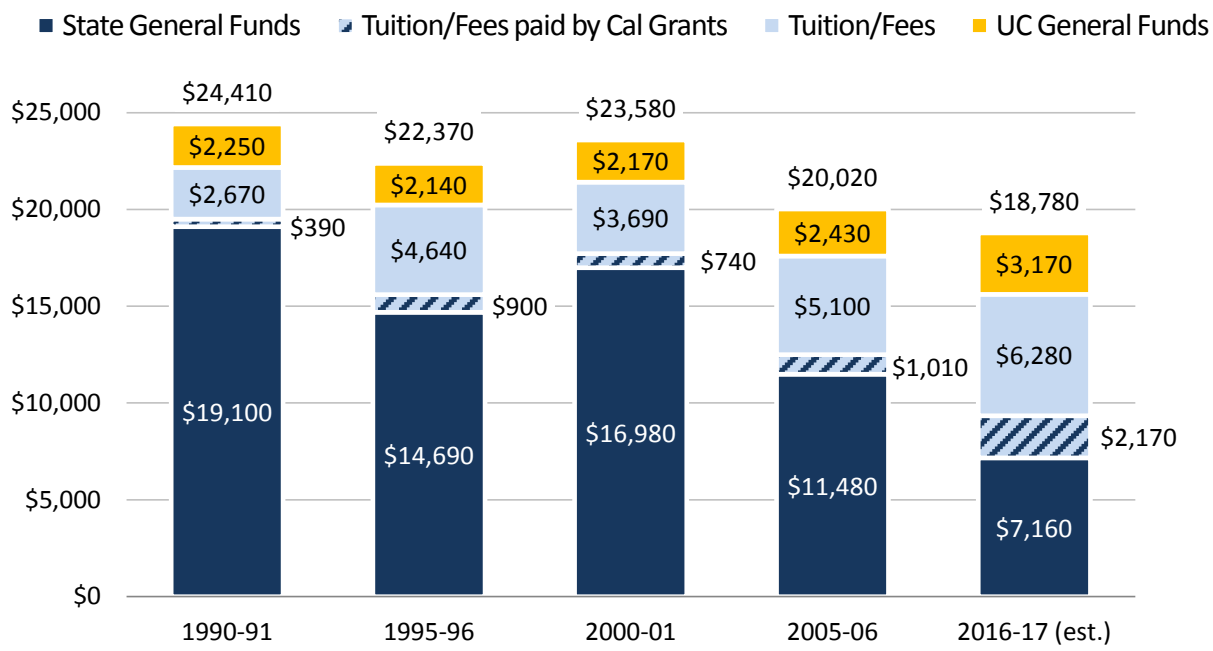
- **Employer contributions to the University of California Retirement Plan (UCRP).** UC restarted employer contributions to UCRP in April, 2010. In order to secure the financial viability of the plan, the rate of employer contributions rose quickly over a 6-year period until it reached 14% of compensation 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.
- **Enrollment growth.** UC serves over 93,000 more students in its State-supported programs now than it did in 2000-01 – an increase of nearly 55%. This increase far outpaced growth in total resources per student even before taking into account the increased financial obligations noted above.

As a result, despite an increase in *gross* revenue from State appropriations and various student charges between 2000-01 and the present, the *actual resources available* to the University from these sources have declined dramatically in constant dollars on a per student basis.

One consequence of the decline has been an overall decline in average instructional expenditures per student. As shown in Display 4, 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 three significant trends in funding for the instructional mission:

- The average expenditure per student for a UC education has 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

Display 4: Average Expenditures for Instruction per Student from Core Funds, Constant 2016-17 Dollars



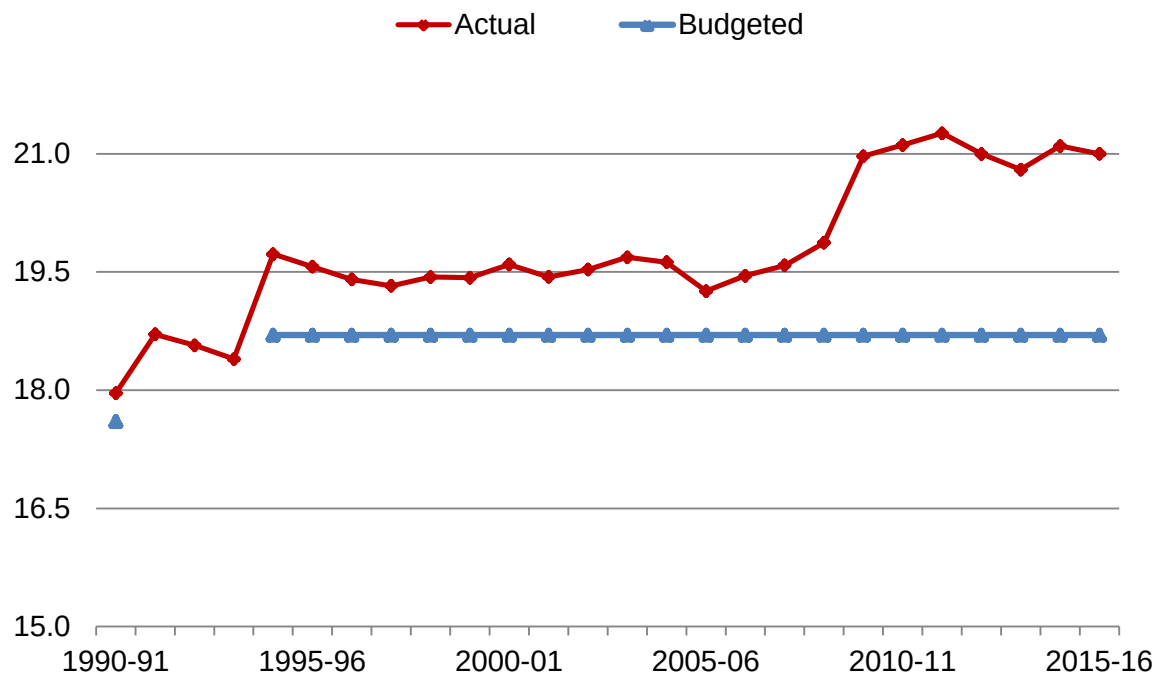
Since 1990-91, average inflation-adjusted expenditures for educating UC students have declined. The State-funded share has declined even more rapidly, with student-related charges playing a larger role. Figures are inflation-adjusted resources per general campus student, net of financial aid.

at an excessive rate, instructional expenditures at UC have declined, not increased, on a per student basis compared to most periods prior to the Great Recession.

- 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, just 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 towards 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 to 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) now contribute 17% of the total.

The long-term erosion in average instructional expenditures per student has had direct consequences for UC students' academic experience. One well-recognized measure of instructional quality is the student-faculty ratio. Display 5 tracks the budgeted and actual student-faculty ratio since 1990-91. This ratio has risen at various times in the University's history, each time in response to significant budget cuts. The most recent recession was no exception, as campuses struggling to manage their budgets against the backdrop of uncertain funding were forced to delay hiring or make decisions not to fill

Display 5: Budgeted and Actual Student-Faculty Ratios



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

vacant positions on a permanent basis. As a result, the actual student-faculty ratio rose more sharply than in previous periods of economic downturn.

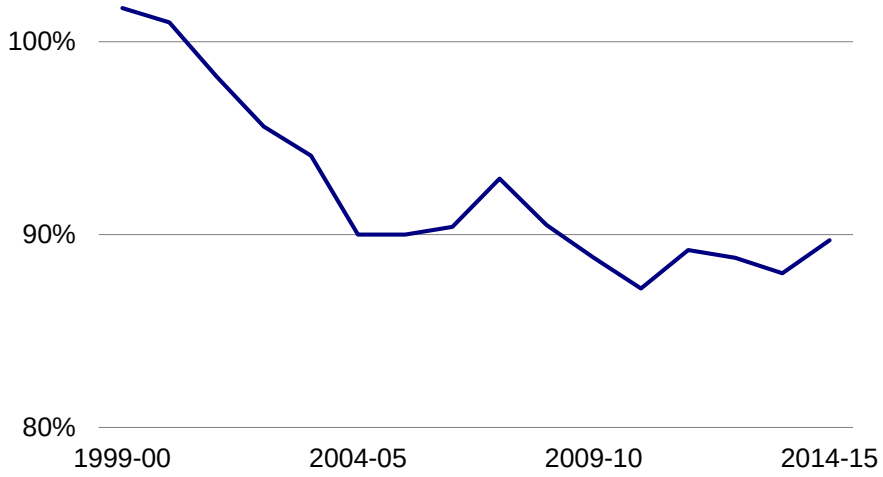
UC has made modest progress in improving the student-faculty ratio since it reached its peak of 21.3:1 in 2011-12. Further improving the student-faculty ratio would permit the University to:

- offer smaller class sizes where appropriate,
- improve the quality of the educational experience and breadth 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.

A high-quality educational experience for students is directly related to having the opportunity to learn from and collaborate with top faculty. An improved student-faculty ratio is one factor than can help attract and retain high quality faculty who are both dedicated educators and outstanding researchers. The market competitiveness of faculty compensation is another factor – one that is of ongoing concern to the University due to a long-term decline in faculty compensation levels relative to the market. A little more than a decade ago, UC's faculty salaries were on par with the market. As shown in Display 6, 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.

Display 6: Ladder Rank Faculty Salaries as a Percentage of Market

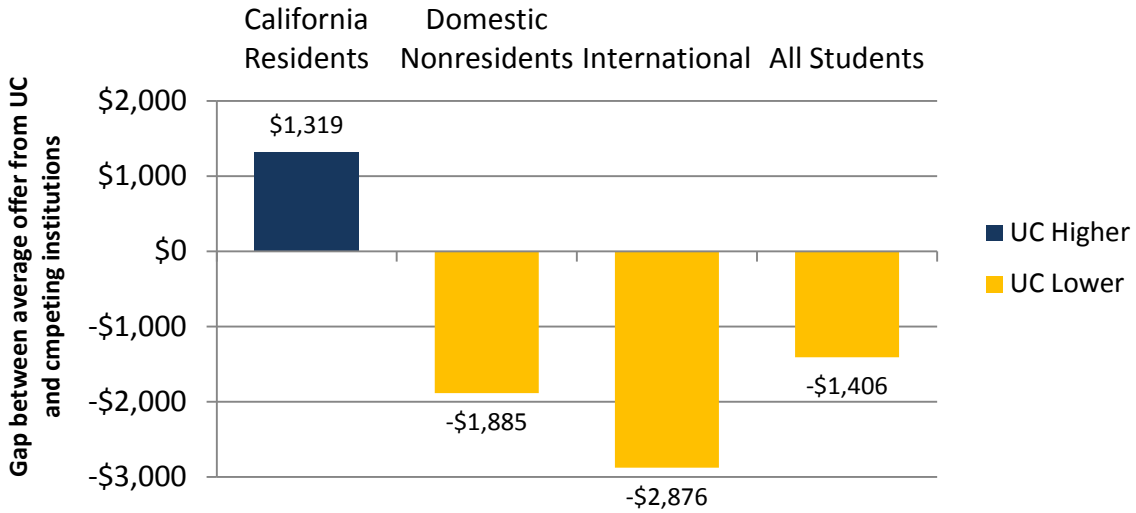


Faculty salaries at UC have declined relative to UC's comparison institutions. In 2014-15, the most recent year for which market data are available, UC's faculty salaries were 10.3% below those of UC's comparison institutions.

Just as the University competes for the most talented faculty members in a global labor market, it must also compete with other universities around the world to enroll the best graduate students. Identifying and attracting the most promising students to the University's academic doctoral programs is particularly critical for a major research university like UC.

The financial support offered by UC to students admitted to its academic doctoral programs continues to lag offers from other research universities. As shown in Display 7, offers from UC to California residents are slightly more competitive than the offers received by these students from other institutions. However, for nonresident domestic students as well as international students, the average offer from UC is less than the average offer from competing institutions.

Display 7: Competitiveness of UC Financial Support Offers to Academic Doctoral Students



A 2013 survey found that UC offers were competitive for applicants who were California resident students, but were generally below the offers that domestic nonresident and international students received from other institutions.

As described later in this chapter, the University's budget plan for 2017-18 includes $50 million in strategic investments to hire faculty, increase graduate student support, expand technology essential to instructional delivery, and rebuild other areas where the impact of recent budget cuts on students' academic experience have 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.

Improving Affordability

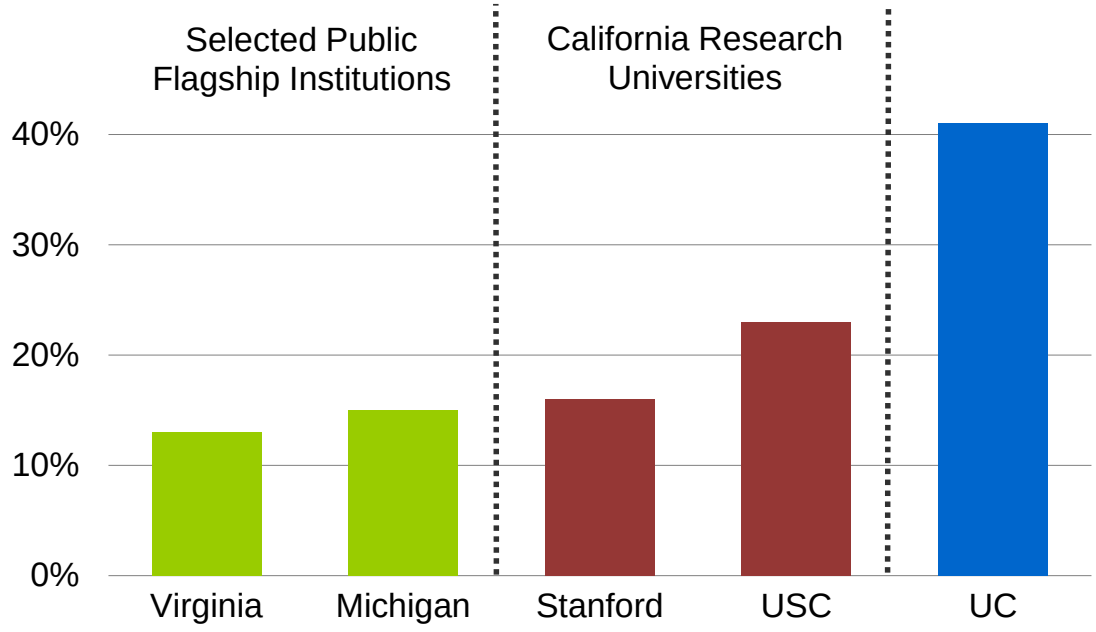
The University's ability to provide a world-class education to an increasingly socioeconomically diverse population is unmatched by any institution in the nation. The financial aid available to UC undergraduates plays a critical role in this success.

Financial aid allows students from every income level to attend and thrive at UC. In doing so, it also contributes greatly to the University's ability to enroll an ethnically diverse population of undergraduate students. A significant percentage of African-American students (48%), Chicano/a or Latino/a students (51%), and Asian American students (35%) at UC are from lower-income households.

One indicator of the University's achievements in this area is the percentage of University of California undergraduate students who qualify for federal Pell Grants. A far higher percentage of UC students received Pell Grants – 41% of all UC undergraduates – than at any other comparatively selective research university in 2014-15, the most recent year for which information about comparison institutions is available.

In addition to enrolling a high proportion of students from lower-income backgrounds, the University also enrolls a higher percentage of first-generation college students and students from underrepresented ethnic backgrounds compared to comparable public or private research universities.

Display 8: 2014-15 Undergraduate Pell Grant Recipients



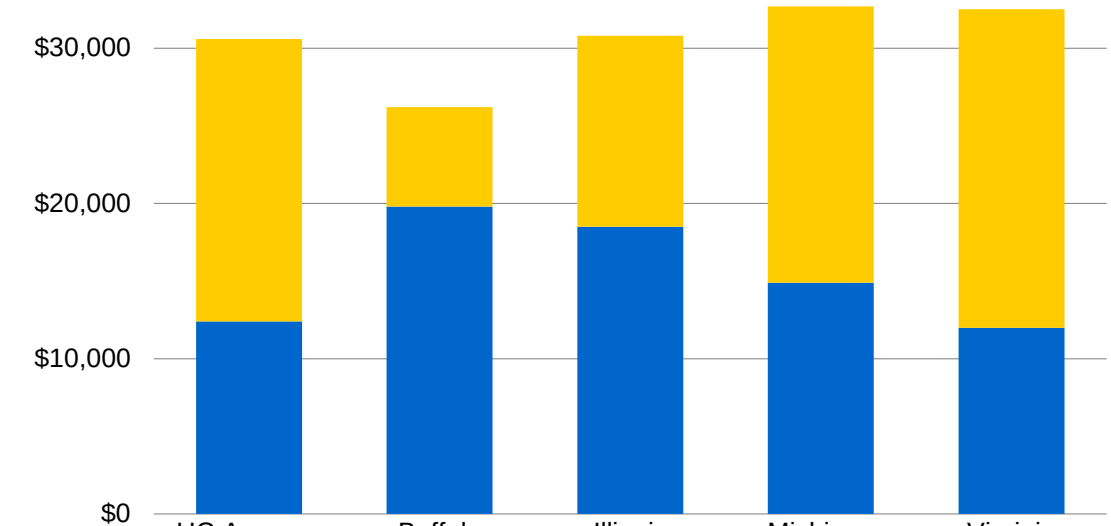
UC remains financially accessible to students from low-income backgrounds. UC enrolls a substantially higher percentage of Pell Grant recipients than comparably selective public or private institutions.

Summary

Two aspects of financial aid at UC contribute to the University's ability to serve a socioeconomically diverse student body.

- **A combination of strong State and institutional financial aid programs.** Over one-third of UC undergraduates receive Cal Grants, which typically fully cover a student's mandatory systemwide charges. Administered by the California Student Aid Commission, the Cal Grant program is the largest state financial aid program in the nation and provides over $800 million in support to UC undergraduates each year. UC students also benefit from the State's Middle Class Scholarship Program, which covers up to 40% of Tuition for eligible students with annual incomes of up to $156,000. In addition, UC students benefit from the University's own need-based aid program, which is funded primarily from undergraduate Tuition revenue. UC undergraduates receive over $700 million annually from this program, which covers Tuition and fees for many students with financial need who are ineligible for Cal Grants and provides assistance for other costs that students face in addition to Tuition and fees. While strong aid programs exist in other states and at other public institutions, UC students are in the unique position to benefit from a combination of strong State and institutional financial aid programs.
- **A financial aid program that addresses all student expenses, not just fees.** The University recognizes that students face other costs in addition to Tuition and fees when they seek to pursue a full-time, residential college education. These costs include on- or off-campus housing, food, books and supplies, transportation, health care, and other personal expenses. UC grants are awarded based on a methodology that is designed to enable every student to cover the total cost of attendance – Tuition, fees, and these other student expenses – through a combination of need-based University, State, and federal grants; a parent contribution (which is zero for parents with very low income and for students who are considered financially independent); and a student self-help contribution from a manageable combination of part-time employment and borrowing.

Display 9: 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 an average 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.

Because of these factors, UC's average net cost of attendance – a student's total cost of attendance less scholarships and grants – is lower for its need-based aid recipients than the net cost of attendance at three of the University's four public comparison institutions, as shown in Display 9. This is true despite the relatively high living expenses that are reflected in the total cost of attendance at UC campuses, which tend to be located in higher-cost areas of the state. (Note that the figures in Display 9 reflect all need-based aid recipients, regardless of income. For the lowest-income students, UC's average net cost is about $9,700 in 2016-17.)

The University and the State's commitment to affordability stands out in other ways as well. Rising student loan debt levels have received considerable attention across the country. In contrast, 46% of UC's 2014-15 graduating class of undergraduates had no student loan debt. The average debt among the 54% who borrowed was $19,925 ($20,530 for those who were admitted as freshmen), which is well below the national average of $28,950 and is manageable within the context of UC students' typical annual earnings after they graduate.

As noted earlier, Cal Grant awards primarily cover students' mandatory systemwide charges. UC grants cover these mandatory charges for other students and also provide support to students with the greatest financial need to help cover costs other than Tuition and fees. An estimated $250 million of UC grants – roughly 1/3 of all UC grants awarded – is provided to cover costs in addition to systemwide Tuition and fees. (UC undergraduates received more than $540 million from a combination of UC, federal, and State grants last year to help cover costs such as housing, food, and books.)

UC grants are funded primarily by Tuition revenue: when Tuition rises, the University sets aside one-third of the new revenue to augment its institutional financial aid program. Because UC Tuition has remained flat since 2011-12, the University's ability to help cover cost increases in living expenses and other costs beyond Tuition and fees has been limited in recent years. This limitation, combined with rapid increases in off-campus rent in some campus communities due to the strengthening economy, has led to a growing concern about students' ability to cover basic living expenses. The Tuition adjustment proposed for 2017-18 will result in additional funding for UC grants (in addition to higher Cal Grant awards) to help address this concern, as described later in this chapter.

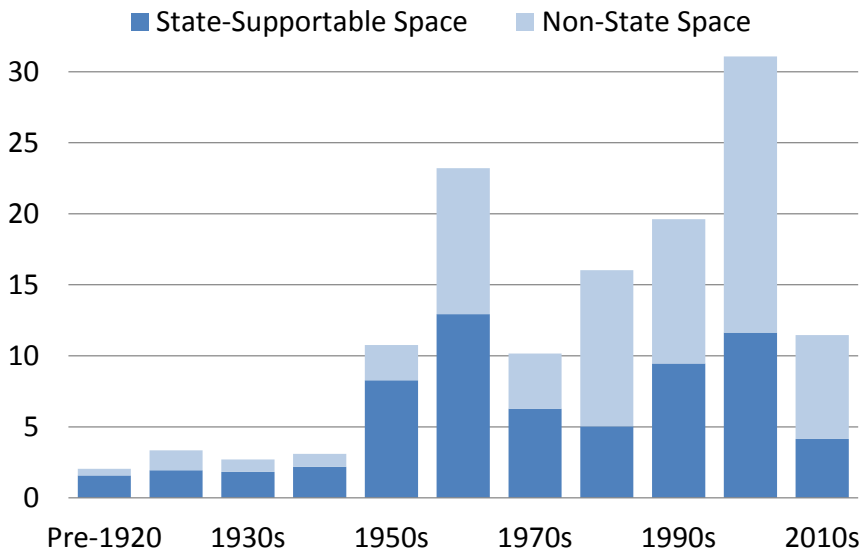
Addressing Urgent Capital Needs

For decades, the University relied upon substantial funding from the State to develop the land, construct the buildings, and provide the facilities needed to deliver instruction, conduct research, and fulfill other aspects of the University's mission. The primary sources of this funding were General Obligation bonds, which are secured by the full faith and credit of the State of California, and lease revenue bonds issued through the State Public Works Board.

Historically, State-financed capital projects expanded in tandem with the State's projected need to accommodate growing numbers of students. The State made significant investments in University construction during the 1950s and 1960s, for example, to accommodate the "baby-boom" generation – children born in the years immediately following the end of the Second World War. The State's investment spiked again in the 1990s and early 2000s to accommodate the children of this generation, often referred to as "Tidal Wave II." Display 10 shows the rapid expansion of the University's physical plant during both of these two periods.

As a result of this funding pattern, nearly 60% of the University's State-supportable space is now more than 30 years old, with 42% of that space built between 1950 and 1980. These aging facilities are more expensive to maintain and, with building systems at or beyond their useful life, are a principal driver of the University's escalating deferred maintenance and capital renewal needs. Moreover, specialized research facilities comprise a growing percentage of the University's inventory of space eligible for State support. The higher maintenance and utility costs associated with this space place tremendous strain on the University's budget for the operation and maintenance of plant (OMP).

Display 10: University Space by Decade of Construction (Gross Square Feet in Millions)

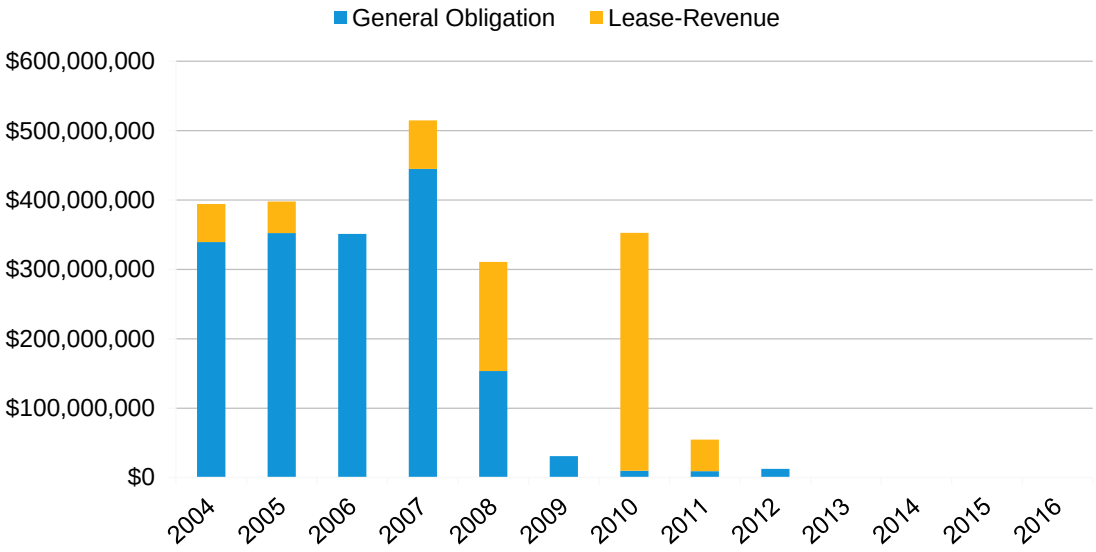


The University's physical plant expanded rapidly in the 1950s and 1960s and again in the late 1990s and 2000s.

In addition to maintaining existing facilities, the University must make new investments to accommodate enrollment growth that has occurred since Tidal Wave II. This includes not only the planned expansion of the Merced campus to serve 10,000 students by 2020 (known as *Merced 2020*) but also the addition of classroom space and other facilities throughout the UC system.

In recent years, State financing for University of California capital projects previously available through General Obligation and lease revenue bonds has dwindled. Display 11 depicts the decline from both sources in available funding for the University's needs.

Display 11: UC General Obligation and Lease Revenue Bond Funding by Year



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.

In lieu of issuing bonds to support capital projects at UC and CSU, the State has permitted both University systems to use a portion of their annual State General Fund appropriation for debt service on privately financed projects. Assembly Bill 94 (2013) allows UC and CSU to use their State General Fund allocations, with certain conditions, to finance the design, construction, and equipping of academic facilities to address seismic and life safety needs, enrollment growth, modernization of out-of-date facilities, and renewal or expansion of infrastructure to serve academic programs. Senate Bill 81 (2015) expanded the eligible use of the allocation to include availability payments, lease payments, installment payments, and other similar or related payments for capital expenditures. These provisions authorize the University to use its State General Fund support appropriation to make debt service payments on its General Revenue Bonds issued for projects that have been approved by the State.

As described below, the University's budget plan for 2017-18 includes provisions to address both elements of the University's capital needs: addressing its growing deferred maintenance backlog and funding selected new capital programs under the provisions of AB 94 and SB 81.

SUMMARY OF THE UNIVERSITY'S 2017-18 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 their financial circumstances;
- **addressing the University's most pressing infrastructure needs** within a context of aging facilities and prospects for future enrollment growth; and
- **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 2017-18

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. Moreover, as a research university, UC must educate enough graduate students to meet the state's economic development and workforce needs for graduates with advanced degrees, help advance knowledge through its research mission, and work with faculty and undergraduate students as part of the education continuum. The 2017-18 budget plan provides the resources needed to increase enrollment at both the undergraduate and graduate levels.

The 2017-18 budget plan reflects enrollment growth of 2,500 California resident undergraduate students and 900 graduate students over 2016-17 levels. The plan also reflects an additional 1,000 undergraduate nonresident students systemwide, which is less than the 1,200 increase that was incorporated into the University's budget plan for 2016-17. Projected expenditures associated with this enrollment growth are about $18,000 per student (excluding financial aid) based upon the University's longstanding marginal cost calculation methodology. Of this amount, the State's historical share has been

$10,000 per student, with the remainder covered by the Tuition and fees paid by the student (less the amount used for financial aid).

The 2017-18 budget plan anticipates $18.5 million to be appropriated in 2016-17 and sustained in 2016-17 as a permanent augmentation to fund a portion of the cost associated with California resident undergraduate enrollment growth of 2,500 students. This funding – which equates to $7,400 per student – remains well below the State's historical share of the marginal cost of instruction. Nevertheless, it represents a significant improvement over the $25 million provided by the State in 2016-17 to increase enrollment by at least 5,000 students over 2014-15 levels (equivalent to $5,000 per student). The remaining cost of enrolling these students will be covered, in part, by continuing to phase out financial aid provided through the University Student Aid Program to nonresident undergraduate students. (Students who currently receive this aid would not be affected by this 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 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 University is requesting an additional $9 million above the base budget increase to support the enrollment of 900 graduate students in 2017-18.

Investment in Student Success and Academic Excellence. As noted earlier, reinvestment in the academic infrastructure of the University is a top priority. A number of indicators are commonly used when rating great universities. They include, among other things, maintaining an outstanding faculty, measured in terms of individual achievements as well as adequate numbers to teach and train, and recruiting and educating outstanding undergraduate and graduate students. The areas identified for investment in academic quality are critical elements in any academic institution's ability to maintain excellence and have all been identified by the Regents as high priorities for many years, prior to the onset of the most recent fiscal crisis. Consistent with the University's long-range plan, the University 2017-18 budget proposal proposes $50 million toward this investment for the following types of programs:

- **Improving the Student-Faculty Ratio.** The University's student-faculty ratio deteriorated dramatically in 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 where possible and to 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 that are necessary for new faculty to establish their research teams and projects and to become productive 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 have long fueled 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 a key factor in attracting and retaining the highest-quality faculty. The University must ensure that the amount and duration of graduate student support remains competitive.

- **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 to address ongoing maintenance needs – all of which were chronically underfunded before the recent fiscal crisis and now are even less well-funded, given recent budget constraints.

Improving Affordability. The budget plan for 2017-18 includes $49.3 million in additional student financial aid for undergraduate and graduate students. For undergraduate students, the additional aid is more than enough to cover the proposed adjustments to Tuition and the Student Services Fee for UC financial aid recipients. In fact, in addition to covering the adjustment for these students, the revenue is expected to provide them with between $150 and $200 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 "Financial Aid, Tuition, and UC Affordability" section of this chapter.

Expanded Student Mental Health Services. The budget includes $4.6 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 in order 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 2017-18 budget plan includes $50 million for deferred maintenance, including a request for $35 million of one-time funds from the State for this purpose and a commitment of other revenues to this pressing budget need. The University's deferred maintenance backlog is not simply a matter of peeling paint and dilapidated laboratories or the inconvenience of leaky roofs and broken elevators; deferred maintenance 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.** As noted earlier, the University is faced with a growing backlog of capital projects over the coming years. 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. The budget plan for 2017-18 includes $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 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 new funding is provided to support them. Below is a description of the major mandatory cost increases projected for 2017-18:

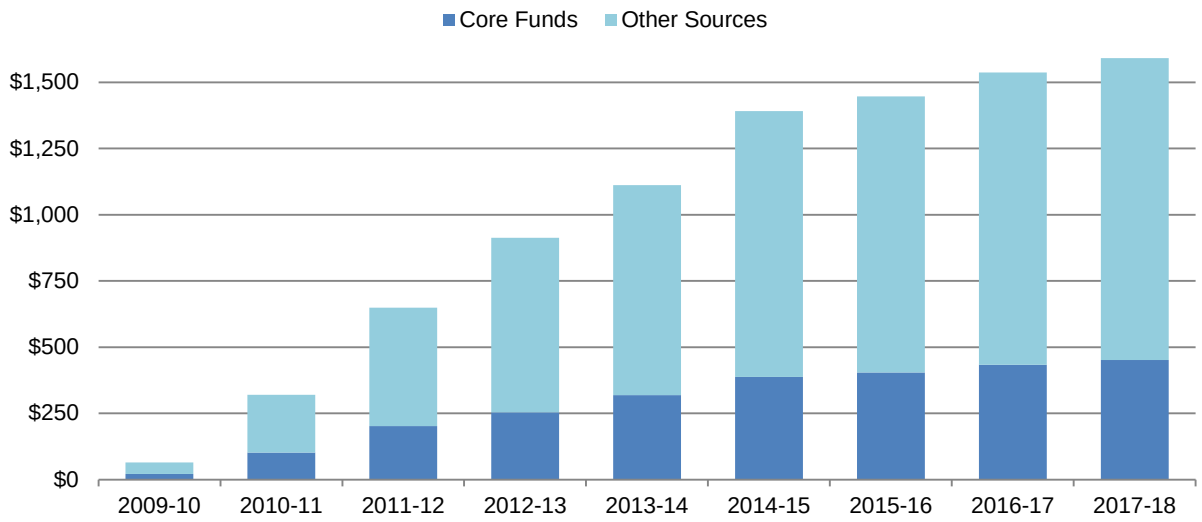
- **UC Retirement Plan.** The University of California Retirement Plan (UCRP) provides pension benefits for more than 56,000 retirees and survivors and has more than 125,000 active employee members as of July 1, 2016.

  The 2017-18 budget plan includes $18.3 million for the increase in core-funded employer contributions to the retirement system. With no expected change in the 14% current employer contribution rate, this increase represents only new costs associated with anticipated employee growth, primarily of faculty and other academic staff. Display 12 shows how employer contributions to the retirement system have leveled off since 2014-15 as the contribution rate has remained at the current 14% level. UC's employer contributions are expected to rise to $452 million from core funds and $1.6 billion from all fund sources in 2017-18.

  Part of the multi-year funding plan for the University agreed to with the Governor in May 2015 called for the University to add a cap on pensionable salaries consistent with the cap established in 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. Because these changes will be prospective and only affect new employees hired on or after July 1, 2016, they will not impact the cost increases anticipated for 2017-18. Proposition 2 funds being directed to the unfunded liability cannot be used to offset cost increases or otherwise relieve the impact of employer contributions on UC's operating budget.

- **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.

Display 12: Actual and Projected Employer Contributions to UCRP by Fund Source (Dollars in Millions)



Employer contributions to UCRP restarted in April 2010. Contribution rates will remain at 14% of employee covered compensation in 2017-18, at a cost of about $452 million to core-funded programs and $1.6 billion in total.

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 health benefit costs in 2017-18 are expected to increase by about four percent, or $19 million.

In addition, employees have been required to bear a larger responsibility for the rising costs of these benefits, partially offsetting any salary increases they may have received in recent years. In 2002-03, the University adopted a progressive medical premium rate structure (based on full-time salary rates) designed to help offset the impact of medical premium increases on lower-paid employees. While UC pays approximately 87 percent of monthly medical premiums for employees on an aggregate basis, the University covers an even larger portion of the premium for those in the lower salary brackets. In the current environment, with limited new funding and continuing cost pressures, it is expected that some of the cost increases will continue to be borne by most employees.

- **Retiree Health Benefits.** In 2016-17, more than 62,000 UC retirees and beneficiaries are eligible to receive or are receiving an estimated $287 million of 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 are estimated to increase by $8.1 million in 2017-18.

  Because accumulated future retiree health benefits costs are not pre-funded, UC has an unfunded liability for retiree health representing the cost of benefits accrued to date by current faculty, staff, and retirees based on past service, estimated to be $21.2 billion as of July 2016. In December 2010, to reduce long-term costs and the unfunded liability for retiree health, the Regents approved changes to retiree health benefits that included reductions in UC's aggregate annual contribution to the Retiree Health Program, and a new eligibility formula for all employees hired on or after July 1, 2013, existing employees with fewer than five years of service credit, and existing employees whose age plus service credit is less than 50 as of June 30, 2013.

- **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 $29.9 million in 2017-18.

- **Faculty Merit Program.** The University has maintained the faculty merit program each year – even through years of fiscal crisis – because of the importance of this program 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 2017-18.

- **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. Throughout the recent recession, inflationary pressures remained relatively soft. However, as the State economy has improved, cost pressures have begun to build. Based on the Department of Finance recent projections, the University's 2017-18 expenditure plan includes $27.3 million for non-salary price increases of 2.5%.

- **Compensation.** Remuneration studies conducted in 2009 and 2014 documented a significant competitive gap between UC and the market with respect to employee compensation. The 2014 study, for example, found that salaries

for UC's ladder rank faculty lagged the market by 12% across all pooled ranks; health and welfare benefits were 7% below market; total retirement packages (including the defined benefit plan and retiree health plan) were 6% above market; and UC's total remuneration position was 10% below market, due primarily to non-competitive salaries.

The study also compared UC's competitive position in 2009 and 2014. The major findings included the following: UC's position with respect to total remuneration fell 8 percentage points 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 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. Similar downward trends exist for other staff salaries in most workforce categories.

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. Maintaining competitive compensation for all staff is a high priority of the University and an important element of a sustainable financial plan. Consistent with UC's longer-term financial planning, the budget plan in 2017-18 proposes an average increase in compensation of 3% for nonrepresented salary and staff, with a total cost of $81.8 million.

Revenue and Savings Components of the 2017-18 Budget Plan

The 2017-18 budget plan proposes $465.2 million in revenue increases to match expenditure needs. These increases fall into four revenue categories.

- **Cost Savings/Alternative Revenue Sources.** The budget plan assumes $25.8 million in funding attributable to continued asset management strategies, savings through new systemwide procurement contracts in 2017-18, savings associated with Fiat Lux (the University's self-insurance initiative), 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. These initiatives continue the University's practice of resolving a portion of its funding needs through internal actions to reduce costs, promote efficiencies, and generate new revenue.
- **State General Funds.** The plan includes a 4% base budget increase, or $131.2 million in new State General Funds, as proposed in the Governor's multi-year funding plan. The plan assumes receipt of $18.5 million in permanent State funding in 2016-17 associated with enrolling an additional 2,500 undergraduate California residents in 2017-18 compared to 2016-17 levels. It also includes a request for $9 million from the State to support graduate enrollment to complement and support dramatic increases in undergraduate enrollment that have occurred since 2014-15. The plan proposes $35 million in one-time funds for deferred maintenance, comparable to the funding provided in the 2016-17 budget for this purpose.
- **Systemwide Tuition and Fees.** The plan includes $142.6 million of new revenue from Tuition and the Student Services Fee. More than one-third of this amount ($49.3 million) will be provided as financial aid to UC students. (See the section below for additional details.) Another $36.2 million will help cover costs associated with the proposed enrollment growth levels described above. The remaining net revenue – $9.2 million from a $54 adjustment to the Student Services Fee and $48 million from a $282 adjustment to Tuition – 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 to backfill reductions in State support. The budget plan proposes $70.7 million in new revenue from Nonresident Supplemental Tuition based on a 5% adjustment to undergraduate nonresident Tuition and a projected enrollment increase of 1,000 students – less than the growth reflected in the 2016-17 budget plan. (This will yield $60.7 million net of instructional costs after taking into account the other Tuition fees that students pay pay.)

FINANCIAL AID, TUITION, AND UC AFFORDABILITY

University of California Tuition and Fees In Context

The University's average Tuition and fees for state residents remains low relative to the amounts charged by most of the University's public comparison institutions. As shown in Display 13,

- UC's undergraduate resident Tuition and fees are lower than the amounts charged by three of UC's four public comparison institutions; and
- UC's graduate resident Tuition and fees are the lowest among UC's public comparison institutions.

The Tuition and the Student Services Fee adjustments proposed for 2017-18 are not expected to change this pattern.

Display 13: University of California and Comparison Institution Tuition and Fees, 2016-17

	Undergraduate		Graduate	
	Resident	Nonresident	Resident	Nonresident
SUNY Buffalo	$9,574	$26,814	$13,347	$24,687
Illinois				
Lowest	$14,856	$29,238	$15,288	$29,524
Highest	$20,062	$40,804		
Average	$17,459	$35,021		
Michigan				
Lowest	$14,238	$45,246	$21,630	$43,510
Highest	$19,698	$54,138		
Average	$16,968	$49,692		
Virginia				
Lowest	$13,722	$45,066	$17,688	$28,512
Highest	$19,734	$50,158		
Average	$16,728	$47,612		
UC	**$13,551**	**$40,233**	**$13,095**	**$28,197**

For resident students, UC's Tuition and fees are generally less than at its public comparison institutions and are much less than the amounts charged by private institutions. (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. 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.)

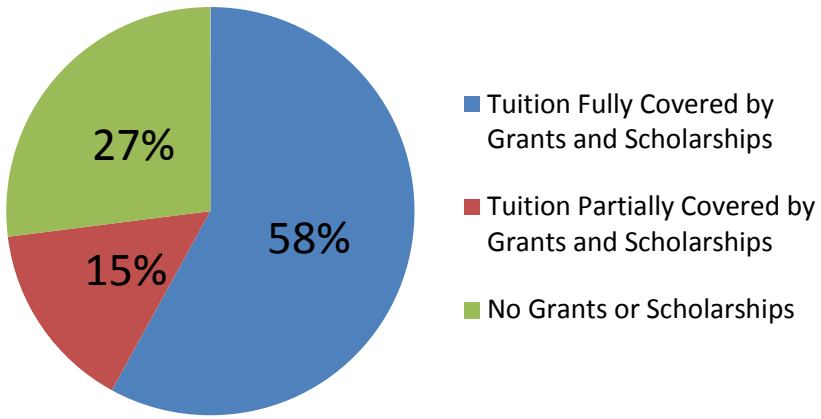
Tuition and Undergraduate Affordability

Most California resident undergraduate students at UC have their Tuition and fees fully covered by grants or scholarships. As shown in Display 14, in 2015-16, 58% of California resident undergraduates effectively paid no Tuition or fees due to grant and scholarship awards, and another 15% of California undergraduates received awards that partially offset their charges.

Under the budget plan, about two-thirds of California resident undergraduates will have the proposed adjustments to Tuition and the Student Services Fee fully covered by additional financial aid, with most receiving aid to help cover other cost increases as well. This additional aid results from three different programs:

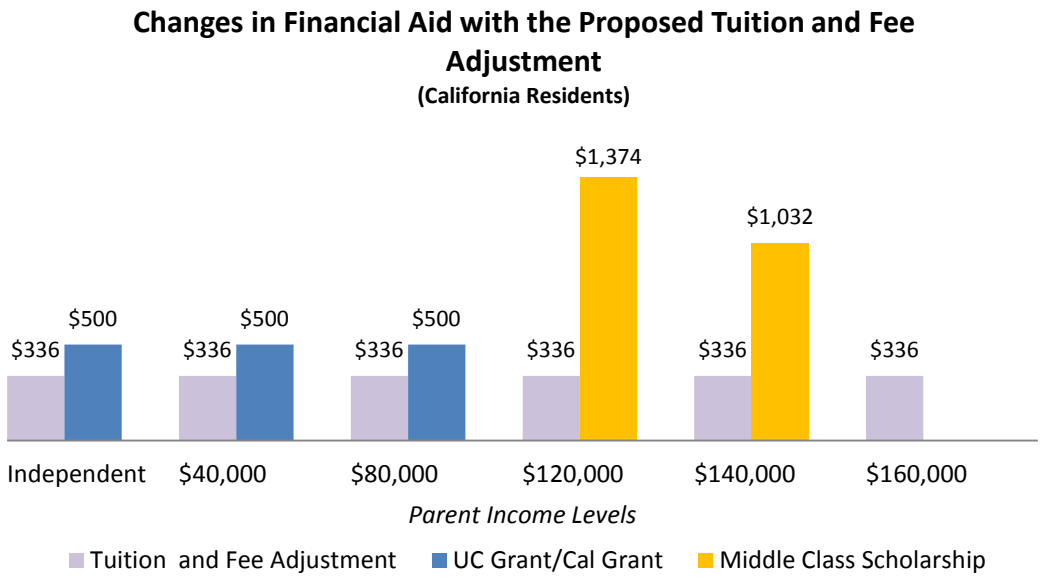
- The State's **Cal Grant program** will cover the increase in Tuition/fees for over one-third of California resident undergraduates.
- **UC Grants** will increase because the University will set aside 33 percent of new undergraduate Tuition revenue for need-based grant assistance. This will fully cover the increase in Tuition/fees for some students who do not qualify for Cal Grants (e.g., many independent students) and will help students with the greatest need to cover a portion of their other cost increases as well.
- The State-administered **Middle Class Scholarship (MCS)** program will provide increased aid to students who might otherwise not qualify for need-based grant assistance like a Cal Grant or a UC Grant. The MCS is being phased in over four years beginning in 2014-15 and is designed to ensure that eligible students receive grant and scholarship assistance to cover up to a specified portion of in-state Tuition and fees: 40 percent for students with family incomes less than $100,000, falling to 10 percent for those with incomes up to $150,000. (The actual percentage of Tuition and fees covered will depend upon funding appropriated by the State for the program and the pool of eligible applicants.) During this phase-in period, students' MCS awards are expected to increase from one year to the next by an amount greater than the proposed adjustments to Tuition and the Student Services Fee – effectively resulting in lower net Tuition/Fees for these students in 2017-18 compared to 2016-17.

Display 14: Percentage of California Residents With Tuition and Fees Covered by Grants and Scholarships



In 2015-16, 58% of California resident undergraduates effectively paid no Tuition or fees due to grant and scholarship awards, and another 15% of California undergraduates receive awards that partially offset their Tuition and fees.

Display 15: Estimated Changes in Financial Aid With Proposed 2017-18 Tuition/Fee Adjustments



Most students will receive additional aid from the Cal Grant program, UC grants, and/or the Middle Class Scholarship Program to fully cover the proposed Tuition/fee adjustments and help cover other costs like housing, food, or books.

The combined impact of these programs is shown in Display 15. For low and middle-income students, the projected increases in financial aid will exceed the proposed adjustments to Tuition and the Student Services Fee. The net result is that these students will not only have the proposed adjustments completely covered – they will also receive additional aid to help cover other cost increases in 2017-18, reducing their need to work and borrow.

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.

TOWARD A SHARED VISION OF SUCCESS

The 2017-18 budget plan reflects critical investments needed to maintain the University's commitment to the three pillars of its success – affordability, access, and excellence. Recent examples of the University's success in these areas appear in Display 16 on the following page.

- The plan provides a path forward for 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.
- Under the plan, every UC campus will have new resources to hire additional faculty, improve the student-faculty ratio, expand course availability, and provide 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 an estimated two-thirds 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.

The plan represents a partnership between the University, the State, and other UC stakeholders 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 16: 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 46.0% for the 1997 entering cohort to 64% for the 2011 cohort). The most recent six-year graduation rate is 85.0%. Four-year rates among freshman Pell Grant recipients have increased by 13 percentage points since the 2000 cohort.
- Transfer entrants have demonstrated similar gains, with the two-year graduation rate increasing from 37.3% for the 1997 entering cohort to 55.0% for the 2013 cohort. The most recent four-year graduation rate is 88%.
- 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 2011 cohort graduating in the summer of their fourth year. Similarly, summer enrollment after the second year allowed 11.0% of the fall 2013 transfer cohort to graduate without having to enroll in a third year. Full-time student enrollment during summer session has increased by nearly 20% over the past decade.
- 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 entire families' income during the time these students attended UC. Overall, 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. Using these criteria, in its 2016 rankings:
  - Four UC campuses are among the top 10 institutions in the nation.
  - Five rank among the top 20.
- The *New York Times'* College Access Index 2015 underscores UC's role as an upward mobility machine. Six of the top seven institutions in the College Access Index are UC campuses, with UC Irvine in the top slot.
- In the 2016 Academic Rankings of World Universities (ARWU) by the Shanghai Ranking Consultancy, only four public universities in the world appear in the top 20, and all four are UC campuses, with UC Berkeley ranking third. 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 2017 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 19th consecutive year, UC Berkeley is ranked the No. 1 Top Public School among National Universities.
  - Five UC campuses are among the top ten public institutions in the nation; six in the top 11.

Graduate Success

- UC awards more than 4,000 Ph.D.s per year, or eight percent of the nation's Ph.D.s.
- Approximately one quarter of all UC and California State University faculty received their Ph.D.s from a UC graduate program.
- Since 1980, more than 300 startup companies have been launched by graduate students or emerged directly from their discoveries.
- In 2016, 19 UC graduate students received Sloan Research Fellowship awards, which recognize early-career scientists and scholars whose achievements and potential identify them as rising stars.
- Graduate students have been fundamental to the creation of UC's 4,760 active U.S. patents. UC has a total of 12,293 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 more than 14,000 students across 17 schools at seven campuses.
- The UC Davis School of Veterinary Medicine ranked No. 1 in the world in 2016, according to QS World University rankings.
- In California, *U.S. News & World Report* ranked all five UC medical centers in the top ten in 2016, including the top two: UCLA (1), UCSF (2), UC Davis (5), UC San Diego (6) and UC Irvine (10).
- The University of California system received more than $1.8 billion in fiscal year 2015 contract and grant funding from the National Institutes of Health, making it the leading recipient for high-caliber biomedical research that is driving advances in science and breakthroughs in health.

SOURCES OF UNIVERSITY REVENUES

In 2016-17, the University enterprise will generate $31.5 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 each year for more than 260,000 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 17 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 $7.8 billion in 2016-17, 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 25% of the University's total expenditures and are comprised of State General Funds ($3.1 billion[1]), student Tuition and fee revenue ($3.4 billion), and UC General Funds ($1.3 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 18 shows the distribution of core funds across major spending categories.

Non-Core Funds

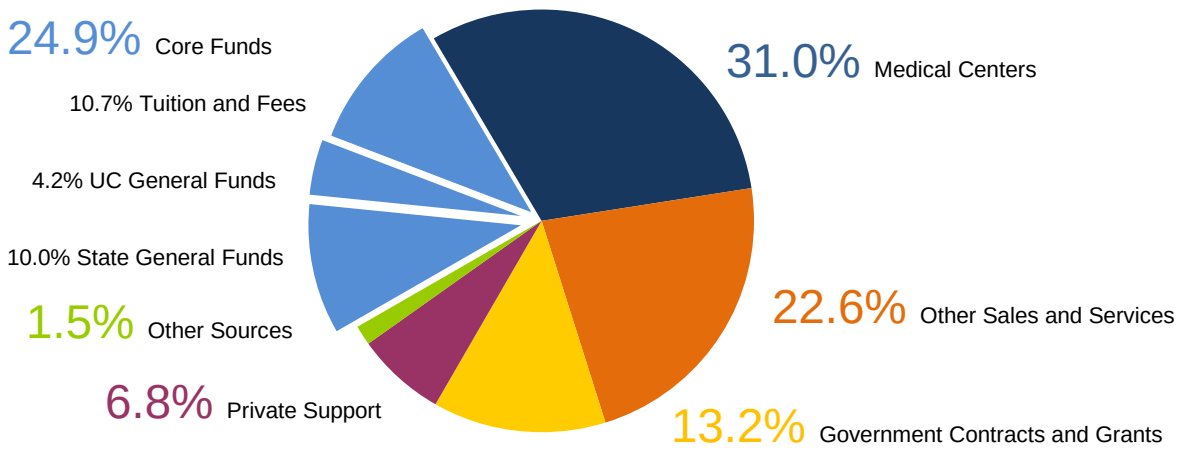
Other sources of funds augment and complement the University's core activities of instruction and research; support ancillary academic and business operations functions; allow UC to provide public service to the state and its people; and support campus learning environments that enhance the vitality, 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.

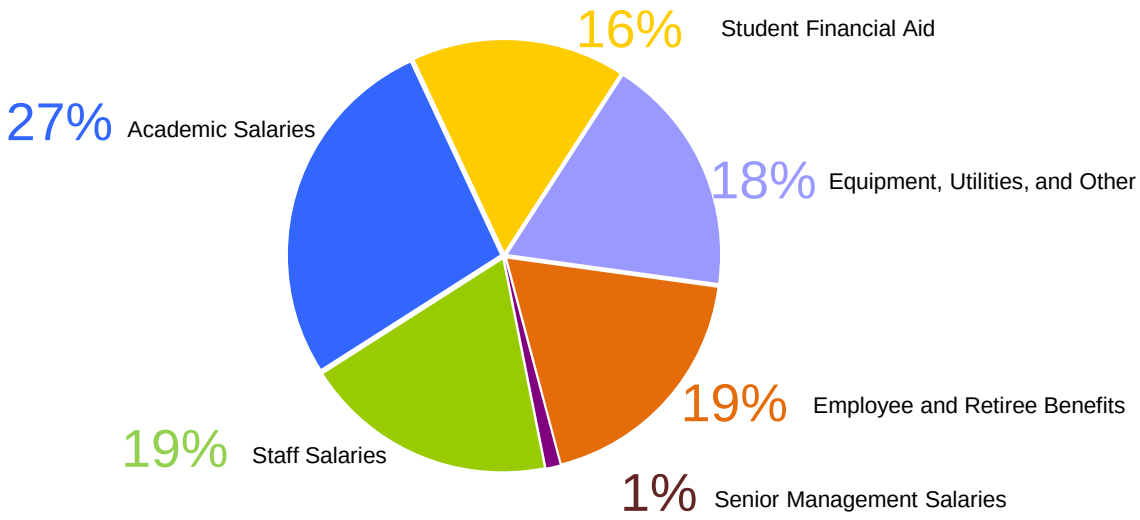
[1]This excludes General Obligation bond debt service that is in UC's base budget but which is not available for general operating budget purposes.

Display 17: 2016-17 Sources of Funds



UC's $31.5 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 18: 2015-16 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 far-sighted public investments in higher education have 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 – over 264,000 in 2016-17 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 – academic resources that are also exciting gathering places for the community.

Display I-1: UC At-A-Glance

Founded in 1868, the University of California consists of:

- 10 campuses serving over 264,000 FTE students in over 750 instructional programs in 2016-17;
- 5 academic medical centers providing 4.5 million outpatient clinic visits each year;
- In 2015-16, a nearly $5 billion research enterprise, seeking new knowledge and solutions to critical problems;
- Over 100 libraries housing 40 million print volumes, second only to the Library of Congress;
- Over 5,970 buildings comprising over 133 million gross square feet in 2014-15; and
- As of April 2016, approximately 210,900 (headcount, or 153,400 FTE) 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 maintain California's leadership role and 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 $31.5 billion in 2016-17, 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.

Historically, State funding represented the largest single source of support for the University. However, the 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 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 value 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 general funds, such as nonresident tuition and federal indirect cost recovery, have partly mitigated the impact of declines in State support for UC.

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
- 584 current, emeritus, or retired National Academy of Sciences members
- 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
- 1,657 Guggenheim fellowships since 1930 – more than any other university or college
- For 22 years running, UC has developed more patents than any university in the United States.
- The *Washington Monthly* 2016 college rankings, which consider social mobility, research, and public service, placed four UC campuses among the top 10 institutions in the nation, with the San Diego campus at the top of the list.
- In 2010, the National Research Council reviewed 322 UC programs in science, math, engineering, social sciences, and humanities, ranking 141 among the top 10 in their fields.
- Five campuses were among the top 10 American public universities in the 2017 edition of the *US News and World Report Best College* rankings.
- The medical centers at Los Angeles and San Francisco were ranked fifth and seventh, respectively, making *US News'* Honor Roll for the country's top 20 hospitals.
- In the 2016 Academic Rankings of World Universities by the Shanghai Ranking Consultancy, only four public universities in the world appear in the top 20—all four are UC campuses, with UC Berkeley ranking No. 3.

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. State General Funds, however, remain extremely important because they support the core instructional mission and make it possible to attract funds from other sources. 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 – for example, the California Institutes for Science and Innovation, a unique funding partnership among the State, industry, and UC, which is discussed in more detail in the *Research* chapter of this document.

The historic 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 derive 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. If California were a country, its economy would be the sixth largest in the world. In comparison to other states, salaries in California have been well above the national average for the last three decades.

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. Indeed, UC's discoveries, technology, and graduates are critically important to the success of many knowledge-based companies.

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 the doctorate and many 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 and 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 of importance to the state and society at large.

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 the 2006 report by economists at the California State University (CSU) at Sacramento's Applied Research Center, "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.[1]

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.[2] 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 that California faces. Just as the 2006 CSU report had projected, the PPIC noted that, for the first time, retirees are not being replaced by more plentiful and better-educated younger workers. 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.

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 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.

1 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

[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

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. And 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

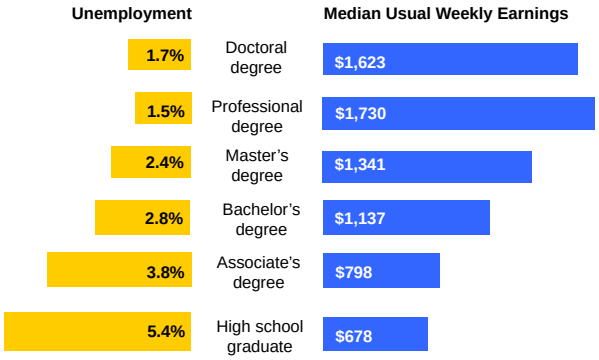
The need for more college graduates is evident, and UC is making gains towards meeting this demand. Indeed, UC's fall 2016 incoming class was the largest and most diverse class ever admitted. Among those accepting, 36 percent were from historically underrepresented minority groups – African American, American Indian, and Chicano/a and Latino/a – the largest share for an incoming class in UC's history.

The University is also making inroads towards improving the transfer rate. Specifically, 17,000 students in the fall 2016 entering class are new California Community College (CCC) transfers. This figure represents a 17 percent increase from fall 2015, the largest one-year increase in UC history. Additionally, CCC transfer students from historically underrepresented groups grew from 31 percent to 34 percent of those who accepted offers. For California freshmen and transfers combined, the overall proportion of African American students grew to 5 percent from 4 percent the year before. The proportion of Chicano/a and Latino/a students increased to 31 percent from 29 percent last year.

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.

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 families' income during the time they attended UC. Overall, incomes of UC bachelor's degree recipients double between two and ten years after graduation.

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



Source: Bureau of Labor Statistics, 2015.
*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.

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 the state of California. Though it has been long known 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.

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. 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 $31.5 billion in 2016-17, 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:

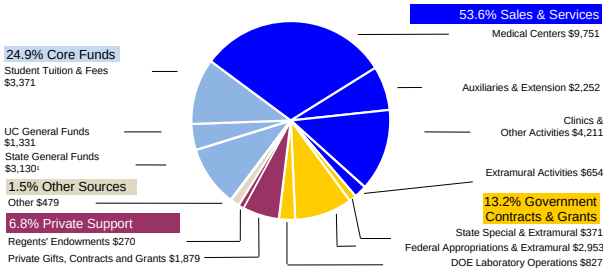
- **Core funds**, consisting of State General Funds, UC General Funds, and student tuition and fees, provide permanent funding for UC's core mission and support activities, including faculty salaries and benefits, academic and administrative support, student services, operation and maintenance of plant, and financial aid.
- **Sales and services revenues** directly support the University's academic medical centers and 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.
- **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.

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 $7.8 billion in 2016-17, these funds represent 24.9% 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.

Display II-1: 2016-17 Sources of Funds (Dollars in Millions)



UC's operating budget, totaling $31.5 billion in 2016-17, consists of funds from a variety of sources. State support, which helps leverage other dollars, remains critical.[1]

State General Funds

State General Fund support for UC provides $3.13 billion[1] in 2016-17, including $3.04 billion of critical permanent base support 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 financing for construction of the Classroom and Academic Building at the Merced campus. 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

[1] An additional $220.8 million of the University's State appropriation is dedicated to General Obligation bond debt service. Since this funding is paid directly by the State and is not available for operating needs, it is not included in the State General Fund total shown here.

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:

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

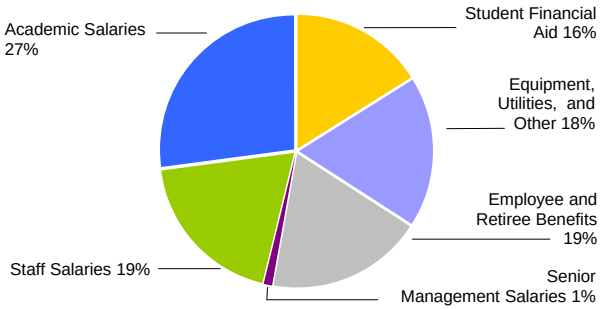
The University expects to generate $1.3 billion in UC General Funds during 2016-17. The largest sources of UC General Funds are Nonresident Supplemental Tuition ($975.5 million) and indirect cost recovery on federal contracts and grants ($280.2 million).

Student Tuition and Fees

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

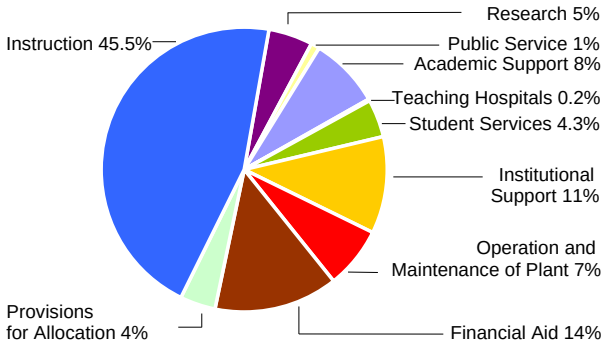
- Tuition revenue supports the University's operating costs for instruction, libraries, operation and maintenance of plant, student services, student financial aid, and institutional support. During 2016-17, Tuition is $11,220 and will generate an estimated $2.8 billion.
- Student Services Fee revenue 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 $1,074, will generate an estimated $264.6 million during 2016-17.
- 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 $278.8 million in 2016-17.

Display II-2: 2015-16 Core Funds Expenditures by Type



A little more than two-thirds of core funds support academic and staff salaries and benefits.

Display II-3: 2015-16 Core Funds Expenditures by Function



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

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

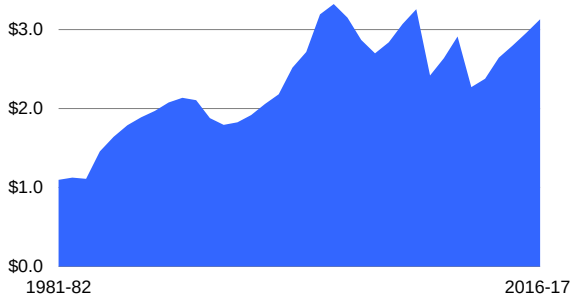
State funds represent a critical investment from California taxpayers that also enable the University to attract funds from other sources. Each year, UC attracts approximately $8 billion from outside the state and generates more than $46 billion in economic activity in California.

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.

In the late 1980s, State funding for UC doubled due to the high priority placed on the University of California by Governor Deukmejian and the Legislature. Since 1990-91, however, 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.
- In the middle of the last decade, UC entered 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 at the end of the decade. 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 is 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.
- The 2016-17 budget year marked the fourth year of the Governor's multi-year plan for UC. In addition to the $125.4 million base budget adjustment proposed by the Governor, $90.6 million in one-time funds were targeted for the Governor's and Legislature's priorities, including $35 million for deferred maintenance; $22 million to support UC's Innovation and Entrepreneurship initiative; $20 million for support services for low-income students and students from underrepresented groups; $5 million for firearms violence research; $4 million to develop online courses for K-12 students; $2 million to promote best practices related to faculty diversity; $2 million for the Wildlife Health Center at Davis for support of local marine mammal stranding networks, $0.5 million for the Underground Scholars initiative at the Berkeley campus; and $0.1 million for large whale disentanglement programs at Davis.

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 2016-17 is more than 55% above 1990-91 levels while State support for UC has grown just 37% in non-inflation-adjusted dollars. Inflation has exacerbated this disparity, as described below.

While funding from the State in real dollars tripled during the period from 1980-81 through 2007-08, the University's share of the total State General Fund budget declined markedly (see Display II-5). In 1980-81, the State dedicated 5% of the State General Fund to the University. Today, funding for UC represents just 2.8% 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. 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).

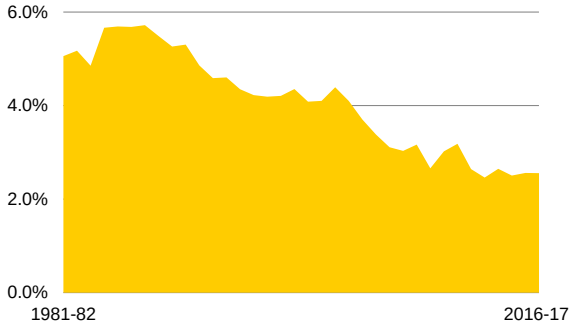
The University has fared better in some years and worse in others when compared to inflation, but until 2000-01, total core funding generally kept pace with inflation. After 2000-01, the University experienced a precipitous decline over several years in funding per student when compared to HEPI. The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

Underlying the level of core funding, however, is the shift in the distribution 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 average per-student expenditures for education in HEPI-adjusted dollars and yields several key findings:

- The average expenditure per student for a UC education has declined by 30% over 25 years – from $24,100 in 1990-91 to $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 13% of expenditures for education compared to 33% in 2016-17.

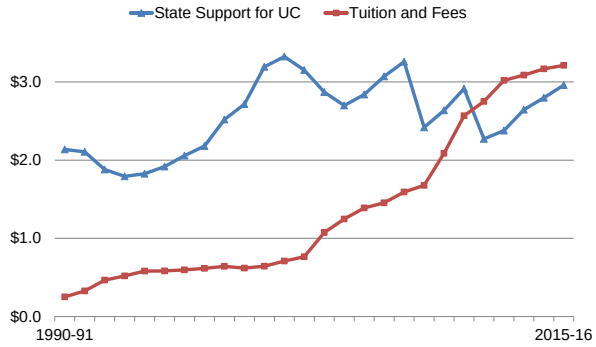
These findings raise additional points. First, although the University has struggled to meet the challenge presented by a long-term decline in State funding, elements of the educational, research, and public service functions have

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



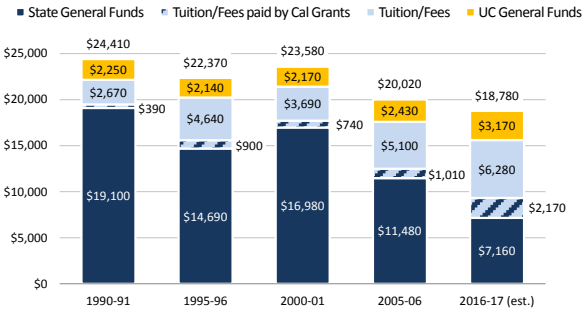
UC's share of the total state budget has declined over time. In the late 1980s, more than 5% of the State General Fund was dedicated to UC. In 2016-17, the UC share was 2.7%.

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.

been steadily compromised to preserve the core missions of the University. Austerity measures required to address the short-term budget shortfall cannot be sustained over the long term if the institution is to retain its excellence. It is unrealistic to assume that cuts of the magnitude experienced by the University over time will not damage the state's brain trust, the California economy, and individual students' chances for educational advancement. While the University has been able to reduce some costs through efficiencies that do not affect program quality, some of the reduced costs have resulted from austerity measures that are detrimental to the quality of a UC education. Examples include increases in the student-faculty ratio; faculty and staff salary lags; reductions in purchases of instructional equipment and library materials; and deferred maintenance of 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 funding from the State has declined. 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. Tuition and fees increased 92% during the recession of the early 1980s, 134% in the early 1990s, 79% in the early 2000s, and 99% beginning in 2007-08 through 2011-12.

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 the State's Cal Grant programs have helped ensure access for low- and middle-income students.

SALES AND SERVICES REVENUES

About half of the University's current budget consists of revenues from self-supporting enterprises operated by the University in support of its instruction, research, and public service missions. Such enterprises include the University's academic medical centers and 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 – 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 direct services and products being provided, but also to the price the market will bear. The excellence of the core mission operation of the University also plays a role. For example, the cutting-edge research occurring in UC medical schools helps attract patients to UC's medical centers. Conversely, damage to UC's core operations is likely to have ripple effects on other activities.

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 $9.7 billion during 2016-17. The *Teaching Hospitals* chapter discusses actions taken to address the challenges confronting the medical centers.

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, on three campuses, a portion of intercollegiate athletics or recreational activities. No State funds are provided for auxiliary enterprises; revenues are derived from fees directly related to the costs of goods and services provided. Expenditures for all forms of auxiliary enterprises are estimated to total over $1.2 billion in 2016-17.

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

In addition to the tuition and fees charged for regular 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 costs 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 and course materials and service fees. Income from University Extension, other self-supporting instructional programs, and other campus fees is projected to be $1.0 billion in 2016-17.

Educational and Support Activities

Income from sales and services of educational and support activities is projected to total $4.0 billion in 2016-17. This includes income 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 $4.1 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 or provides student financial aid.

Display II-8: Estimated 2015-16 Federal Support for UC and UC Students (Dollars in Millions)

Program Support	
Research Grants and Contracts	$2,130.4
Indirect Cost Recovery	$746.3
DOE National Laboratory Operations	$811.0
DOE Laboratory Management Fees	$21.7
Other Contracts and Grants	$253.0
Student Financial Aid	
Pell Grants	$376.7
Other Undergraduate Grants and Scholarships	$13.8
Graduate Fellowships and Scholarships	$93.1
Student Loans	$1,112.0
Work-Study	$25.6
Patient Care	
Medicare	$2,000.0
Medicaid	$1,500.0
Estimated Total Federal Support	$9,083.6

Federal Funds

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

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 2015-16. 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 2015-16. Federal funds for UC research have grown dramatically over the last two decades, and UC benefited significantly from temporary federal economic stimulus funding provided to federal agencies that support academic

research. However, 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 increased modestly over the last year and is likely to remain flat or increase slightly over the next two 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 2015-16, indirect cost recovery funding from federal contract and grant activity was about $746.3 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. Recently negotiated rate increases for the Berkeley, Davis, Irvine, San Diego, San Francisco, Santa Barbara and Santa Cruz campuses have raised the rate by 4-5%. However, 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 $827 million in 2016-17.

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

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 $99.2 million in 2016-17.

The remaining 80% of the federal reimbursement is split into two funds. The first 55% (estimated to be $280.2.0 million in 2016-17) 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 $191.7 million in 2016-17). 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. A total of 23 facilities have been fully financed using this mechanism.

With the implementation of the Funding Streams Initiative in 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.

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 $3.5 billion in 2015-16.

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 $307.2 million in revenue for the University during 2016-17. 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 2016-17 includes $63.6 million in appropriations from State special funds. These include:

- $32.8 million from the California State Lottery Education Fund, which is used to support instructional activities;
- $12.9 million from the Cigarette and Tobacco Products Surtax Fund to fund the Tobacco-Related Disease Research Program;
- $5.5 million for the Breast Cancer Research Program, funded from both the Cigarette and Tobacco Products Surtax Fund and the Breast Cancer Research Fund, derived from the personal income tax check-off;
- $2 million from the Health Care Benefits Fund for analysis of health care-related legislation;
- $4 million from the Public Transportation Account for support of the Institute of Transportation Studies;
- $1 million from the Earthquake Risk Reduction Fund;
- $2.5 million from the Oil Spill Response Trust Fund;
- $425,000 for cancer research from the California Cancer Research Fund; and
- $2.5 million for the Umbilical Cord Blood Collection Program.

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 $14.4 billion as of June 2016. Final values for combined endowments for 2015-16 will not be presented to the Regents until February 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 2014-15.

Expenditures of endowment payouts are highly restricted but support a range of activities, including endowed faculty chairs, student financial aid, and research. Approximately 92% of UC's overall endowment is restricted, contrasted with 80% for most public institutions and 55%, on average, for private institutions.

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 2015-16, the expenditure of the payout distributed on endowments and similar funds was $298.3 million from the Regents' endowments and approximately $240 million from campus foundations. Payouts in 2016-17 are expected to be slightly higher than those in 2015-16.

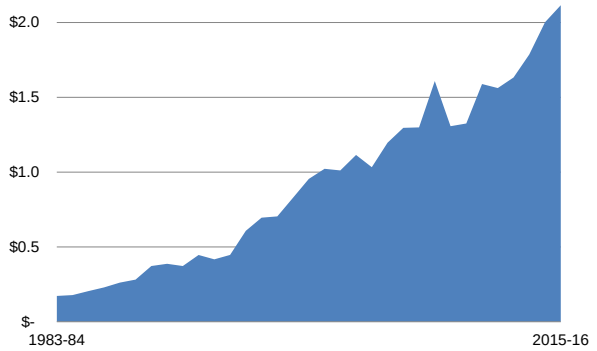
Private Support: Gifts and Grants

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 recent years, approximately 98% of new gifts received by UC are restricted in their use.

Since 1990, the University has experienced large, steady increases in private gifts received. In 2015-16, new gifts and private grants to the University totaled surpassed the

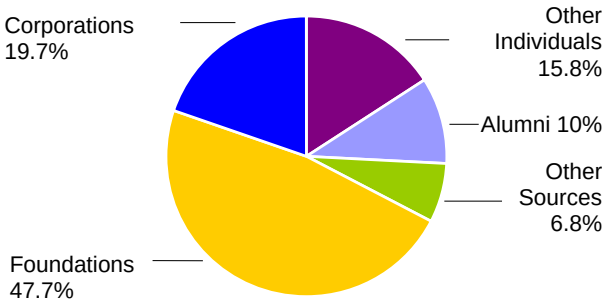
$2.1 billion mark in private support, approximately 6% higher than the record total achieved in the prior year. Approximately $393.1 million of this total was designated for endowments, thus helping to ensure a strong future for UC, but making these funds unavailable for current expenditure. Health science 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 colleges and universities, and the high regard in which its alumni, corporations, foundations, and other supporters hold the University. In 2016-17, expenditures of private gifts and grants to the University are expected to be slightly higher than the expenditures in 2015-16.

Display II-9: Private Gift and Grant Support (Dollars in Billions)



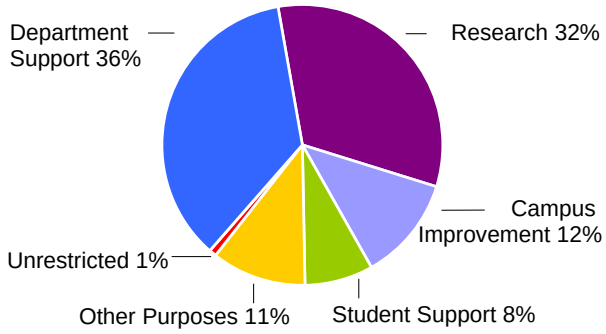
In 2014-15, gifts and pledge payments totaled $2.0 billion.

Display II-10: 2015-16 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-11: 2015-16 Private Gift and Grant Support by Purpose



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

Private Contracts

In 2015-16, revenue attributed from private contracts totaled $768 million, a 1.9% decrease over 2014-15. Over the last ten years, awards have increased by 50% 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. In 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 2016-17, 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. Further information about DOE Laboratory Management activity and revenue can be found in the *Department of Energy Laboratory Management* chapter of this document.

Contract and Grant Administration

Contract and Grant Administration funds, also referred to as "Off-the-Top" funds, currently represent 19.9% of the total indirect costs recovered under federal awards, net of indirect cost recovery associated with facilities developed using the Garamendi financing mechanism. Pursuant to agreement with the State, funds must be used for costs related to federal contract and grant administration, including federal governmental relations, cost and financial analysis, sponsored projects offices, costs resulting from federal cost disallowances, "and any additional costs directly related to federal contract and grant activity as mutually agreed to by the University and the State."[2]

University Opportunity Fund

The University Opportunity Fund, which consists of a share of federal indirect cost recovery funds, is used to fund programs and services that are not adequately supported from State funds. Beginning in 2012-13, with the implementation of the Funding Streams Initiative, as described later in this chapter, each campus retains all federal indirect cost recovery funding generated by research activity at the campus. This approach represents a reinvestment in research and an incentive to further develop UC's research capacity.

Generally, campuses have used Opportunity Funds to enhance faculty recruitment packages through laboratory alterations and support for graduate student researchers, to provide innovative instructional programs, and to augment funding for capital outlay, equipment purchases, and other institutional support.

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 under Other Funds. Income distributions after mandatory payments to joint holders and law firms (for legal expenses) were $150.2 million in 2014-15, the most recent year for which data are available. While 2,168 inventions generated royalty and fee income, the 25 most profitable inventions collectively accounted for more than 78.0% of total revenues.

[2] *Memorandum of Understanding between the University and the State Department of Finance for Disposition of Receipts from Overhead on Federal Government Contracts and Grants,* 1979.

- **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 2014-15, 2,161 inventors received $43.4 million.
- **General Fund Share:** In 2014-15, the portion of net income allocated to the UC General Fund was $26.0 million, equal to 25% 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 $8.3 million in 2014-15.
- **Income after Mandatory Distributions:** All income remaining after deductions and other distributions is allocated to the campuses. These funds, totaling $72.4 million in 2014-15, are used by the chancellors to support education and research priorities.

FUNDING STREAMS AND REBENCHING INITIATIVES

Historically, certain revenues were collected centrally by the UC Office of the President (UCOP) and redistributed across campuses to promote systemwide priorities. These included State General Funds; Tuition (formerly the Educational Fee); indirect cost recovery of federal, State, and private research contracts and grants; application fee revenue; and a share of patent revenue. The funds were used to the benefit of the campuses, such as to fund cost increases, enrollment growth, development of new schools or programs, and for central administration and systemwide initiatives. Other funds, such as hospital and auxiliary revenues, Student Services Fee revenue, and campus-based fee funds, have historically been retained by source campuses. Over time, the University's budget practices and authority have become more decentralized, and policies have changed so that more revenue has been retained by or returned to source campuses.

Following lengthy consultation with campus leadership, in 2011-12, the University made comprehensive changes in the way funds flow within the University and in the way central administration and programs are funded. In order to simplify University financial activity, improve transparency, and incentivize campuses to identify new revenue sources, beginning in 2011-12, all campus-generated funds – tuition and fees, research indirect cost recovery, and patent and investment income – is retained by or returned to the source campus. For support of central operations, the University has established a broad-based assessment on campus funds. Central operations are defined as UCOP administration, central services (both administrative and academic), and systemwide initiatives, such as multi-campus research programs and Cooperative Extension.

As an exception to the overarching principle that source campuses will retain all funds generated by the campus, redistribution of some funds across campuses will continue as a means to support the systemwide goals of the Education Financing Model (EFM) for undergraduate student financial aid. A key goal of the EFM is to equalize the expected student contribution from employment and/or loans across the system, such that each individual undergraduate student would face the same net costs regardless of which campus the student chooses to attend. The EFM is described in more detail in the *Student Financial Aid* chapter of this document.

The Funding Streams Initiative addressed the distribution of all revenues except State General Funds. With regard to the allocation of State General Funds, in November 2010, the UC Commission on the Future recommended that the University examine the rationale for distributing State General Funds and design a proposal for "an equitable and transparent readjustment of base funding formulas." The Commission's recommendation coincided with concerns raised by others within the University that the existing distribution model was too complex and opaque. These issues were addressed by the Rebenching Budget Committee. The Committee completed its deliberations in March 2012 and produced a set of recommendations for rebenching State General Funds. Among the Committee's recommendations were distributing State funds on the basis of weighted per-student enrollment and that rebenching be implemented over a six-year period. The 2016-17 fiscal year is the fifth year in which State General Funds are being allocated based on the principles of rebenching.

Cross-Cutting Issues

Several of the University's significant budget issues do not fall into a single functional area but instead cut across multiple areas. This chapter provides detailed information about several of these cross-cutting issues for 2016-17: the budget framework established between the University and the Governor, Presidential initiatives, University quality, administrative efficiencies, and diversity.

A BUDGET FRAMEWORK FOR SUCCESS

In May 2015, the University and the Governor established a budget framework that 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 an additional $170 million in each of the following two years. 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 seven and being on or ahead of schedule for the remaining six. 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 **pathways for ten top majors in spring 2015 and another 11 top 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 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 **increase 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 2015-16, the systemwide ratio, excluding UC Merced, was 2.22 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 2.15 freshmen to transfers for UC Berkeley to 3.35 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 2016-17 enrollment reports, California resident transfers increased by approximately 2,300 transfers systemwide over the prior year (to a record high of nearly 17,000 transfers). In addition, UC Berkeley is very close to becoming the fourth campus to achieve the 2:1 goal, and UC Irvine and UC Santa Barbara made significant progress in improving their ratios.

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 major preparation 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. There are close to 650 majors that department faculty must review. Starting in the Fall 2015 term, faculty have been reviewing their majors in order to ensure that the program effectively prepares graduates well for work or graduate study and that it does so efficiently. Some of the recommended changes have been reviewed and approved by the campus Academic Senates. Since a benchmark of the equivalent of one year of upper-division coursework is not possible for engineering and computer science majors because of accreditation requirements, a benchmark of 1-1/2 years was established for these majors, following consultation with the campuses.

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 the summer of 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. Seven campuses completed 11 to 15 pathways, and some

campuses are establishing three-year degree pathways for additional majors beyond their top 15. All three-year degree pathways are listed and described on campus websites. The campuses are committed to promoting these pathways for students where appropriate. The Office of the President and campuses have shared best practices and are tracking efforts to promote the pathways to freshman entrants.

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 promoted summer session and the particular pricing model they offered. Enrollment data are being gathered as they become available, and an evaluation plan has been developed.

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 bottleneck 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 pilot is underway at the Riverside campus, and two more campuses, Davis and Merced, have worked closely together on scoping studies for possible additional pilots. Riverside has provided substantial information and guidance to the other two campuses. Riverside gathered data on teaching practices from a sample of faculty from three departments in their College of Humanities, Arts & Social Sciences: Hispanic Studies, Psychology, and Theatre and has engaged an outside consultant to help develop a costing model.

Davis and Merced each selected three departments from among their most popular disciplines. In parallel with this process, both campuses conducted data assessment to determine the type and quality of data available and the ability to link data across systems. In addition, they estimated the costs of conducting an ABC pilot with three departments. Costs include consultants of the type used by Riverside, newly hired staff for the project, time devoted to the project by current staff, and opportunity costs of such uses of existing staff and of new expenditures. Riverside expects to complete its pilot in 2016. Davis and Merced have completed scoping studies on the costs and workload associated with carrying out an ABC pilot on their campus.

Adaptive learning is another element within the framework's academic initiatives. Pilot "adaptive learning technology" studies 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.

- UC Davis's pilot included use of ALEKS by Summer Bridge 2015 as preparation for and placement in Chemistry 2A and will analyze summer results and Fall Quarter 2015 and Winter Quarter 2016 course performance.
- UC Santa Barbara's pilot included using summer preparation in ALEKS to assess if this preparation has an impact on performance in entry-level chemistry. Santa Barbara will also evaluate ALEKS as a homework system and its impact on student performance and ability to develop requisite knowledge to succeed. Summer and Fall Quarter 2015 and Winter Quarter 2016 performance data will be analyzed.
- UC Santa Cruz's pilot included summer 2015 use of ALEKS as preparation for and placement of students into higher level mathematics courses to lessen the need for entry level courses (such as Math 3 – Pre-Algebra). Santa Cruz will analyze summer results and Fall Quarter 2015 and Winter Quarter 2016 course performance.

For all three pilots, the goal is 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. UC Berkeley's Haas School of Business Dean, Richard Lyons, 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 resources 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:

- **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.
- **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.
- **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.
- **Transfer Action Team (TAT).** The goal of this task force is to streamline the preparation, admission, and enrollment of students from California Community Colleges to UC by improving transfer students' awareness of UC as an attainable option, clarifying systemwide transfer major preparation requirements, and supporting transfer students through their transition to UC.
- **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).
- **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 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. 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.
- **Research 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. This year, the initiative received a $22 million grant from the State 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 the total cost of student attendance. The President's initiative strives to increase the inventory of available housing for students while ensuring that housing options remain as affordable as possible.
- **Cyber Security.** 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 five-point plan includes updated governance, enhanced risk management, adoption of modern technology, hardening UC's security environment, and instituting systemwide cultural change.
- **UC Path.** In response to an aging data infrastructure for its payroll and personnel systems, the University embarked on an initiative in 2011 to replace these systems with a shared services center in Riverside and a centralized, standardized payroll system to serve all UC locations. As the first University location to "go live," the Office of the President was converted to the new system late in 2015. Other campuses are due to go live later in 2017 and 2018.

Many of these initiatives are discussed in greater detail elsewhere in this document within the appropriate chapter.

QUALITY AT THE UNIVERSITY OF CALIFORNIA

What defines quality at a major research university? Although there are no agreed-upon standards in the higher education community for determining quality, there are clear metrics that are commonly used when rating great universities. They 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 2017-18 budget plan includes a third 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 2015, UC employed about 10,500 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 2015-16, 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 $2.3 billion.

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. Over the last seven years, despite considerable enrollment increases, the size and composition of the ladder rank faculty has remained relatively constant. 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 yielded limited progress.

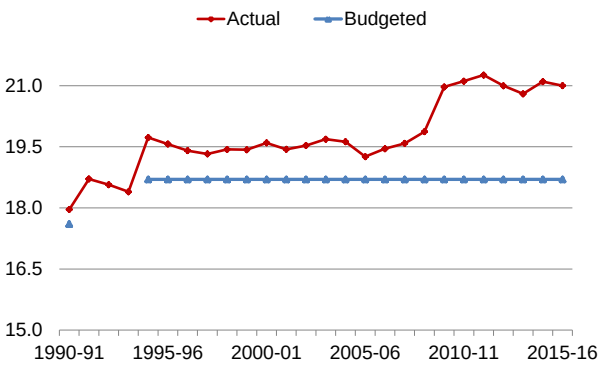
Since 1994, the University's *budgeted* student-faculty ratio has been 18.7:1. However, the *actual* student-faculty ratio has deteriorated dramatically since the budget cuts of the early 1990s (as shown in Display III-1), currently standing at just over 21:1 on average systemwide and ranging from 18.1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

- offer smaller class sizes where appropriate,
- improve 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 2017-18 plan, is to improve the student-faculty ratio over the next several years.

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 budgets cuts of the early 1990s so there is no student-faculty ratio data available during those 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. In fact, as mentioned earlier in this chapter, the University agreed to strengthened 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

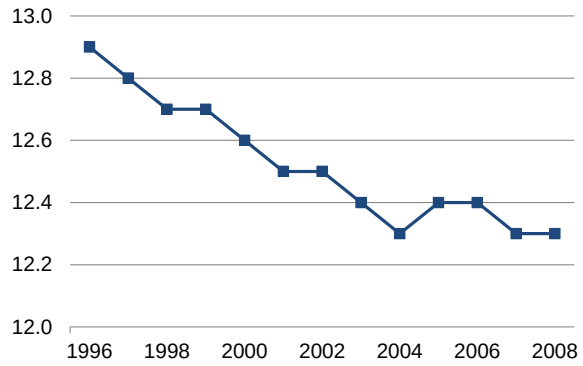
managing the curriculum and its delivery (for example, through targeted and broader summer offerings), and expanding the use of instructional technology.

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 2008 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, undertake 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, but reduce excess units taken over a student's career, enabling more students to graduate in four years, thereby making room for others.

Freshman and transfer persistence and graduation rates have steadily risen over time. Among recent freshman cohorts, 93% of students persist into the second year and over 60% graduate within four years (graduation rate data is shown in Display III-3). Despite severe fiscal challenges, UC's four-year graduation rate steadily improved and is 64% 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 2009 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.

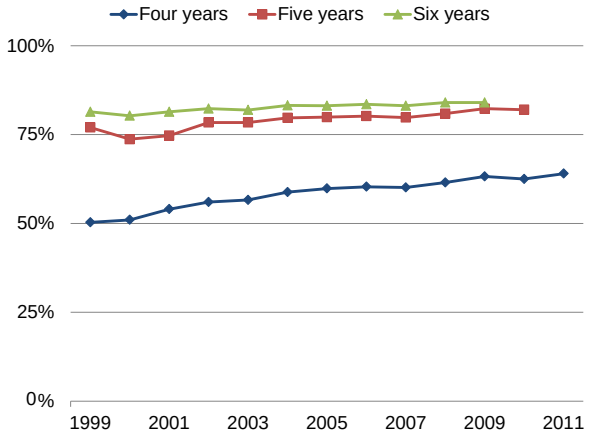
Students beginning their higher education at a community college have historically done very well after transferring to UC. Among California Community College (CCC) transfer students, 93% persist to a second year and 88% earn a UC degree within four years, taking on average seven quarters to complete their degrees (graduation rate data for CCC transfers is 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.

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



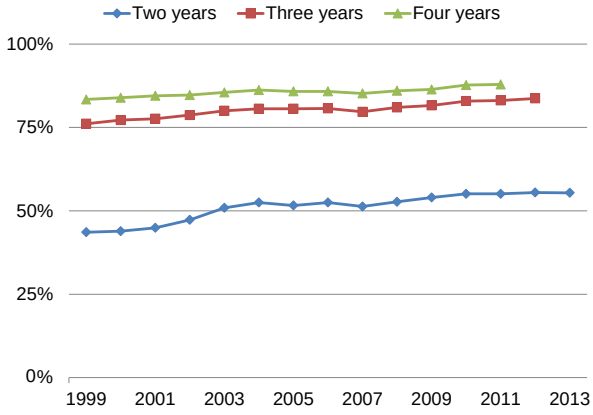
Time to degree, measured in quarters enrolled, has declined over time to 12.3 for the most recent cohort.

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.

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 has increased from 0.4 in 2005-06 to 0.5 in 2011-12, a higher number than UC's public and private AAU comparison institutions.

Student Satisfaction

Undergraduates continue to be satisfied with their academic experience, as indicated by their responses to UC's Undergraduate Experience Survey, or UCUES. In 2016, 80% of survey participants report 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
- 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 2017-18 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 the 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. As required by budget trailer language (AB 94), UC reported:

- Both the number and percentage of 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;
- 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/15-16/PerformanceOutcomeMeasuresLegRpt-3-17-16.pdf.

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 pursued a range of innovative approaches to improve efficiency, save money, and generate alternative revenue, and will continue to do so.

Current efforts build on the success of the *Working Smarter Initiative,* a five-year program designed to advocate for and accelerate projects that delivered a single common administrative framework or capability to all locations. This work continues in a broader context, and is more integrated in the day to day operations of the University. In other words, efficiency, process simplification, and streamlining extend well beyond the portfolio of projects referenced below. Still, many of these projects, and more, move UC closer to the vision of a common, efficient and integrated administrative framework.

As part of a call to action in response to the fiscal crisis created by the recent Great Recession, in July 2010, the Regents adopted a resolution regarding systemwide administrative efficiencies[1]. The resolution directed the President, in consultation with a small committee of campus representatives, to, where appropriate, design and implement common best-practice administrative systems, including but not limited to student information systems, financial systems, human resources systems, payroll systems, and their underlying technology support systems. This resolution was further bolstered by the recommendation of the University's Commission on the Future in 2010 to accelerate progress towards administrative efficiencies[2].

The initiative evolved into *Working Smarter*, which identified a specific portfolio of largely administrative projects to actively track through the five-year life span of the initiative

In 2010, the Regents set an aspirational goal for the *Working Smarter* program: to free up $500 million over five years from administration that could be used instead for the academic and research mission of the University through a combination of direct cost savings and new revenue. By the end of the fourth year, the initiative had exceeded its fiscal goal: 13 *Working Smarter* projects together reported incremental savings or new revenue totaling $664 million. Display III-5 shows the fiscal impact for those projects reporting savings or the creation of new revenue.

Typically, *Working Smarter* savings or revenue accrued to core and non-core (such as auxiliaries and other self-supporting functions within the University) operations; in general, about two-thirds of the savings and/or new revenue accrues to core-funded programs, freeing up funds that were previously used for other purposes, avoiding costs, or generating revenue.

The projects within the *Working Smarter* program portfolio did not halt when the initiative reached its five-year span or when the original fiscal objective was achieved. The projects, and others much like them, are underway across the UC system and within each individual campus. Each project may differ in its complexity, implementation timeline, and/or expected fiscal impact, but the goals of these efforts are in line with the original Regents resolution – to accelerate the University's progress toward administrative efficiency. Going forward, this work is becoming more integrated across UC's operations and activities at all levels of work and is not limited to a discrete portfolio of projects. Savings from these efforts have helped campuses address the major funding shortfalls that have occurred because of the Great Recession and other fiscal constraints in recent years.

[1] See regents.universityofcalifornia.edu/regmeet/jul10/f2.pdf

[2] Commission on the Future Final Report, November 2010, Recommendation #14, "Expedite Implementation of UC's Initiative on Systemwide Administrative Reforms, with the Goal of $500 Million in Annual Savings," page 20.

Below is a brief summary of the projects that reported registered net savings or new revenue through the five-year *Working Smarter* program.

Banking and Treasury Services is an office within the Office of the President that has set a goal of reducing the cost of banking services while maintaining world-class control and functionality. In 2011, Banking and Treasury Services implemented a cloud computing solution that provides the required functionality, security, and control of a contemporary workstation.

Although some internal business processes had to be adjusted for the new system, it allows staff to perform critical processes for the daily management of UC cash. The new system also enhanced disaster recovery backup for this mission-critical function.

The cost differential between the original and the new treasury workstation resulted in savings to UC of approximately $960,000 per year.

The group also looked at its approximately 1,100 merchant credit card accounts across all campuses and medical centers. The accounts allow entities such as bookstores, athletic venues, and medical clinics to accept credit cards for payment of goods and services. In January 2011, Banking and Treasury Services successfully renegotiated the interchange fee paid by UC merchants from $0.12 per transaction to $0.045 per transaction. Spread across the 9 million transactions processed each year, the pricing reduction results in annual savings of $675,000, which are realized by the merchants directly in the form of lower credit card processing fees.

Note that the *Working Smarter* initiative measured only incremental year-over-year savings; as a result, these renegotiated price savings were recorded as incremental savings in the first year only. The cumulative impact of this initiative is $1.6 million over the five-years of the program.

Benefits Redesign/HR-Compliance: Family Member Eligibility Verification is a project which, in calendar year 2012, validated every single individual claimed as a dependent and covered by UC's health benefits. By ensuring only eligible dependents are covered, the University realized a $35 million annual reduction in employer contribution costs beginning in the plan (calendar) year 2013. As part of the project, a more stringent set of verification measures was put in place and a systemwide Family Member Eligibility Verification process will be conducted every four years. The next full-scale verification of family member eligibility began in 2016. As stated above, as Working Smarter measured only incremental year-over-year savings, these were recorded in the first year of its implementation only.

Display III-5: *Working Smarter* Projects Reporting Positive Fiscal Impact Cumulatively Across the Five-year Program Lifespan: Cost Savings and New Revenue (Dollars in Millions)

Project	Type of Fiscal Impact	Cumulative Impact
Banking and Treasury Service Efficiencies	Savings	$1.64
Benefits Redesign (Family Member Eligibility Verification)	Savings	$35.00
Campus Connexions	Savings	$4.24
Connexxus Travel Program	Savings	$23.55
Enterprise Risk Management	Savings	$183.29
Legal Services	Savings	$4.57
Liquidity Management	Revenue	$130.43
Parent Giving	Revenue	$44.46
Procurement Transformation	Revenue	$40.98
Procurement Transformation	Savings	$124.96
Purchase Card Program	Revenue	$21.91
Statewide Energy Partnership	Savings	$43.53
UC Equipment Maintenance Insurance Program	Savings	$2.67
UC Travel Insurance Program	Savings	$2.55
Total		$663.79

Campus Connexions is an internal brand for a web portal from which small businesses, student groups and other organizations that may use University property or conduct activities on campus can purchase appropriate insurance at a reduced rate. Typically student organization events and activities held on-campus are not covered by the University

of California's insurance programs. Prior to the introduction of this program, students in particular had to rely on personal or family financial resources to defend a claim or lawsuit arising from their activities and often the University had no financial recourse when its property was damaged by student activities or when it received a claim or lawsuit arising from student and/or any other supporting organization's activities.

Although the Campus Connexions program is focused on providing better protection and maintaining a centralized source for data, it also provides cost savings. Savings compares the cost that individual campus departments expended for *ad-hoc* insurance purchases and coverage of damage that occurred during events that were being held without insurance. By purchasing this insurance on a systemwide basis, UC, UC affiliates, and third parties all continue to achieve savings through volume purchasing, and UC reduces its overall risk. The cumulative impact of this initiative is $4.2 million over the five-years of the program. (Note that reported savings did not include savings to third parties).

More on this project at:

http://workingsmarter.universityofcalifornia.edu/projects/campus-connexions/overview/

Connexxus Travel is a centrally managed travel program offering online and agent-based reservation options and discounts to UC and CSU travelers. Across all UC locations, average utilization is below 50% for all types of UC travel, but is growing. To increase utilization, the project team recently redesigned the web portal to strengthen the user experience. Over $6 million of the savings from the program were attributable to negotiated airline discounts. The cumulative impact of this initiative is $24 million over the five-years of the program.

More on this project at:
http://workingsmarter.universityofcalifornia.edu/projects/connexxus-travel-program/case-study/

Enterprise Risk Management (ERM) takes a strategic approach to managing enterprise-wide risks. These include hazard risks such as workers' compensation, a variety of liability risks, and property. It does the same with other strategic, operational, financial, and reputational risks. UC campuses continue to enhance their ERM programs through a collaborative effort. UCOP Risk Services supports campuses with investment in new systems and tools to facilitate the efficient management of risk.

UC's cost of risk is made up of a variety of components, the largest of which is self-insured claims. The cost of individual claims accounts for about two-thirds of the annual total. The remaining third of the cost of risk goes toward expenses for claims administration, loss control, and loss prevention programs, as well as excess insurance premiums to cover the costs of individual claims above UC's retention level. UC has been successful in managing its risk by investing in claims administration, loss control, and loss prevention programs. The "Be Smart About Safety" program in particular has positively impacted the loss experience, resulting in a reduction of the actuarial estimates of ultimate losses, which in turn has led to a reduction in the total cost of risk. A similar program, "Shoes for Crews," is also being credited by Risk Services with reductions in workers compensation injuries and the cost of incurred claims. The cumulative impact of this initiative is $183 million over the five-years of the program.

More on this program at:
http://workingsmarter.universityofcalifornia.edu/projects/enterprise-risk-management/overview/

Legal Services spending at the UC Office of the President on outside counsel represents four times the operating budget of the Office of General Counsel (OGC). Although these costs cannot be eliminated – for reasons of both workload and specialized expertise – OGC has had significant success in reducing them.

OGC engaged in a multi-pronged cost reduction program, consisting of two primary elements: preferred provider panels and insourcing. In order to keep outside counsel costs low, certain cases were referred to panels of "preferred provider" firms, with negotiated (and relatively low) billing rates based partly on volume.

OGC also identified areas where additional in-house counsel could be most effective in reducing net costs, focusing on high-volume categories with traditionally high outside counsel costs. Insourcing these services greatly reduced cost at comparable quality. The cumulative impact

of this initiative is $4.5 million over the five-years of the program.

More on this project at:
http://workingsmarter.universityofcalifornia.edu/projects/new-model-for-legal-services/overview/

Liquidity Management is optimizing the allocation of campus working capital between UC's Short Term Investment Pool and its Total Return Investment Pool, as well as exploring the possibility of a systemwide, coordinated approach to liquidity management. By reviewing historical trends and likely future needs for operating capital, and then making moderate adjustments, the University has generated significant additional investment income in each year since the inception of this new approach. The cumulative impact of this initiative is $130 million over the five-years of the program.

More on this project at:
http://workingsmarter.universityofcalifornia.edu/projects/liquidity-management/case-study/

Parent Giving places increased emphasis on donations from parents of UC students. Several years ago, UC determined that parent giving at UC was falling short compared with other universities. The University implemented the Parent Giving and Supplemental Development Fund to boost parent and alumni donations and support other giving models. These funds from the Office of the President were matched on a two-to-one basis by the campuses. Due to significant budget cuts and expected maturity of the programs reducing reliance on that support, the funding was recently decreased.

In the first year of the program, systemwide parent giving rose to $10.7 million from $3.6 million the previous year. Parent Giving topped $17 million in 2013. The cumulative impact of this initiative is $44 million over the five-years of the program.

More on this project at:
http://workingsmarter.universityofcalifornia.edu/projects/parent-giving/case-study/

P200: Strategic Procurement is a Universitywide program by Procurement Services staff at UCOP who negotiate vendor contracts to leverage UC's substantial combined buying power. The program aimed to ultimately deliver $200 million in benefit annually in support of the University's core missions of teaching, research, and public service. 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. The cumulative impact of this initiative in terms of new revenue is $41 million and in terms of savings is $125 million over the five-years of the program.

More on this project at:
http://workingsmarter.universityofcalifornia.edu/projects/e-sourcing/p200-program-overview/

Purchase Card Program advocates for the use of this more efficient payment vehicle for settling the University's invoices. Although there is a process efficiency derived from using a procurement card compared to processing a payment by check, this effort savings is not monetized in the *Working Smarter* reported results. The cumulative impact of this initiative is $22 million over the five-years of the program.

More on this project at:
http://workingsmarter.universityofcalifornia.edu/projects/purchase-card-program/case-study/

The Statewide Energy Partnership is a portfolio of many hundreds of energy efficiency projects at campuses and medical centers. The University of California/California State University (UC/CSU) and Investor-Owned Utilities (IOUs) entered into an Energy Efficiency Partnership with a goal of achieving immediate, long-term peak energy and demand savings, establishing a permanent framework for a sustainable, long-term, comprehensive energy management program. The cumulative impact of this initiative is $44 million over the five-years of the program.

More on this project at:
http://workingsmarter.universityofcalifornia.edu/projects/statewide-energy-partnership/case-study/

UC Equipment Maintenance Insurance Program (UCEMIP) is focused on a standardized, proactive approach to the maintenance of the University's equipment and technology hardware. The program aims to replace emergency repair and certain original equipment manufacturer maintenance contracts with a central equipment maintenance insurance policy priced to cover a wide range of equipment at any UC location. The cumulative impact of this initiative is $2.7 million over the five-years of the program.

More on this project at:
http://workingsmarter.universityofcalifornia.edu/projects/equipment-maintenance/case-study/

UC Travel Insurance Program (UCTRIPS) was created because UC's mission takes faculty, staff, and students all over the world, introducing a variety of travel risks subject to constant change. The University historically purchased Travel Accident insurance that included the primary benefit of Accidental Death and Dismemberment coverage and some accident/sickness medical expense coverage. In later years, it was expanded to include limited emergency evacuation and repatriation. Although the University had coverage, it provided only minimum benefits. To better meet the needs of our traveling students, faculty, and employees, Risk Services at the Office of the President developed a system to capture travel information that would enable the University to procure better coverage. UC TRIPS now offers expanded travel assistance resources, including medical evacuation and security extraction, which can deploy emergency response services throughout the world at a moment's notice. A key feature of UC TRIPS is the ability to provide real-time alerts to travelers on conditions impacting their travel (e.g., security, weather, natural disasters, airport closures, civil unrest, etc.) and maintain communication with them. Savings in UC TRIPS has been realized as campus departments and programs move from their prior coverage for individual trips to the UC TRIPS model. On average, UC saves approximately 35-40% and receives significantly broader coverage. The cumulative impact of this initiative is $2.56 million over the five-years of the program.

More on this project at:
http://workingsmarter.universityofcalifornia.edu/projects/travel-insurance/overview/

In evaluating projects as candidates for inclusion in the portfolio, an assessment was made of expected fiscal impact or process efficiency. Fiscal impact was reportable within the portfolio only after savings or revenue eclipsed any investment (such as in implementation costs associated with new technologies). Across all projects, only direct cost savings and realized revenue are measured and reported as positive fiscal impact under *Working Smarter*. In addition, some projects incur permanent savings, usually resulting from substantial and transformative changes; others are more opportunistic. The latter, usually one-time events, are measured and accrue to the University's fiscal goals, but the far greater focus of the initiative is on permanent savings or revenue and those projects that reinforce a focus on process efficiency.

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."[3] The value of diversity in all aspects of UC's educational programs is fundamental to its mission as a land grant institution. The unique environment created by UC's system of 10 top-tier public research universities contributes to the overall quality of a UC education. 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

[3] www.universityofcalifornia.edu/diversity/documents/diversityreport0907.pdf.

students, faculty, and staff. 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.

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 among students, and lower, but still majority, comfort rates 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 some 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 racial minorities than non-minorities 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 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." Both the University and the state are much more diverse than the nation as a whole. However, while the University community has become increasingly diverse, 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 turn over. 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 been very successful in expanding access to all Californians. Since the 1990s, UC has enrolled greater numbers of students from underrepresented groups (i.e.,), as discussed in the *General Campus Instruction* chapter of this document. At UC, underrepresented groups include African American, American Indian, and Chicano(a)/Latino(a) students. In Fall 1990, underrepresented minorities comprised 17.2% of all undergraduates. In Fall 2015, students from underrepresented groups comprised 26.8% of all undergraduate students. Among new freshmen, students from underrepresented racial/ethnic groups have increased from 16.0% in Fall 2000 to 28.1% in Fall 2015. This increase reflects, in part, the dramatic increases in diversity of California's high school graduating class. Additionally, transfer students from underrepresented groups have increased from 16.6% in Fall 2000 to 25.8% in Fall 2015. In Fall 2016, UC enrolled its largest and most diverse class ever. More than 37 percent of freshmen and 34 percent of transfers come 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 37.93% 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 2015, ranging from 17.8% for social science disciplines to 6.9% for engineering, computer science, and the physical sciences. In nearly every discipline, UC enrolls 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 2015, from 53.2% for social science disciplines to 27.5% for engineering, computer science, and the physical sciences. Figures for UC 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 2015, from 34.8% in education to 7.0% in business. In nearly every discipline, UC enrolls a higher percentage of students from underrepresented racial/ethnic groups than the average among other AAU public or private institutions.

In Fall 2015, the percentage of students in UC professional degree programs who are women ranged from 74.8% in education to 33.4% in business. Figures for UC 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 both the percentage of women faculty (31.4%) as well as the percentage of faculty from underrepresented minority backgrounds (9.0%). (These figures are from Fall 2014, the most recent year available for comparison institution data except for Stanford, which last reported in 2013. UC data includes Hastings College of the Law.)

In Fall 2015, 5.7% of ladder- or equivalent-rank UC faculty were Chicano(a)/Latino(a), 0.4% were Native American, 2.6% were Black/African/African American, and 16.3% were Asian or Asian American (figures include both domestic and international faculty).

Despite gains over time, ladder- and equivalent-rank faculty are still over 74% white and over 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.

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 and its top two leaders, the President and the Provost, are women. Despite some progress over the years, in 2015, the Senior Management Group (consisting of 170 employees) was 70.2% white and 58.5% male. In contrast, among the University's 95,000 Professional and Support Staff, 40.8% were white and 65.9% were women.

In Fall 2015, 29.2% of the University's nearly 106,000 non-academic staff were underrepresented minorities and 54% 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 2015, followed by Chicano(a)/Latino(a) staff (14% in Fall 1996 compared to 21% in Fall 2015).

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 more than 100,000 K-12 and community college students. Of the high schools served by UC's systemwide programs, 70 percent are among the lowest-performing schools in the state. Program participants have higher rates of enrollment in the California public college segments and participants who are accepted to UC enroll at higher rates than their peers. In addition, the University has launched the President's Diversity Pipeline Initiative, which is described earlier in this chapter.

Graduate Academic and Graduate Professional Students. The UC-HBCU Initiative, 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 230 HBCU scholars have participated in the program, which offers faculty-led summer research opportunities and year-round mentoring. More than a third of UC-HBCU scholars have applied to UC for graduate education, and 20 Ph.D. and four 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. In 2015-16, there were 355 PRIME students enrolled across six programs, of which approximately 65% were from underrepresented groups.

Ladder Rank Faculty. Since its inception in 1984, more than 180 former President's Postdoctoral Fellowship Program (PPFP) Fellows have received UC tenure-track appointments, nearly one-third of Fellows during the last 13 years. Of those Fellows appointed to the UC faculty since 1995, 99 percent of those reviewed for tenure have received tenure. In 2014, President Napolitano committed $5 million in one-time funds to support PPFP goals. Funds were distributed in three areas: 1) hiring incentive start-up packages; 2) salaries for additional faculty hires; and 3) resources for training, mentoring, and development. With the number of applicants and fellows rising in the past three years, the additional funds from President Napolitano's initiative will support even more departments that recruit PPFP fellows into faculty positions at UC.

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 219 graduates. Approximately 90 percent 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

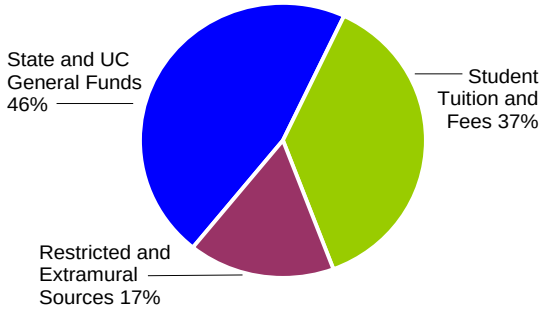
General Campus Instruction

UC 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 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, and 59% of senior undergraduates had participated in research activities with faculty or participated in creative projects 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.

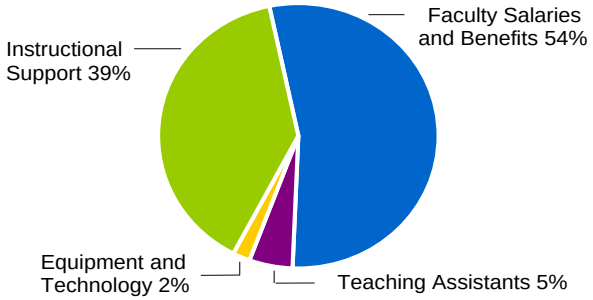
The University offers bachelor's, master's, and doctoral degrees in over 780 instructional programs from agriculture to zoology and professional degrees in a growing number of disciplines. The University's Academic Senate authorizes and supervises courses offered within instructional programs, and also determines the conditions for admission and the qualifications for degrees and credentials. UC began awarding degrees in 1870 and conferred 68,800 degrees in 2015-16.

Display IV-1: 2015-16 General Campus Instruction Expenditures by Fund Source (Total: $3.1 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: 2015-16 General Campus Instruction Expenditures by Category (Total: $3.1 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 $3.1 billion in 2015-16, 83% of which comes from core fund sources (State General Funds, UC General Funds, and student tuition and fees). Additional resources for instruction are derived from self-supporting program charges, course

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

materials and services fees, 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 applicants in the top 12.5% of the State's high school graduating class who choose to attend. The University establishes criteria designed to identify the top 12.5% of the high school class and guarantees admission to all applicants who meet the requirements and apply on time, 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 meet these commitments, the Master Plan calls for the State to provide adequate resources to accommodate this enrollment. The University is anticipating growth from current enrollment levels of at least 1% annually for the next five years. A key component of this growth is the continuing expansion of the Merced campus. Both the overall need for enrollment growth funding and the need to continue expansion of the Merced campus are discussed later in this chapter.

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 more than 50 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. However, this became a major challenge for the State during the recent Great Recession when no funding for enrollment growth was provided. Beginning in 2015-16, the State once again began to include enrollment funding in the University's budget, although in both 2015-16 and 2016-17 only partially funded its share. UC has redirected funds from other programs to make up the difference.

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. Indeed, the 2017-18 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" will 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-5 through IV-10.

2017-18 Budget Request

The 2016-17 Budget Act included a provision that would appropriate $18.5 million to the University in 2016-17 for enrollment growth that will occur in 2017-18 on the condition that it demonstrates to the Department of Finance by May 2017 that it has taken sufficient steps to enroll 2,500 additional California undergraduate residents by 2017-18 relative to enrollment in 2016-17. Receiving this enrollment growth funding is also contingent upon the UC Board of Regents adopting a policy regarding nonresident undergraduate enrollment. The University shares the Legislature's commitment to access for California resident students and plans to meet the 2017-18 goals set in the Budget Act. This funding will be reflected in the 2017-18 budget plan.

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.

The University received $25 million from the State in 2015-16 after demonstrating to the Director of Finance that it would enroll an additional 5,000 California resident undergraduate students by 2016-17 compared to enrollment in 2014-15. As of December 2016, the campuses collectively surpassed this target by enrolling over 6,400 additional California resident undergraduate students relative to 2014-15. This overenrollment was due, in part, to the terms under which State funding was provided, as receiving the $25 million appropriation for enrollment growth was entirely contingent upon the University enrolling, at a minimum, an additional 5,000 California resident undergraduate students. The funding

proposed in the Budget Act was half of the funding needed to support the State's share of the cost for 5,000 students. The University funded the other half of the 5,000-student increase by redirecting funds currently being used for need-based financial aid for undergraduate nonresident students. Display IV-3 illustrates the extent to which this enrollment growth of California resident freshmen and CCC transfer entrants in 2016-17 marks a departure from past trends.

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.

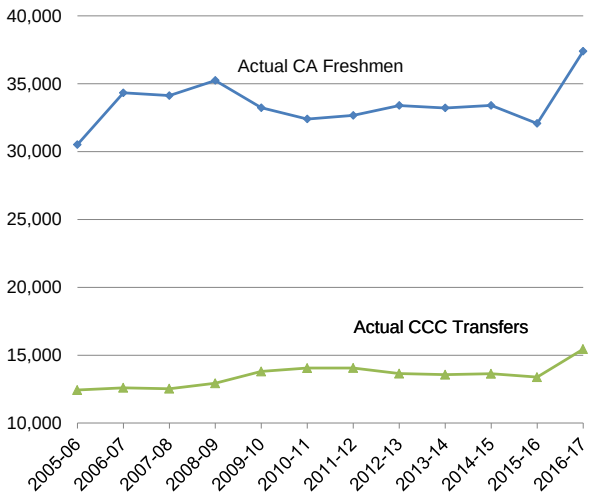
The University intends to sustain this expanded access in the coming years by enrolling 2,500 new California resident undergraduate students in 2017-18 and again in 2018-19 such that, at the end of four years, total California resident undergraduate enrollment will have increased by at least 10,000 students, providing access to thousands more students each year than otherwise would have occurred.

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 more graduate students by 2016-17. Although the State did not fund this request in 2016-17, it remains a high priority for the University, as graduate student enrollment must increase to keep pace with undergraduate enrollment growth. In an effort to acknowledge the significant growth in undergraduate student enrollment in 2016-17, and in anticipation of further growth in 2017-18, the 2017-18 budget plan requests $9 million to support graduate student enrollment.

History of State Support for Enrollment Growth

Historically, the State provided funding for each additional FTE student added to the University's current budgeted

Display IV-3: California Resident Freshman and California Community College Transfer Entrants



After years of relatively flat enrollment growth among new California resident freshmen and CCC transfers, the University has once again begun to increase enrollments of these populations of students.

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 additional students 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.

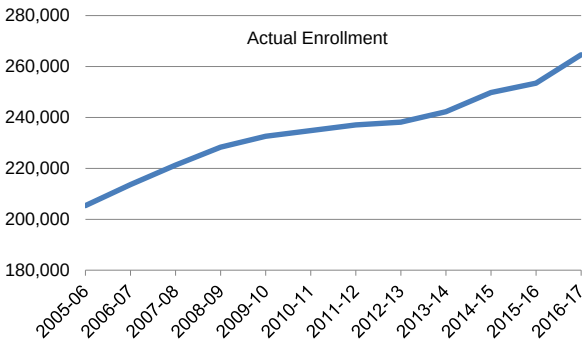
Funding for enrollment growth at the marginal cost of instruction was included in the 2005-06, 2006-07, and

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 nonresident enrollment, the University's total enrollment has continued to grow since 2008-09 (see Display IV-4).

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 for accommodation at UC 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 last four years) and the increase for transfers was somewhat more than planned (an average annual increase of 1,200 over the four-year period).

Display IV-4: 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 four years between 2008-09 and 2012-13, the State was unable to provide funding for enrollment growth.

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.

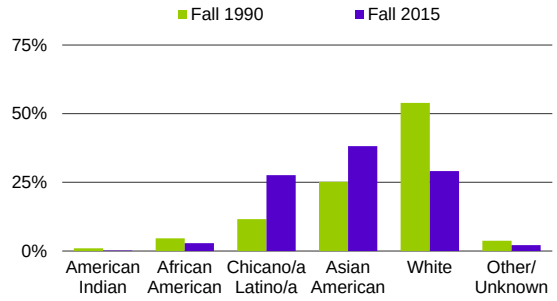
For faculty, the impact is similar. As funding remains constrained, fewer competitive offers can be made to new faculty. Existing faculty must manage the needs of ever-larger classes, with less assistance from additional faculty and graduate students and less time for research or public service. Working 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.

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).

Display IV-5: Characteristics of Fall 2015 Undergraduate Students

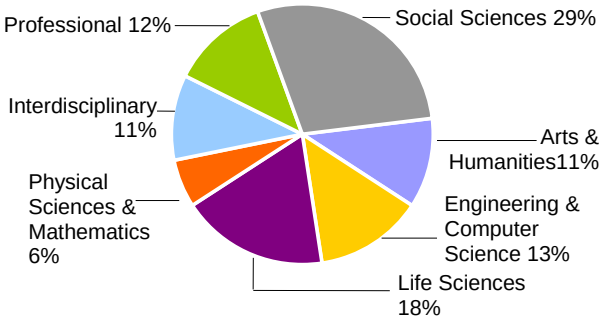
Headcount enrollment	198,666
Female	53%
Underrepresented minority	27%
First-generation college students	42%
Full-time students	97%
California residents	84.5%
Domestic nonresidents	5.5%
International students	10%
Upper division	61%
Lower division	39%

Display IV-6: Distribution of Domestic Undergraduate Students by Race/Ethnicity



Since Fall 1990, the proportion among UC undergraduates of Chicano/a and Latino/a students has risen more than 200% and the proportion of Asian American students has risen more than 150%.

Display IV-7: 2015-16 Bachelor's Degrees Conferred by Broad Discipline (Total: 50,700 Undergraduate Degrees)

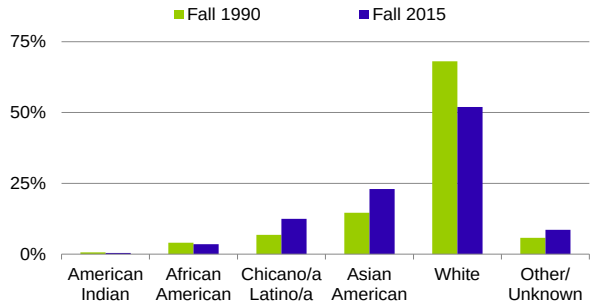


In 2015-16, UC undergraduates earned 50,700 bachelor's degrees. Over one-third were earned in sciences, technology, engineering, and mathematics. Social Sciences remains the most popular discipline among UC undergraduates.

Display IV-8: Characteristics of Fall 2015 Graduate Students

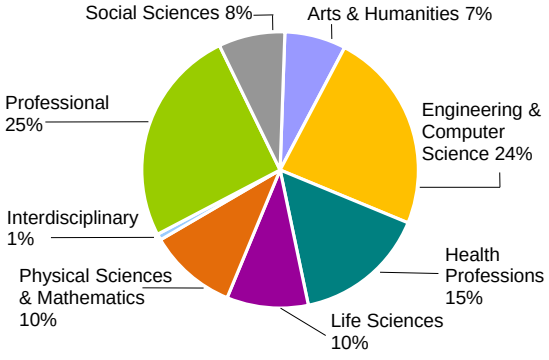
Headcount enrollment	58,311
Female	47%
Underrepresented minority	14%
Doctoral students	44%
Academic master's students	11%
Professional students	34%
Medical residents	10%
California residents	56%
Domestic nonresidents	12%
International students	21%

Display IV-9: Distribution of Domestic Graduate Students by Race/Ethnicity



Since Fall 1990, the proportions of Chicano/a, Latino/a, and Asian American students among UC graduates has risen more than 150% each.

Display IV-10: 2015-16 Graduate Degrees Conferred By Broad Discipline (Total: 14,953 Graduate Degrees)



In 2015-16, UC awarded nearly 15,000 master's (8,620), doctoral (3,675), and professional degrees (2,658). Over half were in sciences, mathematics, engineering, and health professions. Another quarter were degrees in other professional disciplines.

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.

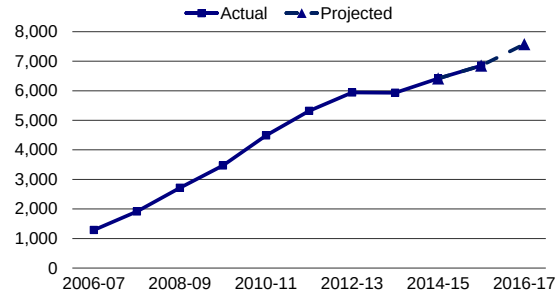
As the first new UC campus since 1965, the Merced campus has a rare opportunity to become an extraordinary institution as it builds on a heritage of distinction and legacy of excellence. Faculty, staff, and administrators have been drawn to Merced by the challenge of building and sustaining a unique 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 ten years ago (see Display IV-11). Around 20,000 students (freshmen and transfers) applied for admission for Fall 2015, an increase of 1.5% over Fall 2014. The increase was much more dramatic for the Fall 2016 admissions process – over 22,600 applied, a 13.5% increase over applicants for Fall 2015.

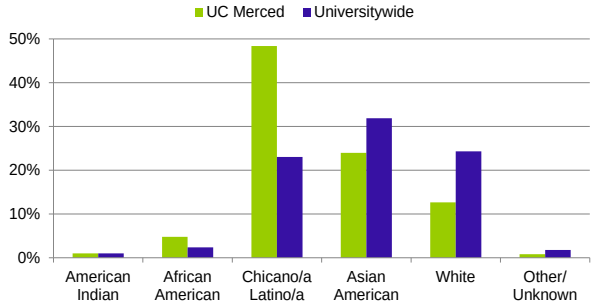
In 2015-16, 94% of undergraduate students at the Merced campus were California residents, and 54% were members of underrepresented minorities. Display IV-12 provides demographic details about UC Merced's California resident undergraduates in Fall 2015. Around 30% of the Fall 2015 incoming undergraduate class came from the San Joaquin Valley. Moreover, among undergraduates at UC Merced, 61% receive Pell Grants and 67% 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.

Display IV-11: UC Merced Total FTE Student Enrollment



Total FTE enrollment at the Merced campus reached 6,850 students in 2015-16. Interest in the Merced campus continues to grow.

Display IV-12: Fall 2015 California Resident Undergraduates by Race/Ethnicity



Among UC Merced undergraduates in Fall 2015, more than 50% are students from underrepresented groups.

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 and to raise the college-going rate in the San Joaquin Valley and beyond. In fact, the Merced campus now serves as the sole referral pool campus, thus helping to maintain UC's commitment to the California Master Plan for Higher Education. 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, 90.5% 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' 206 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 22 majors and 23 minors.

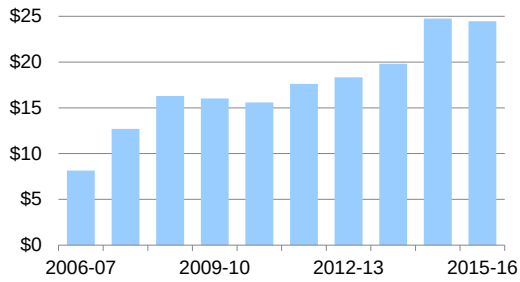
Research

In terms of developing its research enterprise, the Merced campus continues to demonstrate remarkable achievement, having grown its research expenditures nearly fivefold, from $5.5 million in 2005-06 to $24.5 million in 2015-16 (see Display IV-13).

Awards have been granted by a variety of federal, State, and private sources, including but not limited to the National Science Foundation, the National Institutes of Health, the U.S. Department of Agriculture, the Department of Energy, 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' 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

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.

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 1,400 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.

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 thousand 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 aforementioned 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. Campuses received applications for Fall 2015 admission from nearly 103,000 California high school seniors, a 3.2% increase over 2014, indicating the continuing demand among California's high school graduates for access to the University of California. In Fall 2016, UC experienced growth of 2.3% over the prior year, receiving over 105,000 applications from California high school seniors.

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 or 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.

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.

FRESHMAN ADMISSION REQUIREMENTS

California students applying as freshmen to UC must meet the following minimum requirements.

- Completion of at least 15 college preparatory "a-g" courses, 11 of which must be completed prior to the last year of secondary school,
- Minimum GPA of 3.0 in "a-g" courses, and
- Completion of the ACT with Writing or the SAT with Essay (previously the SAT Reasoning Test).

PATHS TO FRESHMAN ADMISSION

California applicants who qualify for admission by one of the following paths and are not admitted to a campus they apply to will be offered admission at another campus.

Statewide Context:

- A combination of grades and test scores that place students within the top 9% of graduates statewide, and
- Satisfaction of the testing and "a-g" course requirements

Eligibility in the Local Context (ELC):

- Rank within the top 9% of the high school class based on GPA in "a-g" courses

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 2015-16 academic year alone, UC reviewed over 25,000 high school courses for UC and CSU eligibility. UC's "a-g" course lists, which include over 178,000 approved courses from 2,300 high schools.

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) program, which focuses on assisting high schools with the development and implementation of integrated courses that unite academic study with Career Technical Education, 288 institutions across California

offered nearly 375,000 public high school students the opportunity to enroll in "a-g"-approved UCCI courses in 2015-16.

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 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.

In 2016-17, UC is projected to enroll nearly 17,000 California resident transfer students, which would constitute the largest California resident transfer class in the University's history.

In 2013, President Napolitano convened a Transfer Action Team (TAT) to streamline and strengthen the transfer pathway between the CCCs and UC. The TAT made several recommendations which were presented to the Regents in May 2014. Implementation is now underway. The TAT report can be found at http://ucop.edu/transfer-action-team/.

Transfer students are a crucial part of the 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 complete 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/counselors/q-and-a/transfer-pathways/index.html) are among the most popular with CCC transfer applicants. In the coming year, UC will also be working closely with the CCCs and CSU to urge state lawmakers to provide the resources necessary for increasing all three systems' capacity to accommodate additional transfer students.

Admission as a Transfer

The vast majority of transfer students are admitted to the University 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 transfer at the California Community Colleges.

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 have 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, 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 a student completes at one institution (e.g., a CCC) can 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 14 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 http://admission.universityofcalifornia.edu/transfer/preparation-paths/index.html.

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 recently, UC enrollment of undergraduate nonresidents was about 4% 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 2016-17, the systemwide total of undergraduate nonresidents is projected to be 32,271, or 16.3% of total undergraduate enrollment, an increase of about 3,300 over the prior year. UC's public peer institutions typically have much higher enrollments of nonresident students. For example, at the University of Michigan and the University of Virginia, nonresidents comprise more than 40% 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 nearly $27,000 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 ameliorate the dilution of quality described earlier in this chapter.

Furthermore, Nonresident Supplemental Tuition enables the University to maintain access for California residents because of the subsidy it provides.

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 enrollment growth funds in the 2016-17 Budget Act, UC is requested to adopt a policy on enrollment of nonresident students by May 1, 2017.

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 77,900 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 5,400 in 2015. 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.

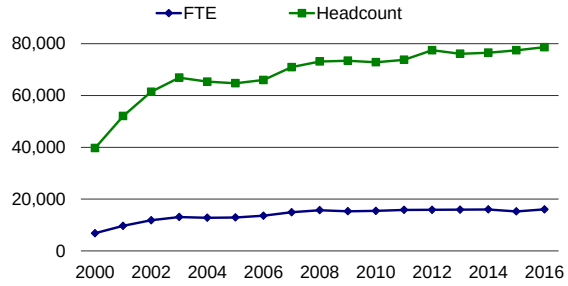
In recent years, over 70% of undergraduate students have enrolled in at least one summer session, and nearly 40% enroll more than once (see Display IV-15) even though students can also use summer for other opportunities, such as work, travel, or internships. This participation rate has stabilized in 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).

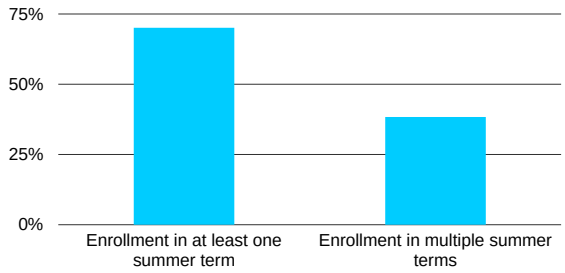
All three campuses implemented marketing plans to ensure the initiatives were widely known, and the three pilot campuses ultimately increased enrollment over the prior year by 638 FTE, compared to an increase at the six non-pilot campuses of 106 FTE.

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



FTE enrollment in summer instruction has grown by 135% since 2000.

Display IV-15: Summer Enrollment Patterns of UC Undergraduates



Among undergraduates who entered UC in 2010 and 2011, fully 70% enrolled in at least one summer term during their undergraduate careers, and approximately 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 one of the 10 largest economies in the world. Indeed, UC is charged by the California Master Plan for Higher Education with the responsibility to prepare professional and/or 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 includes a request for $9 million in State funding to support graduate student enrollment.

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 failing to keep pace with growing workforce demands needs. As a result, the University has reached a critical point in graduate education. Action must be taken to fully invest in graduate academic and graduate professional programs in order to meet California's educational, economic, technological, and public welfare needs.

Since 1966-67, UC undergraduate enrollments have grown dramatically, from 53,000 FTE to an estimated 213,000 FTE in 2016-17, more than 300% over 50 years, as a way of ensuring undergraduate access for UC-eligible students. General campus graduate enrollment has grown at a much slower rate, from 21,000 to an estimated 36,260 FTE in 2016-17, only 73%, 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 28.3% of general campus enrollment in 1966-67 to an all-time low of 14.9% in 2015-16. 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 remained essentially flat in recent years though graduate enrollments in raw numbers have risen. 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 American Association of Universities (AAU) institutions, approximately 32% of public and roughly 63% of private enrollments were graduate students. As Display IV-18 illustrates, UC's total graduate percentage is lower than that at all of UC's eight comparators.

UC has fallen behind in graduate enrollments for several reasons. Because of State budget constraints in the 1980s and 1990s, graduate growth was held down to ensure access to all eligible undergraduates who chose 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. Dramatic increases in student tuition and fees during the fiscal crisis exacerbated these problems. 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 (2011-2015) for enrollment of African Americans in UC academic doctoral programs is 2.9%.

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. 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 efforts between UC faculty and HBCUs.

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 2003, over 100 former PPFP fellows have received faculty appointments 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 is a one-time allocation committed through June 2017.

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.

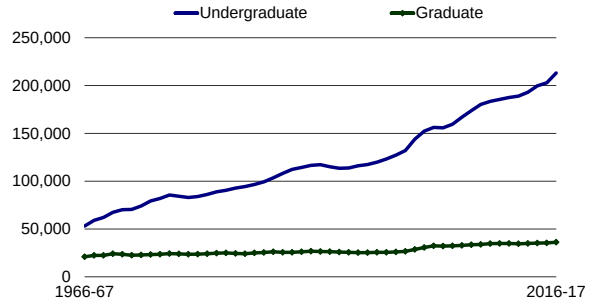
In the future, California's economy will depend even more on high-tech industries. Stem cell research, environmental research and innovation, global health care delivery, and energy research will have significant impacts on the health and economy of California and the world.

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. As the State's economy continues to shift toward jobs requiring advanced education, the Public Policy Institute of California (PPIC) projects that California will need to fill 1.1 million positions requiring at least a bachelor's degree by 2030[2].

In order to help meet this demand for highly educated workers, and in accordance with the 2016-17 Budget Act, UC is currently identifying the policy and budget changes that would be required in order to increase the number of bachelor's degrees awarded by 250,000 above current projections by 2030. In addition, the looming retirement of highly-educated workers in the large "baby boom"

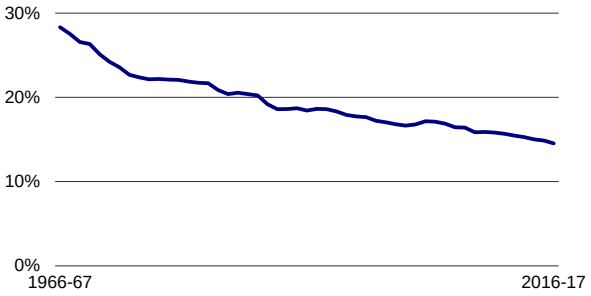
[2] PPIC. "Will California Run Out of College Graduates?" *Public Policy Institute of California.* October 2015. Web, http://www.ppic.org/content/pubs/report/R_1015HJR.pdf

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



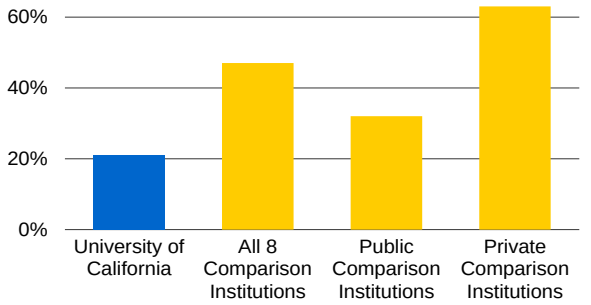
Since the 1960s, UC's undergraduate enrollment has grown rapidly, but graduate enrollment has not kept pace. While undergraduate enrollment has grown over 300%, graduate enrollment has only grown about 80%.

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 about 15% in recent years.

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



In Fall 2014, 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 63% at its four private comparison universities.

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 technologically-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[3]. These professional and managerial jobs typically require at least a bachelor's degree and often a master's 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, contribute to the State's economic growth. Indeed, 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.[4] 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.

[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

[4] 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/

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 if California is to address the shortfall in college graduates projected by the PPIC. 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 2015-16, UC attracted significant percentages of students with prestigious fellowships: 14% of NSF fellowship recipients and 27% 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 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 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 an undergraduate education is no longer sufficient in all cases. While recent increases in undergraduate enrollments have served to provide access for Tidal Wave II, many members of this second wave 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, particularly from the University's own baccalaureate graduates — 71% of UC undergraduates state a desire to earn a graduate or professional degree. The University has an obligation to provide all Californians with the opportunity to achieve at the highest levels.

UC must 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 equip the emerging majority to 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

Opportunities for online learning at UC continue to grow, with increasing recognition of the important role technology and innovation play in providing a high quality and engaging education for UC students. Today, all 10 campuses offer online learning opportunities, utilizing technologies in innovative ways. Systemwide, UC offers fully online courses and programs, as well as online components of courses to UC undergraduate and graduate students to enhance learning opportunities, strengthen teaching and learning, and provide increased access to the courses students need to graduate.

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. 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.

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). These funds support the development of online and hybrid courses, campus and systemwide infrastructure, cross-campus course instruction, and evaluation and accountability efforts.

In 2015-16, ILTI's accomplishments included:

- awarding funds for the development of 48 online undergraduate courses that will be offered to students across the UC system during the academic year, including four courses for a fully online minor in education at UCB, and five courses as part of the Global Health Initiative;
- offering nearly 80 online courses to UC undergraduates systemwide during the academic year. In total, over 10,000 UC undergraduate students enrolled in and completed these courses, including 195 cross-campus students (UC students enrolling in online courses offered at other UC campuses);
- increasing the number of online courses that provide General Education (GE), pre-major, major credit and/or course equivalence at other UC campuses from 32 instances in 25 courses, to 558 instances in 107 courses;
- 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. For example: UCB's Graduate School of Education is developing a fully online undergraduate minor in

education, the most popular minor on campus involving students from 70 different majors. The courses embrace a constructive approach to learning, emphasizing peer-to-peer learning through group work. Faculty are exploring the competencies inherent in collaboration and working on instructional methods to support group learning in the online environment and make it meaningful for students.

- The University of California Global Health Institute, through ILTI, is developing five 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 is being developed by cross-campus teams, with representation from nine UC campuses. 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, is developing 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 will create their own podcasts relating their family histories to major events of the 20th Century.

- UCB's Joi Barrios has developed three fully online courses: introductory, intermediate, and advanced Filipino. Each course has online scenario-based dialog videos and a live lecture component emphasizing small group learning in breakout rooms. The courses also feature a live language assessment in both the midterm and final, administered through an online conferencing platform.

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 fifteen fully online advanced degree programs. The programs include: 1) a Master of Public Health, a Master of Advanced Studies in Integrated Circuits, and a Master of Journalism at UCB; 2) a Master of Advanced Studies in Criminology at UCI; 3) a Master of Science in Engineering, an MBA, a Master and Doctorate in Aerospace Engineering at UCLA; 4) a Master and Doctorate in Applied Mathematics and Physics at Merced; 5) an Engineering Master and a Statistics Master at UCR; 6) a Master in Computational Science, Mathematics and Engineering at UCSD; 7) a Healthcare Administration and Interprofessional Leadership degree program at UCSF; and 8) a Doctorate in Communication at UCSB. 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 College Prep and College Board approved Advanced Placement courses. Scout continues to exceed its enrollment projections. 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 and curricula that would be approved by the University to satisfy the "a-g" subject requirements.

Enthusiasm for online and hybrid teaching and learning at UC continues to grow. Students, staff and faculty are increasingly sophisticated in how they interact with and utilize technology to enhance teaching and learning. As UC moves forward with online education, it will continue to evaluate what is most effective and how best to use the online environment to support and enhance student learning and instruction.

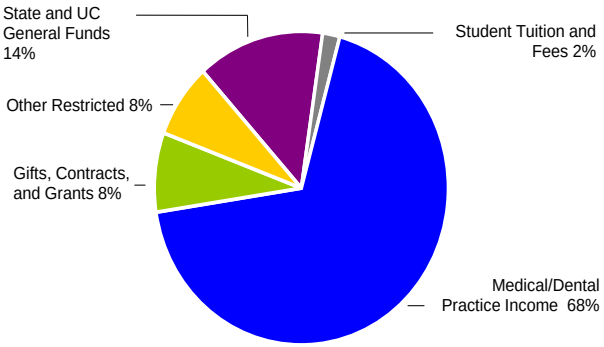
Health Sciences Instruction

The University of California plays a critically important 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 more than 14,800 students across 17 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.

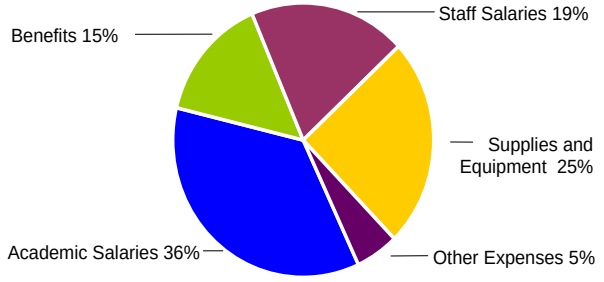
The ultimate goal of all UC health sciences programs is to train skilled, knowledgeable, and compassionate healthcare professionals; to improve healthcare outcomes through state-of-the-art research; and to deliver high-quality health services in California and worldwide.

Display V-1: 2015-16 Health Sciences Instruction Expenditures by Fund Source (Total: $2.7 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: 2015-16 Health Sciences Instruction Expenditures by Category (Total: $2.7 Billion)



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

FUNDING FOR HEALTH SCIENCES

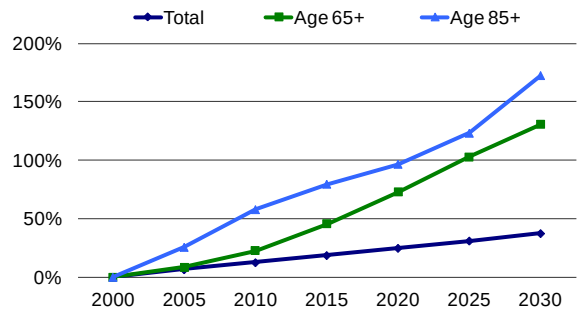
In 2015-16, expenditures for health sciences instruction totaled $2.7 billion, of which $380 million were UC and State General Funds. The patient care services provided by UC health sciences faculty also generate significant revenue, which provides valuable support for health sciences instruction.

To operate the instructional program, the health sciences schools require faculty, administrative and staff personnel, supplies, 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 dramatically 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 two major health sciences initiatives: the newly established School of Medicine at the Riverside campus and the recently established School of Nursing at the Davis campus.

THE NEW RIVERSIDE SCHOOL OF MEDICINE

The new School of Medicine at Riverside, 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 that will help 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 California HealthCare Foundation.

Accepting its first class in Fall 2013 and now enrolling more than 200 medical students, the goals of the new 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. Currently, the UCR medical school is preparing for the final step to full accreditation, anticipated in 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 2016-17, the School of Medicine is continuing to expand both its basic science and clinical faculty.

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 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, and psychiatry, with a new program in obstetrics/gynecology recently receiving accreditation. Working with Loma Linda University, it has also established a primary care pediatrics track with the institutional sponsorship held by Loma Linda. The Riverside School of Medicine also partners with hospitals in the region in additional programs in family medicine, general surgery, and internal medicine. These programs combined are training approximately 160 resident physicians currently. Development of additional residency training programs and fellowships is anticipated in future years.

THE 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.

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 38 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.

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.

In 2004, UC launched a systemwide medical education initiative intended to help address state needs. Referred to as "PRograms in Medical Education," or PRIME, the initiative 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 2016-17, UC will enroll approximately 352 medical students in PRIME. While this initiative 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 initiative, 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.

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 (726 versus the U.S. average of 929 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.

Graduate 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 Irvine campus added a master's degree program in 2009-10 and expanded with an initial cohort of Ph.D. students in Fall 2013. UCI is currently seeking internal approvals to transition from a program in nursing science to a School of Nursing. Once complete, approval by the Board of Regents is required to establish a new school on a UC campus. It is anticipated that the UCI nursing proposal may be an action item before The Regents in the first quarter of 2017. In 2016, the William and Sue Gross Family Foundation committed $40 million to UCI to aid in the construction of a new building, and to name the new school once it is established.

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, and self-supporting graduate professional degree programs.

UNIVERSITY EXTENSION

University Extension is the largest continuing education program in the nation, providing about 8,544 courses to almost 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 2015-16, University Extension expenditures, derived entirely from fees charged to participating students, were $293 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 26,000 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 2015-16, UC Extension awarded 13,222 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, 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

2015-16, out of 88,712 total students, 10,582 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 2015-16, approximately $15.7 million of summer session expenditures were funded from non-UC student tuition and fees.

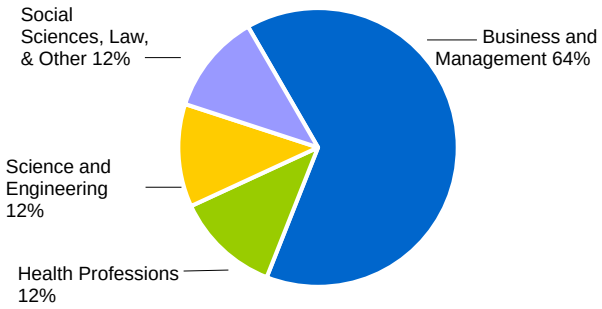
SELF-SUPPORTING DEGREE PROGRAMS

The University operates 73 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 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.

Display VI-1: 2015-16 Self-Supporting Program Headcount Enrollment by Discipline (Total: 6,450)



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

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 2015-16, a total of 6,450 students enrolled in self-supporting programs. These programs generated over $234 million in revenue during 2015-16.

Research

Established as California's primary academic research institution in the 1960s by the Master Plan of Higher Education, UC plays a unique role in California: 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 many different ranking systems.

UC's commitment to "Teach for California and research for the world" creates 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 the new knowledge they create to cure diseases, develop industries, enhance our security, and train the leaders of tomorrow's knowledge- and innovation-centric economy. As indicators of its pursuit of excellence, 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 756,000-acre Natural Reserve System, and three National Laboratories, UC research tackles some of the most urgent problems facing California and the world and creates the 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 to support research, UC spends seven 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 times of economic difficulty. However, the effects of major fiscal crises facing the State and the increasing global competition for the world's best scholarly talent may compromise UC's research capabilities. While UC faculty members have been extraordinarily successful at attracting federal and private funds to California, these funds and their associated economic impact will diminish if UC's scholars are successfully recruited by other institutions. Similarly, without continued investment, the University is less able to attract pre-eminent researchers 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.

2017-18 RESEARCH INITIATIVE: INSTITUTE OF TRANSPORTATION STUDIES

One of the University's budget priorities for 2017-18 is to seek additional State support for the Institute of Transportation Studies (ITS) that will benefit Californians and be responsive to critical State goals. With worsening traffic congestion threatening economic growth and quality of life, as well as contributing to daunting energy and climate change challenges, California and the nation need new forms of transportation and new ways of thinking about transportation. A multicampus research unit with offices on four UC campuses, ITS is recognized as one of the premier centers of transportation research in the world. It teams UC researchers from more than 30 disciplines across the UC system to address critical State goals in high priority areas such as climate change, urban sustainability and air

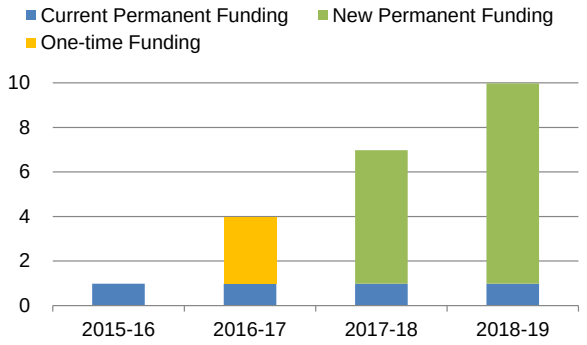
quality, infrastructure and energy, transportation system performance/optimization, and taxation and finance. With these priorities and additional State funding in mind, ITS has developed an ambitious research agenda focused on ten key initiatives:

- Data-Enabled Decision and Policy Making
- Sustainable Transportation Finance
- Greenhouse Gas and Oil Reduction
- Vehicle Travel and Land Use Integration
- Connected and Automated Transportation
- Public Transit
- Sustainable Goods Movement
- Infrastructure Resilience: Disaster Management and Cybersecurity
- Mobility and the Sharing Economy
- High Speed Rail (HSR)

ITS has been funded with a small portion of the fuel taxes that have supported the Public Transportation Account (PTA) since 1947. Since its inception, the PTA funding for the Institute has risen modestly over 60 years to a current annual total base funding level of $980,000. If the original funding allocation had increased with inflation over the past nearly 70 years, it would amount to $9.7 million in 2015.

Although limited, the State PTA contribution has been highly leveraged by the ITS to attract roughly $34 million annually in extramural funding. However, minimal core funding has a significant disadvantage: it forces the ITS to be almost entirely reactive to funding opportunities defined by outside agencies and companies rather than focused on specific immediate and long-term needs of the State. The University is extremely grateful for a $3 million one-time funding augmentation received in FY 2016-17. However, this funding cannot meet ongoing needs; additional State investment is critical to enabling ITS researchers to help address California's transportation priorities. To contribute as substantially to state needs as possible, the University is requesting that this funding be increased by $3 million per year in both the 2017-18 and 2018-19 budget cycles (Display VII-1), and that the resulting annual funding level of $9.98 million be made permanent with inflationary increases in future years.

Display VII-1: 2016-17 Institute of Transportation Studies (ITS) Multiyear Funding Proposal (Dollars in Millions)



ITS's proposal for permanent research funding is commensurate with meeting the State's core transportation studies needs.

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. 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. 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 in turn is built around its world-class faculty. UC recruits faculty from around the globe, who bring their excellence to their teaching and their original scholarship. Throughout their UC careers, faculty members are expected to continue to push the envelope toward excellence, helping shape the leading edge of their fields. Adherence to these goals 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.

Students experience research both in and out of the classroom. As part of formal instruction, faculty scholarship underlies the entire undergraduate curriculum, exposing 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 UC Undergraduate Experience Survey found that about 60% of senior undergraduates have already engaged in research or creative activities under the direction of dedicated faculty mentors or instructors. The Internet and other technological tools are helping to increase and enrich undergraduate participation in original research and the creation of new knowledge in their disciplines of study. Engagement with research allows undergraduates to understand how new knowledge in their fields is created and develops curiosity and self-confidence, which will prepare them well for their post-graduation endeavors. As they participate in scholarly and research activities, UC undergraduates are also mastering valuable critical thinking, communication, and problem solving skills. In an increasingly globalized world, these skills, along with international experience, will help UC undergraduates become engaged global citizens and competitive contributors to a knowledge- and innovation-driven 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 with the faculty to advance knowledge and help attract research dollars to the state.

In 2014-15, UC trained about 16,000 graduate students as paid research assistants and employed or hosted 6,200 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 faculty. As part of its commitment to high quality graduate education, UC has launched the Graduate Academic Pipeline Initiative, which focuses on building an academic graduate population reflecting the diversity of the state and the nation. In order to enhance the representation of 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 student 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 has proposed 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 (most of the CSU campuses are Hispanic Serving Institutions).

An important aspect of the teaching-research nexus is internationalization. Research is an intrinsically global enterprise, with scholars from all parts of the world participating in the creation of knowledge and broadly sharing their contributions. UC's scholars are already highly international, with 23% of all ladder rank faculty and 29% of all other faculty and academic appointees coming from overseas. This level of overseas engagement, when combined with the 24% of graduate students and 62% of postdoctoral scholars from abroad, provides a diverse community of teacher-scholars that raises multicultural awareness in the UC system.

An area that is ripe for growth is overseas research opportunities for UC students. A 2016 UCUES survey notes that just over 11% of undergraduates reported participation in a UC study abroad program, and about the same percentage had travelled abroad for a service learning/volunteer/work experience. Through the many international connections that UC scholars possess, the UC system will begin to explore 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

SPOTLIGHT ON STUDENT RESEARCH

Drones represent an exciting, emerging technology with the potential to transform many fields of scholarship. UC is at the leading edge of the unmanned aircraft systems (UAS) field and has recently formed a Center of Excellence for Unmanned Aircraft Systems Safety, based at the Merced campus. Its founding director is Brandon Stark, a Ph.D. student in Electrical Engineering and Computer Science at UC Merced.

Stark began experimenting with drones while an undergraduate at UC Irvine. The Center of Excellence serves as a hub for UC systemwide policies, procedures, and training protocols for UAS and will offer resources, including training courses, seminars, and workshops, to interested UC community members to ensure that drones are used safely and appropriately. The Center will help align UC policies with federal and state laws, and facilitate Federal Aviation Administration approvals that are required for drone flights.

Undergraduate and graduate students across UC are developing creative drone-based projects ranging from surveying to cultural heritage applications. For example, at UC Merced undergraduate and graduate students use drones to develop innovative agriculture imaging analysis software that can be used to manage crops, detect nitrogen stress and water stress, monitor pests, estimate yields, and monitor small-animal activity. This precision agriculture technology can provide real-time information to growers so they can make more informed decisions about field management.

At the San Diego campus, a team of faculty and undergraduate researchers traveled to the Mesoamerican archaeological site known as El Zotz to field test a variety of UAS devices that could provide an aerial view of the ruins through the jungle canopy. Since the thick jungle cover makes it difficult to explore the ruins on foot, the UAS data will enable archaeologists to develop 3D models of the ruins to better understand how the ancient Maya city-state developed and what impact it had on the surrounding landscape.

to benchmark to international standards the quality of the academic preparation that the UC system provides. UC will study the impact of international and other student experiences on graduate 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 a global reach – with 4,833 active foreign patents, 795 of which were issued in 2014-15 – 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 useful products for public use.

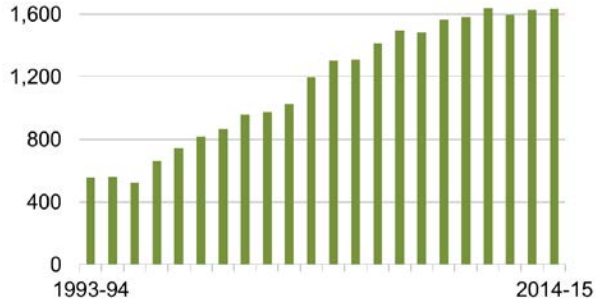
For the past 20 years, UC has led the nation's institutions of higher education in obtaining patents. UC's faculty and graduates are responsible for 12,203 active inventions, a 2% increase from the prior year level. The annual number of invention disclosures since 1993 is shown in Display VII-2. In 2014-15, UC disclosed 1,745 new inventions (includes Lawrence Berkeley National Laboratory inventions), the largest number among universities in the United States, with over a third created by graduate

students. 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 nearby startup companies, which stimulate economic growth in communities adjacent to UC campuses. In 2014-15 alone, 85 startup companies were founded, bringing the total number of startup companies founded through UC patented innovations, since 1980, to 934 (Display VII-3).

The nearly one-third of UC startups that have been founded by UC graduate students and alumni are based directly on their research as graduate students. 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, creates ultra-thin, flexible batteries that can be screen-printed in virtually any shape and size.

UC startups are contributing to the state's economy, employing over 18,000 people and bringing in more than $14 billion in annual revenue in fiscal year 2014-15. Since 2005, over $11 billion in venture capital and $390 million in federal Small Business Innovation Research grants have been invested in UC startups. Beyond spurring the creation of startup companies, many of UC's 4,621 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 that enable paraplegics to walk; and market-leading varieties of strawberries and citrus, to name just a few examples.

Display VII-2: UC Invention Disclosures



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

INNOVATION AND ENTREPRENEURSHIP INITIATIVE

The University launched the Innovation and Entrepreneurship Initiative in 2016-17 to enable UC research to be better leveraged by the state, capitalizing 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 the Office of Research Innovation and Entrepreneurship at the recommendation of her Innovation Council, which is comprised of a broad array of successful leaders from business and academia. President Napolitano charged the new office with advancing UC's Innovation and Entrepreneurship Initiative.

Among the goals of the Office of Research Innovation and Entrepreneurship are:

- Promoting the UC innovation and entrepreneurship brand nationally and internationally;
- Accelerating the 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 the Office was to implement a rigorous design, review, and implementation process around $22 million in one-time FY 2016-17 State funding via AB2664. This funding will enable the state to leverage more effectively UC's applied research and education capabilities and opportunities, by driving investment into innovation and entrepreneurship infrastructure and programming.

More information about the Office of Research Innovation and Entrepreneurship is available at the following site: http://www.ucop.edu/research-innovation-entrepreneurship/index.html. More on the Innovation and Entrepreneurship Initiative is on the web at https://www.universityofcalifornia.edu/initiative/innovation-and-entrepreneurship-initiative.

These businesses provide jobs for Californians as well as tax revenue 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. UC has obtained Regental approval to increase investment in companies with a nexus to the University in a way that encourages innovation and entrepreneurism on the campus while continuing to deliver value to UC's investment portfolio.

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 agriculture industry, developing new technologies in crop management and pest control, and helping the industry adapt to changing regulations while remaining competitive. Additional information about UC's impact on agriculture appears later in this chapter.

Display VII-3: Impact of UC Technology Transfer*

Royalty and Fee Income for fiscal year	$177 million
UC Portfolio of Active Inventions	12,203
UC Portfolio of Active U.S. Patents	4,621
Number of Active Licenses	2,415
Companies founded based on UC technologies	934

* Total as of June 30, 2015.

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 stocks the nation's pantries. Research universities in California – and UC in particular – have played a seminal role 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 – 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 pass 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 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 in 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 control 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 are, and 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 in climate solutions planning.[1] Moreover, the University has received about $500 million in awards for carbon neutrality research over the last six years. 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 carbon dioxide. 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 the full range of new and different 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, disease causation, and medical treatment in the following topical areas:

- **Clinical and Predictive Genomics.** The sequencing of the human genome in the early 2000s prefaced the genomics revolution that will underpin many elements of healthcare. 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 bases 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

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

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 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 lens 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 mid-size businesses that have the opportunity to leverage new manufacturing modalities to supply parts or finished goods to the nation and the world. With the 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, 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 recreating and reconstructing 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 to work, who wish to access shopping or recreation, and who benefit from moving goods from manufacturers to markets. Expanding urban populations will require 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, 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" and demonstrations of their potential.

The Information Age

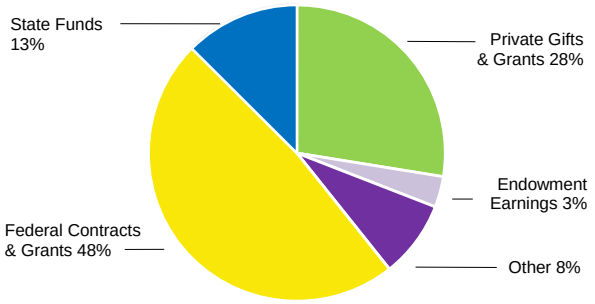
Information is a defining element of today's society. Individuals, institutions, and businesses are collecting, retaining, and using data for everything from creating and maintaining personal relationships through social media to developing new businesses that deliver personalized products or services.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

LEVERAGING THE STATE'S INVESTMENT IN THE UC RESEARCH ENTERPRISE

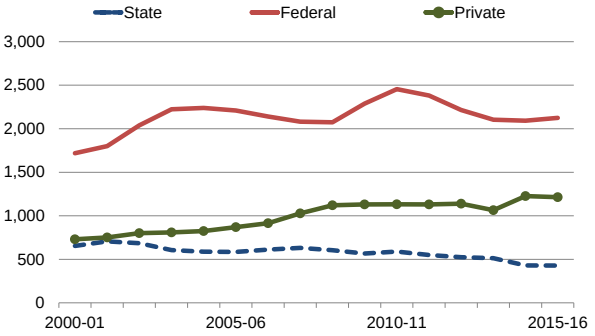
To maintain and enhance its competitive advantage, UC's world-class research enterprise requires the best faculty, research staff, postdoctoral scholars, and graduate and undergraduate students, along with state-of-the-art equipment, and well-maintained facilities. State investment is the basis for UC's 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, support graduate student research assistants, and build and maintain facilities to conduct cutting-edge research such as the California Institutes for Science and

Display VII-4: 2015-16 Direct Research Expenditures by Fund Source (Total: $4.4 Billion)



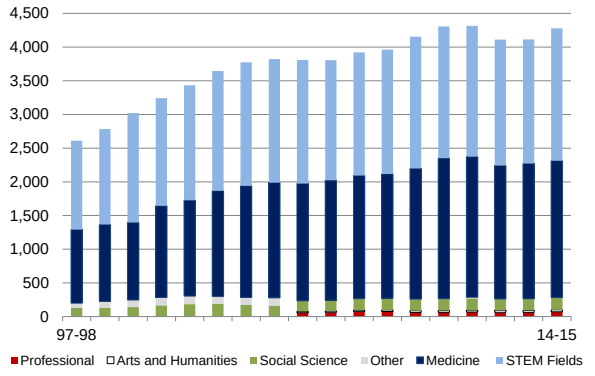
Nearly 80% of research funding is derived from federal agencies and private sources.

Display VII-5: 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 have declined by 35% while federal and private research funds combined have grown by 36%.

Display VII-6: Direct Research Expenditures by Discipline (Dollars in Millions; Inflation-adjusted)



Expenditures for research in the medical fields have increased by 86% since 1998, compared to an increase of 48% for all other disciplines.

Innovation, four world-class centers of research excellence in telecommunications, quantitative biosciences, nanotechnology, and advanced electronics, which are some of the most promising new areas of growth for high-tech industries. The California Institutes for Science and Innovation and other Multicampus Research Programs and Initiatives, both of which are discussed further at the end of the 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 world-renowned 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 knowledge- and innovation-based economy.

UC researchers are very successful in bringing in external support for sponsoring their research. In 2015-16, UC received nearly $5 billion total in research awards, averaging about $307,000 per award. 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 2015-16, direct research *expenditures* (contrasted with *awards*) totaled $4.4 billion, a 3.3% increase from the prior year.[2] 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 2015-16.[3] Display VII-4 shows direct research expenditures by fund source for 2015-16. Adjusting for inflation, Display VII-5 shows changes over time by source, and Display VII-6 presents trend data about research expenditures in the various disciplines.

[2] This rate of growth differs from the rate of growth in extramural awards noted later, reflecting the multi-year nature of research awards.

[3] 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.

State Funds

In 2015-16, 13% of direct research expenditures came from State sources, which includes State General Funds and State Special Funds to support coordinated statewide programs, and State agency agreements. For many UC research programs, State 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 for direct research, including:

- the California Institutes for Science and Innovation;
- organized research units on individual campuses;
- multicampus research programs and initiatives (MRPIs);
- systemwide programs to support research on AIDS, tobacco, breast cancer, geriatrics, and collaborative research with industry; and
- agricultural research through the Agriculture Experiment Stations.

In 2016-17, State Special Funds appropriated from restricted State fund sources are providing about $25.9 million for a range of research initiatives, including a coordinated statewide program of tobacco-related disease research administered by the University ($12.9 million), but available to researchers from other institutions on a competitive basis. Part of the State's tobacco tax supports the Breast Cancer Research Program ($5.1 million). The State personal income tax check-off also supports the California Breast Cancer Research Fund ($421,000) and the California Cancer Research Program ($425,000).

California State agencies also provide contracts and grants to the University for research. In 2015-16, expenditures from State agency sources were about $180 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, California Emergency Medical Services Authority, and the California Institute for Regenerative Medicine.

As a responsible steward of State research funding, UC convened the Portfolio Review Group (PRG) in Fall 2012. Over the next few years, the PRG systematically reviewed 21 systemwide research programs receiving State research funding using the degree of alignment with the following set of University-wide research funding principles for the assessment:

- Act as one system of multiple campuses to enhance UC's research capacity, influence, and advantage
- Promote efficient inter-campus collaborations and systemwide economies of scale
- Serve the state of California

In addition to conducting the portfolio review, the PRG recommended long-term strategies for maintaining a vibrant and well-balanced research portfolio of current and future systemwide research programs. The Office of the President continues to use the PRG's recommendations in determining the best use of UC's research funding.[4]

Federal Funds

UC is a leader among universities receiving research awards. 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 $2.9 billion in federal research funding alone in 2015-16. 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. Display VII-7 shows federal research awards distribution by agency.

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.

[4] Additional information on the PRG and its recommendations can be found at http://www.ucop.edu/research-graduate-studies/programs-and-initiatives/research-initiatives/systemwide-research.html.

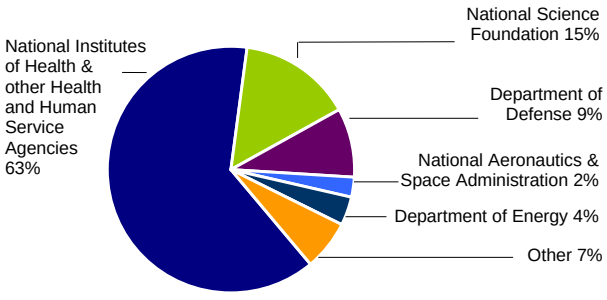
This proportion should not overshadow the vibrant research activity that also occurs in the social sciences, arts and humanities, and professional disciplines. These fields make important contributions to scholarship, yet have relatively little access to external research funding.

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

Although federal government funding for all university research decreased in 2008, an influx of American Recovery and Reinvestment Act (ARRA) funding temporarily reversed the downward trend. As of October 2013, UC researchers have been awarded $1.1 billion in ARRA contract and grant funding for research and research infrastructure. Consistent with overall federal research funding, the largest amounts of ARRA funding awarded came from NIH and NSF. Many awards were multi-year, but all ARRA funds were required to be expended by September 2013.

In 2012-13, the sequestration of the federal budget produced a sharp downturn in research funding at UC, strongly accelerating the problems caused by the absence of ARRA funds. However, the Bipartisan Budget Act of 2013 and subsequent federal appropriations legislation

Display VII-7: 2015-16 Federal Research Awards by Sponsor (Total: $2.9 Billion)



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

Display VII-8: History of Federal Funding for UC Research

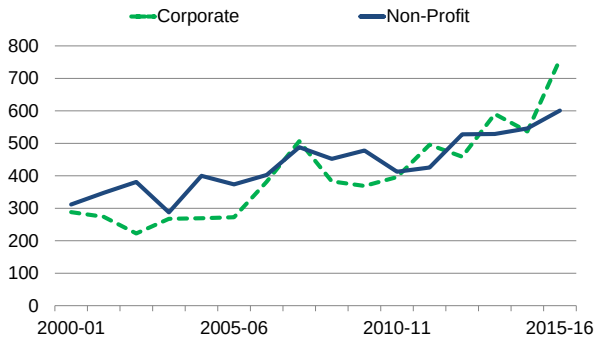
1982-83 to 1991-92	Annual increases in federal support for UC averaged nearly 10%.
1992-93 to 1996-97	Focus on reducing the federal deficit resulted in much slower growth; federal support for UC rose 4% annually on average, with no increase in 1996-97.
1997-98 to 2001-02	Strong growth in the national 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 sequester cut about $3.5 billion in federal academic research support nationwide, a reduction of about 7%. 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.

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 totals allowing FY 2016 appropriations for federal R&D programs to increase by an average of 8% compared to FY 2015 levels, with NIH appropriations increasing by 6.6%. The NIH, which is UC's largest single source of research funding, had been expected to receive a significant funding increase for FY 2017 under a regular year-end appropriations agreement. However, final FY 2017 federal funding levels for research programs were not settled before the 114th Congress adjourned in December. Instead, funding roughly level with FY 2016 appropriations was extended for most federal programs through April 28th, 2017. With a new President and Administration taking office in January 2017, it remains unclear whether regular appropriations will be enacted for FY 2017. Pursuant to enactment in December of the 21st Century Cures Act, however, an additional $350 million was appropriated in FY 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.

Private Funds

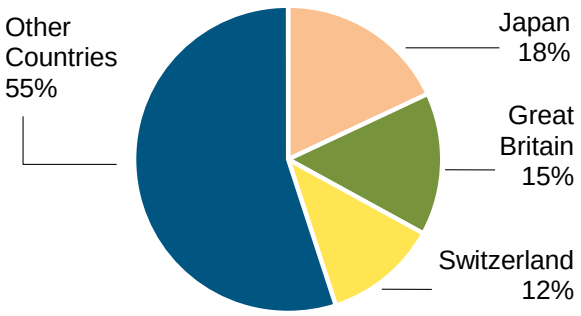
Research investment in UC by private organizations has kept pace with federal funds as an important source of research funding. From 2000-01 to 2015-16, private support for research has increased by over 160%, even after adjusting for inflation (Display VII-9); the more recent increase in corporate funding 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 nearly one-quarter of total research awards in 2015-16. 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. Non-profit research sponsorship has been increasing since 2010-11, above pre-recession levels. Among the largest non-profit awards were those from the Parker Institute for Cancer Research ($45 million), the Simons Foundation ($32 million), and the Cleveland Clinic Foundation ($22 million).

Display VII-9: Private Research Awards by Type of Sponsor (Dollars in Millions; Inflation-adjusted)



Accounting for nearly a third of all UC research awards, funding from corporation and non-profits are above pre-recession levels.

Display VII-10: Research Awards by Foreign Sponsors FY 2011-16



Although international sponsors provide a relatively small portion of total research funding to UC ($1.07 billion over six years, compared to almost $5 billion in research awards for FY 2016 alone), this funding provides the valuable opportunity for UC scholars to engage directly with the global research community.

International Funds

A significant subset of private research awards, funds from international sponsors 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. As shown in Display VII-10, UC received nearly $1.07 billion in international research support from 80 different countries since FY 2011. Great Britain, Switzerland, and Japan contributed 45% of the total international funding during that period, primarily in the medical and energy research disciplines.

Department of Energy National Laboratories

UC oversees three Department of Energy (DOE) laboratories: the Lawrence Berkeley National Laboratory and two national security laboratories, Lawrence Livermore and Los Alamos National Laboratories. UC receives fees to manage the two national security laboratories and generally uses some of this money to fund collaborative projects between UC and these national security laboratory researchers. The Lab Fees Research Program supports projects on a range of issues, including bioterrorism, nuclear nonproliferation, energy efficiency, and new energy resources. This program gives UC faculty and students access to premier researchers in fields of strategic importance to the nation, as well as distinctive research facilities. UC has managed the 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 Laboratory Management* 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 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; some 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 in which California is among the world's leaders were based on UC research. UC patents have spawned nearly 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 increased competition for the world's best scholars and students. Several years of federal budget austerity have resulted in less federal research funding being available to the University. As the final federal ARRA funds were being expended, new limits on federal discretionary budgets required by the 2011 Budget Control Act were compounded by additional, deep fiscal year 2013 sequestration cuts. Although subsequent federal appropriations legislation has provided relief from sequestration cuts, increased availability of federal research funding to the University is uncertain in the short term: a new President and Administration takes office in January 2017, and the extent to which regular

appropriations will be enacted after April 2017 is unclear. Final FY 2017 federal funding levels for most programs were extended through April 2017 at roughly FY 2016 levels. Unless additional legislation is enacted, spending cuts will resume in 2018 through 2021 for discretionary programs, and through 2025 for some mandatory programs.

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 as the federal government has added new regulations, the costs of compliance with extramural contract and grant requirements have also risen rapidly. 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, fuels 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, key 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, 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.

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 advancements 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. Very 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 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.

Multicampus Research Programs and Initiatives

By leveraging the best talent from throughout the UC system to address the most difficult social, economic, and environmental problems, UC's Multicampus Research Programs and Initiatives (MRPIs) make critical contributions to the mission of the University and the benefit of 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 work directly with State agencies to disseminate the expert knowledge of UC faculty in areas of importance to California.

The MRPI awards use relatively modest UC support, typically in the range of $100,000 to $500,000 annually per research award, to stimulate multicampus engagement, as well as to dynamically link research across the 10 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 2016 competition for awards will support new projects starting in 2017. Below are some examples of currently funded multicampus research endeavors that use UC's unique combination of depth and breadth:

- The UC Water Security and Sustainability Research Initiative, a multi-campus initiative led by the Merced campus, will dramatically improve data on California's water cycle and how water is used, helping to ensure that water is well managed; and support policy development to assist the State in achieving long-term water security.
- Memory Prosthetics, a cutting-edge collaboration of five campuses led by the Irvine campus, is utilizing UC's outstanding expertise in the neurophysiological and neurocomputational basis of memory, and in the creation of microelectronic, brain-computer interfaces, to create a prototype wireless, implantable memory-indexing prosthesis to intervene against memory impairment.
- The California Immigration Research Initiative, led by the San Diego campus and partnering with four campuses and multiple community groups, is using MRPI funding to elucidate the complex processes of immigrant integration. The Initiative provides analytical frameworks and applied solutions for policymakers and non-governmental organizations working on immigration-related issues, particularly those related to how newcomer integration shapes California's schools, workforce, businesses, public health, politics, and culture.
- Legal Economic Data and the Analysis of Environmental Markets is a collaborative effort, led by the Santa Barbara campus, to assemble public databases on property rights and market transactions to understand decision-making and inform policy approaches to environmental problems such as over-exploitation of fisheries, inefficient water use, and the conservation of endangered species.
- Reducing Obesity: Sugar, Stress and Environment, led by the San Francisco campus, partners faculty from five UC campuses and Hastings College of the Law, and combines expertise from neuroscience, psychology, epidemiology, nutrition, and policy, to make significant progress on preventing and reversing obesity in communities in California and worldwide most affected by this growing epidemic.

The MRPI portfolio of awards represents a shared resource funded 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, University of California President Janet Napolitano launched a new research initiative, the President's Research Catalyst Awards. The Catalyst Awards will channel up to $10 million over three years to fund multicampus research in areas of strategic importance, such as sustainability and climate, food and nutrition, equity and social justice, education innovation, and health care. 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. Nine awards, totaling almost $8 million, have already been made.

From among the awards, two examples highlight the value and breadth of this key investment for both California and the world. In the area of climate and environment, a team of UC scientists from nine campuses, collaborating with the UC Natural Reserve System (NRS), won a Catalyst award for their proposal to develop a UC-wide Institute for the Study of Ecological Effects of Climate (ISEEC) to leverage statewide data spanning marine, terrestrial, and freshwater ecosystems as a foundation for research aimed at detecting and forecasting climate impacts. Capitalizing on the infrastructure of Calit2, a team of archaeologists, engineers, and graduate students from four campuses won a Catalyst award to conduct path-breaking archaeological research at locations in Egypt, Turkey, Jordan, Israel, Greece, and Cyprus. Their project covers over 10,000 years of cultural materials and will digitally preserve at-risk cultural heritage sites using 3-D replicas.

A third-round competition is underway, with new awards beginning in January 2017.

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 to approved users from other institutions, public and private, throughout the world. With 39 sites encompassing more than 756,000 acres and by providing research access to several million more acres of protected public lands, the NRS is the largest and most diverse university-operated system of natural reserves in the world. Six NRS sites are within four UNESCO-designated biosphere reserves, and the NRS's array of marine reserves spans a transect of more than 500 miles, from Bodega Marine Reserve in the north to Kendall-Frost Mission Bay Reserve near the Mexican border.

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 NRS' large-scale canvas enables researchers to compare species and conditions in one portion of the state with those of another, at a spatial magnitude relevant to species and their management. The ability to conduct such studies over the long term is particularly crucial at a time when environmental and human changes are occurring on a global scale.

Research within the NRS addresses such pressing global problems as climate change, wildland conversion, loss of native biodiversity, environmental deterioration, declining water quality, and conservation. 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 the *Adventure Risk Challenge*, a leadership-literacy-outdoor education program offered to high school students from underserved communities. This program improves academic skills, exposes youth to a range of natural environments and wilderness experiences, and builds the confidence needed to accomplish goals, succeed in high school, attend college, and become engaged citizens.

Three academic terms of the NRS's undergraduate field ecology and conservation course have been completed since the program launch in Fall 2015; a fourth term is now underway. Offered three times per year, with assistance from the Education Abroad Program and faculty at the Santa Cruz campus, *California Ecology & Conservation* brings students from the nine undergraduate campuses together to visit, learn about and conduct independent research at NRS reserves. In addition to lectures, a series

of workshops (pre- and post-field research) provide individualized tutoring and guidance in the design, execution, analysis, and presentation of ecological field research. The field-based portion of the study includes student-based inquiry studies, which focus on providing a habitat framework, posing theoretical questions, and providing an overview of past research relevant to the specific location. Students are in the field at various NRS reserves for the duration of the course. Building on this success, the NRS is currently 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. The NRS has also benefited from some matching funds 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 management, infrastructure, and operations for the 21st century demands being placed on it.

The NRS celebrated its 50th anniversary in 2015. To address its financial needs, the NRS has initiated a three-year fundraising campaign to generate a target of $50 million to support the reserves. This funding will address deferred maintenance, help fund existing research and educational programs, provide student scholarships, and bolster existing endowments and establish new ones that will strengthen NRS programs. The fundraising campaign is a critical component to achieving a sustainable model for the NRS.

This fundraising effort is especially important because the NRS is one of only four Trustee Agencies in California legislatively designated under the California Environmental Quality Act (CEQA). The natural resources under NRS stewardship are “held in trust for the people of the State of California.” (CEQA Guidelines, Section 15386) With adequate investments, the NRS will be able to meet its CEQA Trustee Agency as well as its education and research responsibilities.

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 community benefit. At the Los Angeles campus and its Semel Institute, MHSA funding complements the American Recovery Act-funded Clinical Translational Research Center, as well as research, communication, education, and outreach programs that address disparity 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 junior 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

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 agricultural issues of California. ANR’s

research and public service programs are delivered through two organizational units: the Agricultural Experiment Station (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 of this document.

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, 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. The organization is responsive to the needs articulated in the Strategic Vision and represents a strong administrative and programmatic platform for the future. ANR continues to seek alternative funding sources to support its programs and to develop public-private partnerships.

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

Innovation and Climate Adaptation in Natural Resource Management. Rangelands in California make up 40 percent of the state's land mass. In addition to providing grazing opportunities for livestock, rangelands can be managed to protect water and biodiversity, control invasive pests, store soil carbon, and control fire. Several ongoing studies are examining the impacts of drought and climate change on these diverse rangeland services. Scientists are in the process of developing a database that provides site-specific management recommendations to enable ranchers to protect the range in response to climate change.

Innovation in Forest and Wildfire Management. Forested watersheds supply 80% of California's water, but new fire and water management strategies are needed to maintain and protect the forests and water supply. Ongoing research is examining the feasibility of a fire regime strategy that enables forests to be more resilient to fire and drought, while leading to increased surface water supply.

Innovation in Water Quality and Quantity. In response to the 2014 Sustainable Groundwater Management Act, which requires regional water management plans that address issues such as groundwater levels, ANR scientists are assessing the feasibility of groundwater banking, which diverts flood waters to fields where it can percolate into the soil and replenish aquifers. Research includes comprehensive soil assessment tools as well as a study of the operational, economic and legal feasibility of groundwater banking. This research will provide resources for irrigation districts to incorporate cropping systems that promote groundwater recharge into their groundwater management strategies.

Innovation in Market Expansion in Agriculture. ANR's Strategic Vision emphasizes innovation that expands the markets of existing commodities. Practices developed by UC ANR researchers in irrigation, nutrient delivery, and canopy management have led to the explosive growth of the California almond industry, which is now valued at close to $4 billion. In addition to almonds, the demand for berries has also been increasing. By incorporating strategies identified by UC ANR researchers, California blackberry growers are able to produce berries during a three month period when there is no other source of supply to the market.

Innovation in Food Supply Safety. Ongoing research continues to identify animal diseases that could impact the food supply and economy in California. For example, ANR Scientists recently created a method to identify bovine

respiratory disease (BRD) in calves and have developed preventative interventions to minimize the impact of BRD on cattle health, welfare, and productivity. Additionally, researchers are working to develop a vaccine for a tick-borne bacterial disease called Epizootic Bovine Abortion (EBA), which causes cows to abort their fetuses, costing ranchers approximately $3 million per year.

Innovation in Invasive Species Prevention and Control. To date, Zika virus has not been found in California mosquitos; however, one of the species that is capable of carrying and spreading the virus, *Aedes aegypti*, has been detected in several regions of the state. The UC Mosquito Lab at the UC Kearney Agricultural Research and Extension Center is focused on research projects to control this species. Other studies are identifying alternative control options such as using genetics to determine dispersal patterns, testing biological controls to reduce the ability of eggs to hatch, and working in communities to identify and reduce breeding grounds.

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 provided an additional $6 million in the University's budget to establish a multicampus research program focused on issues related to labor and employment. However, since that time, 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 to be 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.

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 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 the 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 real industry 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 in 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 or 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 and interface 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 its causes and consequences. 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; as well as 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 UC and institutions in Mexico to address common issues 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 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 expands 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.

As a partner to the UC-Mexico Initiative, the University of California Institute for Mexico and the United States (UC MEXUS), established in 1980, is a multicampus research institute based at the Riverside campus that serves all ten campuses. 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 context, in terms of 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 impact 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:

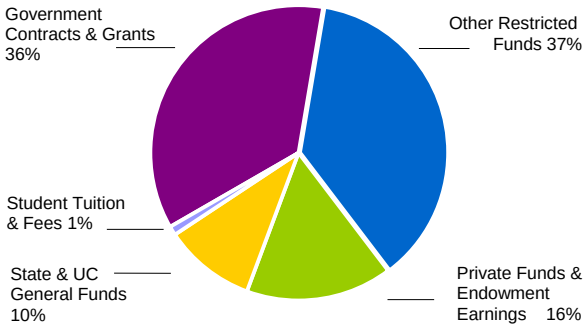
- Student Academic Preparation and Educational Partnerships,
- the California Subject Matter Project,
- COSMOS,
- Cooperative Extension, and
- the Charles R. Drew University of Medicine and Science.

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.

STUDENT ACADEMIC PREPARATION AND EDUCATIONAL PARTNERSHIPS

Student Academic Preparation and Educational Partnerships (SAPEP) programs seek to raise student achievement levels and to close achievement gaps among groups of students throughout the K-20 pipeline, tasks critical to keeping California's economy competitive. Fall 2014 data show that 52% of California public high school students enrolled at UC come from 18.5% of the state's high schools; schools with lower Academic Performance Index (API) scores tend to have lower college-going rates. With a focus on serving students who attend California's more academically challenged schools, in 2014-15 UC's 13 SAPEP programs reached students at more than 1,100 K-12 public schools and all 112 community colleges, 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.

Display VIII-1: 2015-16 Public Service Expenditures by Fund Source (Total: $589 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.

Through SAPEP programs, UC is reaching those students and schools in most need of assistance. The majority of high schools in California served by UC SAPEP programs are among the most challenged in the state, with more than half in the five lowest API deciles. UC works with schools located in communities where median family incomes are lower, as evidenced by the higher-than-average percentages of students at SAPEP-serviced schools who qualify to receive free or reduced-price meals. More precisely, 74% of the high schools served by SAPEP's three largest high school programs are those in which more than 60% of all students are eligible for free or reduced price meals. In contrast, 56% of all California public high schools enroll students in which more than 60% are eligible for free or reduced-price meals.

The impact of the University's SAPEP programs on educationally disadvantaged and underrepresented

[1] The most recent SAPEP data are for the 2014-15 year unless otherwise noted.

minority students is 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 2015, 11.8% of African-Americans and 12.2% of Chicano and Latino students in the incoming freshman class at UC campuses had been 12th-grade participants in UC's student academic preparation programs in 2014-15.

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 (Kindergarten through University) 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 aggregate data for school administrators to diagnose course completion obstacles and improve UC/CSU course requirement completion on a school-wide basis.

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 under-represented students 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.

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

[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

conducted by MPR Associates, Inc. presented evidence of the potential efficacy of TES, particularly for those schools 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 41% 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; information for parents, e.g., how to apply for financial aid and college options in California; and support for schools, such as assistance in establishing school structures that have a direct link to students' completion of college preparatory course requirements.

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 includes math and science coursework based on California Math and Science Standards. MESA also offers individualized academic planning, tutoring, math workshops, study groups, and career exploration services. Parent involvement workshops

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 the University's budget. These programs also were not 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 2014-15, programs leveraged the State and University investment of $24.6 million by securing an additional $30 million in support of K-20 efforts.

Policies and Practice with the Demands of College and Careers."

[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.

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 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*** (formerly *UC College Preparation)*, ***University-Community Engagement (UCE)***, and ***UC Links***.

UC's college access and preparation programs have been recognized nationally as models of best practice. Among specific program achievements are 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 2014-15, 76% of 12th-grade participants in EAOP, MESA, and Puente had completed 'a-g' coursework (compared to 42% of all California public high school graduates), and 71% took the SAT or ACT (compared to 47% of non-participants at the same schools); and
- Increased college attendance: Class of 2015 high school seniors from UC's three largest college access and preparation programs also enrolled at California public college at higher rates in Fall 2015 than their peers: EAOP (60%), MESA (66%), and Puente (64%), versus an estimated 41% of all California public high school graduates.

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 MESA CCP 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 rigorous 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 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 program achievements include:

- In 2014-15, over 1.6 million website visitors used ASSIST to view more than 20.3 million articulation agreements. ASSIST stores over 98,000 community college-to-UC articulation agreements and nearly 157,000 CCC-to-CSU agreements;
- UC continues to simplify the transfer process for prospective students and counselors by implementing tools like the online UC Transfer Admissions Planner to help keep more students 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
- More than 79% of Puente students are retained in community college for a year following participation in the program. The one-year persistence rate for all CCC students statewide is about 70%.

Graduate and Professional School Preparation. UC's SAPEP programs also prepare and encourage high-caliber 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 impacted 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 experience. ***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 (65%) 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 subject-specific professional development projects that provide rigorous training programs to enhance learning for all students. CSMP engages K-12 educators with 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 includes projects in nine subject areas: arts, history-social science, international studies, mathematics, physical education-health, reading and literature, science, world language, and writing. The network reaches teachers and students across California through more than 88 regional sites located at university and college campuses statewide.

During 2014, CSMP served over 40,000 teachers and school administrators at nearly 10,000 schools, more than half of which were low-performing (based on the state's Academic Performance Index). To understand the impact of its professional development 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 vast majority of participants ranked CSMP as either significantly better (69%) or somewhat better (16%) 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 (68%), and increase their professional collaboration with other teachers (54%).

State funding has remained at $5 million since 2003-04 and an additional $3.56 million is provided from the federal No Child Left Behind (NCLB) Act, Title II, Part A program. 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. The CSMP was originally authorized in 1998 and was reauthorized in 2002, 2007, and again in 2011. The 2011 bill (SB 612) extends authorization to June 30, 2017 and incorporates all nine projects into the legislation.

COSMOS

The California State Summer School for Mathematics and Science (COSMOS) provides an intensive academic experience for students who wish to learn advanced mathematics and science and prepare for careers in these areas. COSMOS is a month-long residential academic program for top 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, game

theory, and more. 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 2014, 733 students, drawn from an applicant pool of over 3,900 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. In the 2014-15 Budget Act, 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. 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. In 2012, AB 1663 amended the Education Code to set the program's tuition level for California residents at $2,810; COSMOS is permitted to increase this level up to 5% each year thereafter. For summer 2016, the tuition level for California residents attending COSMOS was $3,400.

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 to solve local issues in agriculture, natural resources, and human development. Over 300 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, and Riverside campuses, as well as at UC Merced, and 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, nine research and extension centers (RECs), located in a variety of ecosystems across the state, provide a core research and extension base.

The CE base budget is composed of federal land grant, county, systemwide assessment, and other funds. Through its partnerships and collaborations, CE is able to generate 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 continues to focus 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 explores opportunities for private-public partnerships to support CE programs, including funding of new, high-priority positions to complement the agreements already established. In 2015, ANR secured commitments for two UC Cooperative Extension Presidential Chair positions for Tree Nut Genetics and for Tree Nut Soil Science and Plant Water Relations. These first ever endowed chair positions for CE were made possible by President Napolitano's Presidential Match for Endowed Chairs program and the California Pistachio Research Board.

Following are just a few, recent examples of scores of CE programs working to address current, complex challenges facing California and inform policy:

Healthy Food Systems. In spring of 2015, ANR's Nutrition Policy Institute (NPI) conducted the first study of food insecurity among a sample of students from all 10 UC campuses. As a result of the study, UC was able to develop an action plan to increase food access for students. Additionally, NPI worked with 21 food banks across the US to develop nutrition policies. This research led NPI to scale up and extend training and technical assistance for food banks.

In addition to working to increase food security, Cooperative Extension also provides education and training to food producers on the safe handling of food. The UC Post Harvest Technology Research and Information Center provides multi-day workshops to food processors and suppliers that include practices to control microbes and reduce risk of contamination

Healthy Environments. Alfalfa and lettuce are two of the top ten agricultural commodities for California and have high water and nutrient demand. UC Cooperative Extension (UCCE) advisors evaluated irrigation and fertilizer application practices and developed recommendations on the most effective ways to meet new water quality standards and conserve water. Alfalfa and lettuce growers are adopting the advisors' recommendations, which could reduce phosphorus in surface waters by as much as 75 percent compared to standard irrigation practices.

UCCE also identifies solutions to reduce pollutant exposure in urban communities. Through a collaborative project in Sacramento, UCCE scientists provided residents with data on soil lead contamination along with maps and recommendations to mitigate lead levels and safely place gardens. The results can be used to make predictions at a city-wide scale and help identify the role that landscape plays in the distribution of lead.

Healthy Communities. ANR manages the innovative, research-based California 4-H Youth Development Program. In 2015-16, 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 California as a leader of science and technology. For example, girls in 4-H are two times more likely to plan to pursue science careers than girls who do not participate in the program. 4-H youth are also two times more likely to join after school science, engineering, and technology programs.

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 2015, Master Gardeners logged over 88,000 hours of continuing education to ensure they are prepared to share up-to-date information and best practices based on UC research. With almost 6,550

volunteers on its roster, the Master Gardener Program contributed close to 400,000 hours of local volunteer services in 2015-16, the equivalent of almost 200 full-time positions.

Healthy Californians. ANR is actively engaged in nutrition education and obesity prevention. UCCE advisors collaborated with county stakeholders to develop childhood obesity prevention policies for 14 pre-schools in Alameda County. The preliminary outcomes are positive as administrators, and teachers have begun to take action by increasing access to fresh fruits and vegetables, and promoting physical activity.

On a statewide level, ANR implements two main nutrition education programs. The UC Expanded Food and Nutrition Education Program (EFNEP) provides nutrition education to 9,400 limited-resource families in 24 California counties. The UC CalFresh Program focuses on youth, utilizing schools as the hub for community engagement. In 2015, the program was delivered in 361 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 2016-17, 117 medical students are enrolled across a four-year curriculum in the joint UCLA-CDU program. In 2016, 64% (18) of UCLA-CDU graduates matched in primary care residency programs.

Unfortunately, serious concerns involving patient care activities occurred at Los Angeles County's King/Drew Medical Center (KDMC), the primary teaching hospital for CDU, in the middle part of the last decade. 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. Plans for re-establishing residency training are in continuing discussion.

Consistent with provisional 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.

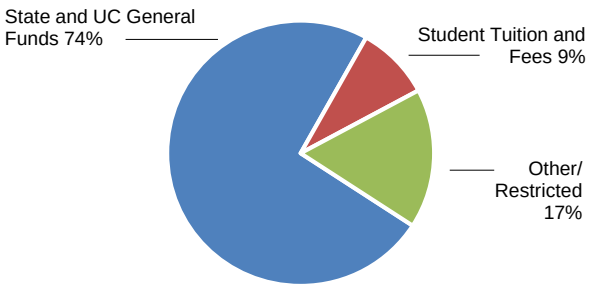
Rapid advances in the development and use of new technologies to create, publish, share, store, search for, and deliver information have transformed libraries, allowing campuses to provide access to far more information than they must physically possess and store. UC's growing digital information services 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 40 million print volumes, the collection is surpassed only by the Library of Congress.

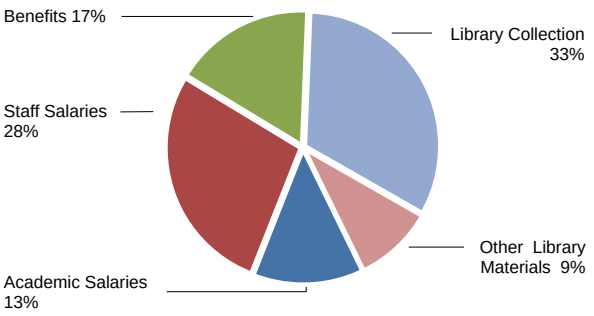
In 2015-16, the economic value of the physical collection was estimated at $1.1 billion and the special collections at $382 million, or 5.1% of UC's net capital assets. Nearly 2.1 million items were loaned by UC libraries in 2014-15, including over 155,000 intercampus library loans and copies. Use of the libraries' digital collections continues to expand, as more materials are available primarily or solely online. In 2015, nearly 40 million journal articles were downloaded within UC.

Display IX-1: 2015-16 Library Expenditures by Fund Source (Total: $283.7 Million)



Over 83% of the libraries' budget is derived from core funds. Endowment earnings, private gifts, and other sources provide additional support.

Display IX-2: 2015-16 Library Expenditures by Category (Total: $283.7 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 $284 million in 2015-16. Over 83% 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

2,000 employees, including professional librarians, IT professionals, and support staff, as well as an additional 2,000 student workers. Compensation and benefits represented 58% of library expenditures in 2015-16. Library materials, which include books, subscriptions, and licensing of digital materials, made up 33%.

Display IX-3: UC Libraries At-A-Glance, 2015-16

Number of Libraries	100+
Library Holdings	
Print volumes	40,000,000
Audio, video, and visual materials	19,722,623
Maps	2,107,390
Microcopy and microfilm	25,846,269
Average e-books on each campus	1,054,990
Digitized UC volumes in HathiTrust	3,787,648
Electronic-journals licensed collectively	71,442
Digitized items in campus collections	27,412,124
CDL/Shared print collection	410,113
Library Use	
Digital articles downloaded	39,843,840
Total library loans	1,821,026
Intercampus loans	154,779
Regional facility loans	110,255
Reference inquiries (total)	238,645
Virtual reference inquiries	63,869
Participants in instructional programs	138,018

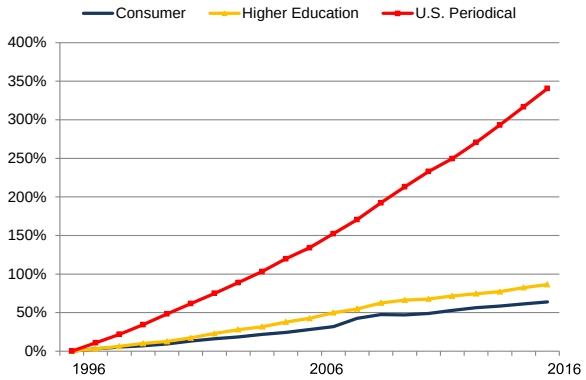
Note: Data reported by all 10 campuses and the CDL. Numbers rounded.

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 meet the impact of 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 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. 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 from which to plan.

Display IX-4: Consumer, Higher Education, and Periodical Price Increases



Over the last 20 years, the cost of periodicals has risen more than 298%, while the consumer price index has risen only 59% during the same period. This cost increase has not changed in the digital environment.

THE LIBRARY PROGRAM

The University libraries employ a systemwide strategy that emphasizes campus collaboration. In 2010, in response to funding shortfalls associated with the recent 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. The report recommended implementation of shared library services for an estimated $52 million in cost avoidances. Shared services, developed over 35 years, resulted in annual savings and cost avoidances of approximately

Display IX-5: Estimated Annual Savings from Library Innovations and Efficiencies (Dollars in Millions)	
Resource Sharing	$30.7
Regional Libraries Facilities	$23.4
California Digital Library	$66.4
Total	$120.5

$114 million. Savings as a result of library collaboration have since risen to $120.5 million.[1]

The Council of University Librarians (CoUL) recognizes the need to continue to plan for both general and specific issues facing libraries. The most recent planning document, "University of California Libraries, Systemwide Annual Plan and Priorities, FY 2016-2017," 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. Providing 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 have enjoyed 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 have taken advantage of their combined strengths and developed numerous programs that decrease costs and improve efficiency while increasing access to the distinct library collections offered at each UC campus.

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. The libraries are currently developing a systemwide plan for a 10-15 year expansion of the Northern RLF to ensure that the collections of the UC libraries can continue to support the needs of students and faculty. A significant capital investment will be needed before the end of the decade 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 enabling more on-campus shelving space to be re-assigned 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.

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.

[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.

In order to achieve even further economies of scale, the UC libraries are leading the **Western Regional Storage Trust (WEST)** initiative to establish a shared print journal archive with other institutions in the western region of the United States. The initiative will help libraries at UC and beyond make more efficient use of limited storage space.

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 73,000 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 630,000 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 leading the way in exploring new approaches to scholarly communication, including giving crucial support to the implementation of the new 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 pre-empts 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, covering every corner of the globe. The Presidential Policy on Open Access, which was issued on October 23rd, 2015, now covers all non-academic Senate employees of the UC System who author scholarly articles, previously not covered by the 2013 Academic Senate policy.

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.

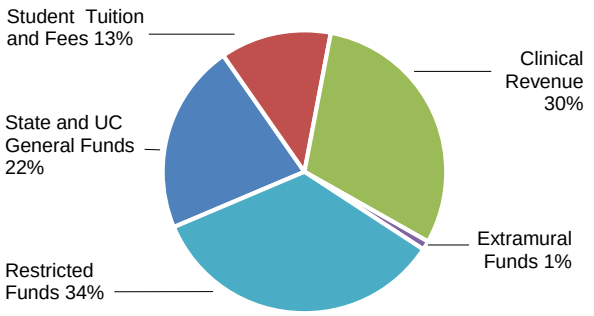
Academic Support

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 $1.6 billion in 2015-16. 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 revenue.

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 have occurred to these programs in recent years due to the latest fiscal crisis. Governor Brown's budget framework announced in his May Revision to the 2015-16 Budget, began a new era of reinvestment in the University. The budget framework will provide much needed financial stability and predictability in its long-term fiscal outlook and a solid foundation from which to plan.

Display X-1: 2015-16 Other Academic Support Expenditures by Fund Source (Total: $1.6 Billion)



Expenditures totaled $1.6 billion in 2015-16. 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. 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 laboratory 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 17 health professional schools and 12 hospitals, collectively referred to as UC Health.

UCLA and UCSF medical centers ranked fifth and seventh in the nation, respectively, and all five of UC's medical centers rank among California's top ten hospitals, according to U.S. News & World Report's 2016-17 survey. UC Davis, UCLA, UC San Diego, and UCSF also ranked No. 1 in their metropolitan areas, while UC Irvine was ranked best in Orange County (fifth 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 in the millions.

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.

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.

Display XI-1: UC Medical Centers[1] At-A-Glance, 2015-16

The University's five academic medical centers constitute the fourth largest healthcare system in California.

Licensed acute care inpatient bed capacity	3,666
Patient days	1,015,946
Outpatient clinic visits	4,862,563
GME residents trained	4,604
Total operating revenue	$10.0 billion

[1]UCSF Medical Center financial statements include Children's Hospital & Research Center Oakland (CHRCO), a blended component unit of the University of California.

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 about twice 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. Three of the medical centers have historically served a disproportionately high percentage of Medi-Cal patients, as well as uninsured patients, whose care may be

covered only partially by county indigent care programs.

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 2015-16, 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.

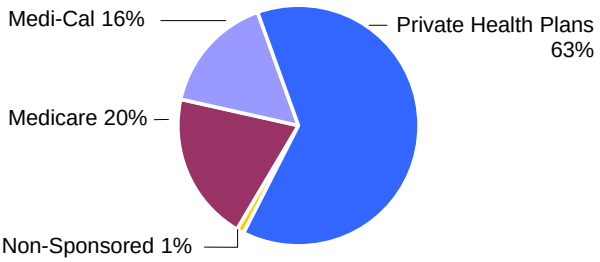
Medicare

Patient care reimbursements from Medicare, the federal governmental health insurance system for eligible elderly and disabled persons, constituted 20%, or $2.0 billion, of medical center revenues in 2015-16. 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.

Display XI-2: 2015-16 UC Medical Center[1] Revenue by Source



[1] UCSF Medical Center financial statements include Children's Hospital & Research Center Oakland (CHRCO), a blended component unit of the University of California.

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. Medicaid/Medi-Cal provided 15%, or $1.5 billion, of medical center revenue in 2015-16. 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.

Current Medi-Cal Waiver. The Centers for Medicare and Medicaid Services (CMS) grants waivers to some states, allowing them to set up a modified Medicaid financing system through Section 1115 of the Social Security Act. On December 30, 2015, 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. The State of California submitted its official acceptance of the CMS Standard Terms and Conditions (STCs) and expenditure authorities on January 28, 2016.

The California Medi-Cal 2020 demonstration waiver includes:

- Whole Person Care pilots to coordinate health, behavioral health, and social services to the most vulnerable patient populations.
- The Global Payment Program (GPP), a value-based payment program to increase coordination of and access to primary, preventative, and other "high value" services. GPP is funded by combining the federal Disproportionate Share Hospital (DSH) funding for DPHs and federal Safety Net Care Pool funding to treat the remaining uninsured. The University opted not to participate in this particular program.
- 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.

Additionally, the Waiver includes $750 million over five years for a Dental Transformation Initiative, and a number of independent assessments of network adequacy, access to care, uncompensated care, and hospital financing.

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.

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 $6.3 billion in 2015-16. 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.

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 covered under the county's adult indigent program. Counties use local tax dollars from their general fund to subsidize healthcare for the indigent. The downturn in the state's economy also affected local county revenues, creating increased competition among local services for reduced funds and severely constraining the ability of local governments to adequately fund healthcare services to the uninsured. Measures enacted to mitigate the impacts have not provided full relief. In 2015-16, total county funding represented $27 million, or less than 1% of total medical center revenue.

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:

- 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;
- implementing community preparedness activities, such as establishing procedures for responding to epidemics; and
- compliance with government regulations, such as AB 394, which established licensed nurse-to-patient ratio requirements.

Despite these economic issues, the UC medical centers must generate sufficient funds to meet their teaching mission and support their schools of medicine (approximately $600 million per year). 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. In 2014-15, UC Health Leveraging Scale for Value Initiative (LSVI) saved roughly $200 million. For 2015-16, UC Health LSFV Initiative will collaborate as a system to save approximately $250 million while also looking for ways to enhance revenue.

UNIVERSITY OF CALIFORNIA CARE

University of California Care (UC Care) is a self-funded, Affordable Care Act (ACA) compliant health program designed as an option for UC's approximately 250,000 employees and their dependents. The program is structured based on tiered levels of a narrow network of providers. Tier 1 is predominately the UC Health System providers located at the five academic medical campuses. In instances where services are not available at a nearby UC facility or medical group, employees will be able to access other providers for covered services in a preferred provider network. Over the long term, the UC Care model will provide the University of California with the ability to more proactively manage healthcare costs and aim for better population health. Currently, UC Care has enrolled approximately 46,000 UC employees, dependents, and retirees.

HEALTHCARE REFORM

The enactment of healthcare reform in March 2010, through the Patient Protection and Affordable Care Act and its accompanying reconciliation bill, the Health Care and Education Reconciliation Act, is a historic opportunity to improve the nation's healthcare delivery system by expanding health insurance coverage by the year 2019 to 32 million Americans who are currently uninsured. Healthcare reform expands Medicaid coverage, offers coverage to adults not currently covered by safety net programs for the uninsured, provides broader access to insurance through the establishment of insurance exchanges, and includes many other provisions that expand coverage.

Disproportionate Share Hospital Payments. UC medical centers and other safety net hospitals that provide care to a large number of low-income individuals stand to receive lower federal supplements through the federal Disproportionate Share Hospital (DSH) payments, which serve to compensate hospitals for this type of more costly care, and to help provide low-income individuals access to treatment. The Affordable Care Act calls for an additional 32 million U.S. citizens to receive health insurance, either through enrollment in the State Medicaid program or through participation in the State Health Insurance Exchange. In order to expand health insurance coverage to another 32 million people, the health reform law reduces DSH payments to California hospitals, including UC teaching hospitals.

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 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 is well-positioned to be 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.

UC Health as a Safety Net. UC Health's five academic medical centers are a major part of California's hospital safety net and provide complex care to a diverse population that includes many low-income patients. Healthcare costs are significantly higher in areas of poverty, where patients have less access to care and tend to be sicker when they arrive at hospitals, requiring more extensive, and thus more expensive, care. Entities must consider that UC Health's costs for healthcare services delivery are higher than non-safety net institutions.

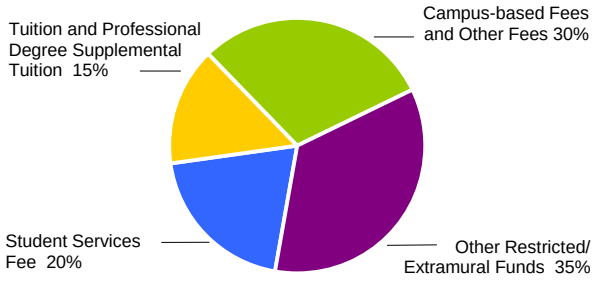
Student Services

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 entirely from non-State funds. Total expenditures for student services in 2015-16 were $928 million, most of which were generated from student fees. The University features a variety of student services programs. Elements of these programs are described below.

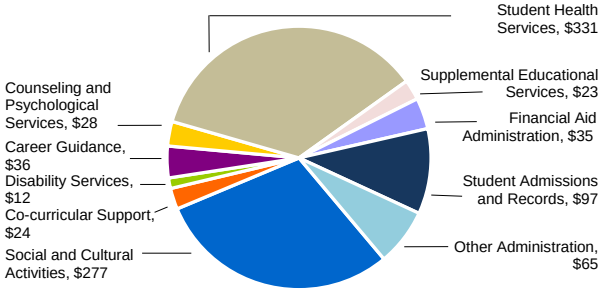
- **Campus admissions and registrar operations** include the processing of applications for admission, course registration, scheduling of courses, maintaining and updating student academic records, preparing of diplomas, and reporting of statistics.
- **Campus financial aid offices** counsel students 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.
- **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.

Display XII-1: 2015-16 Student Services Expenditures by Fund Source (Total: $928 million)



Student fee revenue, including campus-based fee revenue, provides 65% of the funding for student services. Total includes administrative activities.

Display XII-2: 2015-16 Student Services Expenditures by Category* (Total: $928 million)



In 2015-16, 93% of student services expenditures were for non-administrative activities in counseling, cultural and social activities, and student health services.
*Dollars in millions.

- **Co-curricular support and engagement** includes services for student veterans, undocumented students, LGBTQ students, cross-cultural centers, leadership programs, and student government.
- **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 most 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 five-year 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 third year in the five-year plan, the Student Services Fee will increase by 5%, or $54 per student, with 50% of the net revenue (after return to aid) being designated for mental health staffing.

STUDENT MENTAL HEALTH SERVICES

Issues concerning student mental health continue to see heightened national attention, with colleges and universities reporting unprecedented numbers of students in psychological distress. The University of California has not been immune to this trend, as campus counseling centers have documented a 58% increase in the utilization of services over the past nine years.

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 targeted 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 lessened, 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 unit 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 and discrimination for 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. This contract has since ended, and 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. Over the past nine years, Counseling Centers have experienced a 58% increase in students seeking services, and using projections from the first quarter of 2016-17, UC is on pace to see that jump to a 99.8% increase over the past 10 years. Without the statewide grant, prevention dollars have been scarce, as all new funding has been focused towards direct service and crisis response.

As noted above, the budget framework with the Governor allows for a 5% increase each year for five years, beginning in 2015-16, to help address and mitigate the 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 increase, approximately 75% of the 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 12 days in 2016-17. On average, 74% of students are now seen within 14 days as opposed to 64% in 2014-15. UC continues to work to reduce wait times, with the aspiration of seeing all students within ten 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 SHIP employs a risk sharing/pooled renewal methodology that lowers renewal volatility by gaining the benefit of a larger risk pool across all of the UC SHIP campuses to help lower annual premium increases for each individual campus; and a robust reporting system, whereby monthly financial reports and clinical dashboards are distributed to campuses. The program launched a mobile app, where students can use their smart phone to pull up their Medical ID card and look up their medical coverage offered both at Student Health on campus and in the Anthem network.

UC SHIP offers medical, pharmacy, dental and vision care benefits, and mental health and substance use disorder services for our undergraduate and graduate students.

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 2016-17 academic year. 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 continues to offer dependent coverage in 2016-17.

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.

PRESIDENTIAL INITIATIVES

President Napolitano continues her commitment to addressing critical student challenges and needs via the following student-focused initiatives:

- In 2013, the President announced an Initiative on Undocumented Students that provided campuses with $5 million in one-time funding for student financial aid and student support services for undocumented 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 while handling 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. During the 2015-16 academic year, UCOP supported a student-led undocumented student conference that built upon the 2015 National Summit discussions. Of the estimated 3,700 undocumented students currently enrolled at UC, 95% are undergraduates.
- 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, a systemwide UC Veterans Career Success Forum was held in April 2016. 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, created the ability for students to indicate a preferred name, and issued guidelines for implementing gender inclusive facilities.
- The President's Task Force on Preventing and Responding to Sexual Violence and Sexual Assault was formed in July 2014 with the goal for UC to be 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.
  - 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 process in which a student filing a complaint, and a student responding to the complaint can be heard, offer witnesses and evidence, and appeal.

FUTURE NEEDS

In prior years, the University had 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 the five-year budget plan may be used to address these 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.

Institutional Support

Institutional support services provide the administrative infrastructure for the University's operations. Grouped into five broad categories, institutional support activities include:

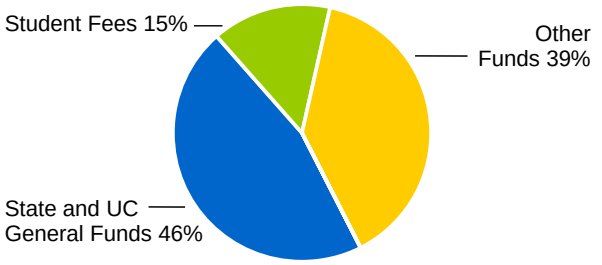
- **Executive Management** — offices of the president, vice presidents, chancellors, vice chancellors, Regents' officers, the Academic Senate, and planning and budget;
- **Fiscal Operations** — accounting, audit, contract and grant administration, and insurance management;
- **General Administrative 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.

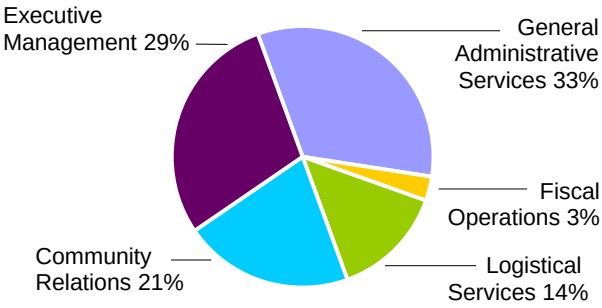
Since the early 1990s, as each recession has occurred, legislative intent language and the shared desire of the University and the State to protect core academic programs has meant that institutional support has often been targeted for additional cuts over the years:

Display XIII-1: 2015-16 Institutional Support Expenditures by Fund Source



Core funds provide 61% of institutional support funding. Significant other sources include private funds, endowment earnings, and indirect cost recovery for contract and grant administration.

Display XIII-2: 2015-16 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

The 2014-15 budget approved for the University of California Office of the President (UCOP) reflects a new funding model and a clarified vision of the appropriate role of central programs in support of the ten campuses. In this new vision, UCOP performs the following functions:

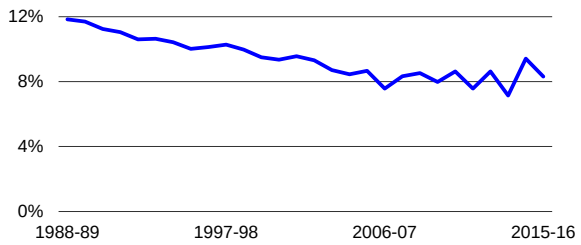
Central and administrative services, which UCOP provides to the entire UC system, including the campuses, the medical centers, and the Lawrence Berkeley National Laboratory, in order to avoid redundancy of functions at each campus. These include:

- Governance and administrative services, as performed by officers reporting directly to the Board of the Regents (the Secretary and Chief of Staff, the Chief Compliance and Audit Officer, the Treasurer, and the General Counsel of the Regents), the Academic Senate, and the immediate offices of senior administrative leadership.
- Central service functions, such as systemwide budget management and external relations, management of the retirement and benefit systems, and the financial management of the University, including 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 initiatives, which are administered at and/or funded from the center to the benefit of the entire UC system. These initiatives 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.

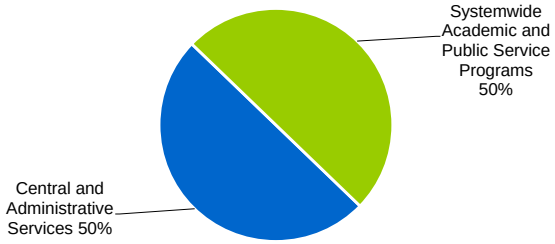
As shown in Display XIII-4, half of the UCOP and Universitywide Academic Programs budget supports Systemwide Initiatives. The total central budget represents about 2.5% of the overall University of California budget.

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% in 2015-16.

Display XIII-4: 2016-17 UCOP Budget by Category



The total UCOP budget for 2015-16 is $685.9 million, $370.5 million of which is unrestricted.

UCOP remains critical to the success of the UC system. A well-operated central administration reduces redundancy across the system and helps strategically position the campuses to excel.

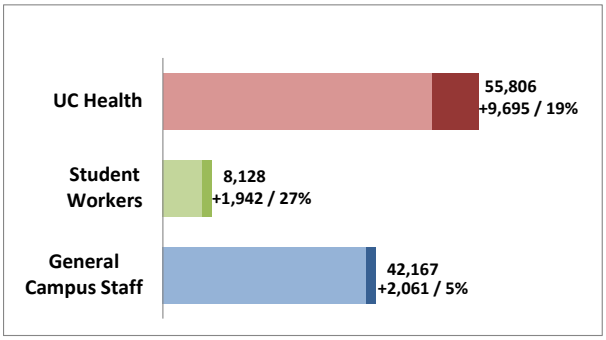
EMPLOYEE TRENDS AT UC

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 the self-supporting enterprises that provide services for a growing population of students on our campuses and patients in our medical centers. Administrative staff, which is what most are concerned about when comparing these data, has grown very little overall and has actually declined in programs that are supported from core funds.

An analysis of employee trends between October 2007 and October 2015 helps identify where personnel growth has occurred.

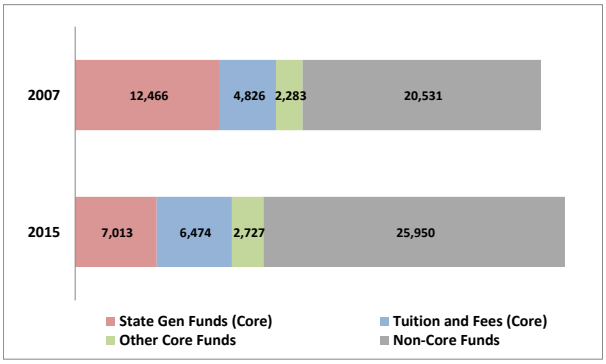
- The majority of staff growth (71% of the increase) is UC Health staff. This is due to increasing demand for health care, most notably growth in Medi-Cal and other government programs. UC Health staff are primarily supported by non-core funds (97%). The portion of health sciences staff supported by State General funds has decreased from 6% to less than 3%.
- General campus student workers account for 14% of the increase, which is largely due to the enrollment growth of 36,000 over this period (an 18% increase). 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 18% between 2007 and 2015, general campus staff increased by only 5% during that period. General campus staff supported by State General Funds has declined by 5,453 FTE and was only partially offset by an increase in staff supported by other core funds. At the same time, there was growth in staff supported by non-core funds of 5,420 FTE. See Displays XIII-5 and XIII-6 for details.

Display XIII-5: UC Staff FTE, October 2007 and 2015



Although enrollment increased by 18%, general campus staff has only increased by 5%.

Display XIII-6: General Campus Staff by Fund



Over this same period, Senior Management Group (SMG) staff has decreased by 6%. These employees represent less than 1% of general campus staff. Managers and Senior Professionals (MSP) staff increased by 32% with over 66% of the growth coming from Technical/Senior Professional staff. This is a reflection of the professionalization of UC's workforce similar to changes seen in the wider labor market over the last several years.

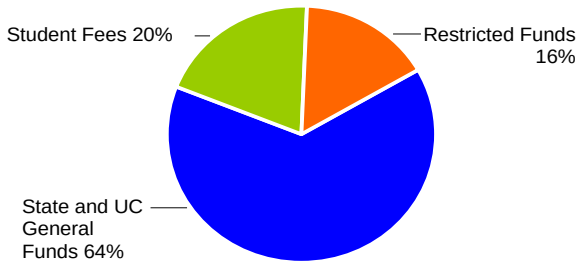
Operation and Maintenance of Plant

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 133 million gross square feet of space in over 5,970 buildings, 1,900 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. Over 65.3 million square feet (approximately 48%) 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 $636 million in 2015-16.

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.

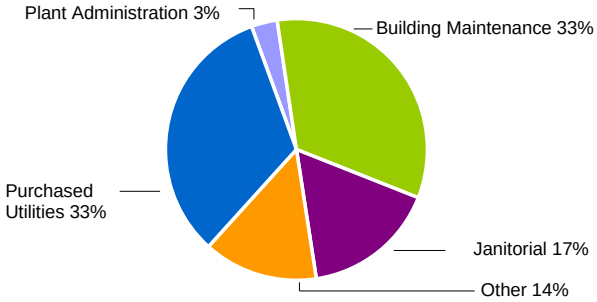
Between 2007-08 and 2011-12, the University was compelled to cut funding for the operation and maintenance of facilities to help protect core academic programs. While some of this reduction was mitigated due to increased efficiency – which is good for the fiscal health of the University – much of the reduction resulted from negative

Display XIV-1: 2015-16 OMP Expenditures by Fund Source (Total: $636.2 Million)



The bulk of OMP expenditures is supported by core funds (State and UC General Funds and student fees funds).

Display XIV-2: 2015-16 OMP Expenditures by Category (Total: $636.2 Million)



Purchased utilities for UC facilities account for approximately one-third of OMP expenditures. Building maintenance accounts for another third.

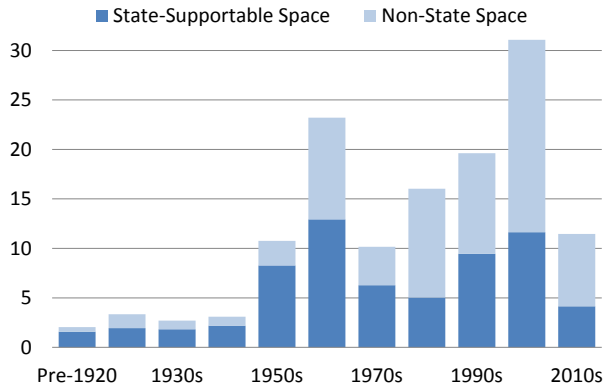
austerity measures, such as cuts in building maintenance activities, scaled-back or eliminated preventive maintenance programs, and reduced custodial and grounds maintenance services.

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 60% of the University's State-eligible space is more than 30 years old, with 42% of that space built between 1950 and 1980, 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-7 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 full marginal cost funding has not been provided since 2010-11.

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.

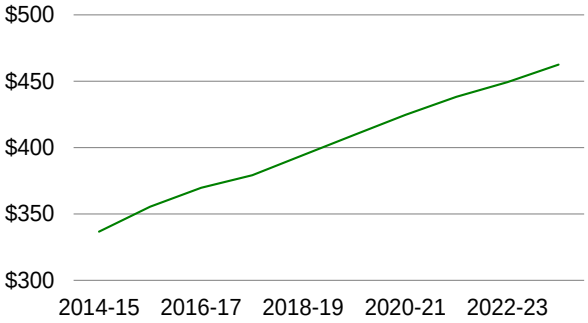
The University is now operating about 4 million square feet of core program space that is eligible for State support but never funded by the State, representing approximately $40 million of support that the State is not providing.

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

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.

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.

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 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 extremely 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.

Nevertheless, price swings in energy commodity costs have tempered in recent years due in part to the abundance of natural gas made available through hydraulic fracking technology. Although energy commodity prices seem to have stabilized, longer-term forecasts identify a number of factors that will drive higher energy costs in the next few years. For fiscal year 2016-17, the University projects an increase in purchased utilities costs of $5 million. This represents an increase in natural gas transportation cost and a modest increase for electricity and natural gas commodity.

Key Cost Drivers

Pressures in the electricity supply chain are expected to increase costs significantly through 2050 due to "green" regulations, such as the implementation of the carbon emissions market ("cap and trade") under California state law and a new requirement that half of the state's energy generation be from renewable sources by 2030. Moreover, the increasing penetration of renewable energy, both distributed and centralized, could require new and upgraded distribution and transmission infrastructure to facilitate delivery and maintain reliability.

In the last several years, softening natural gas prices have mitigated upward price pressures on overall purchased utility cost. Market price for the commodity portion of natural gas rose in 2016 compared to 2015 and is now projected to be $3.20 per million Btu for the 2016-17 fiscal year; however, prices are expected to break the $3.50 threshold this winter (2016). Since many UC campuses have signed long-term contracts through 2020, this projected cost rise is mitigated for UC.

PG&E is seeing a transportation rate increase this coming year; an unknown is SoCalGas (the utility that delivers gas for the campuses in Southern California). The SoCalGas Aliso Canyon storage facility has recently been in the news for a large well leak, resulting operational and capital issues raised by the leak and the temporary shutdown of the gas storage capacity could affect future SoCalGar rates. The extent of this effect is unknown at this time.

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 energyin 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.

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 GHG emissions. Facilities subject to the cap must obtain permits (California Carbon Allowances) through State run auctions or secondary markets equivalent to their GHG emissions.

In April 2014, the California Air Resources Board approved amendments to the cap and trade regulations, to allocate to

the University the majority of the allowances it needs to comply with the regulations through 2020. Six UC campuses are obligated to participate in the cap and trade program (because their emissions are in excess of 25,000 metric tons of carbon dioxide equivalent per year). Three additional campuses have voluntarily opted into the 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 if their emission levels continue to increase. Collectively, the campuses are required to surrender approximately 700,000 allowances in the first year, one for each metric ton of carbon dioxide equivalent emitted. As long as campus emissions do not increase, UC's direct cost burden would be minimal, though campuses would still experience cost increases in their electric rates and some natural gas rates as suppliers pass costs to customers.

Renewables Portfolio Standard

A second impact of green energy regulation is that all state utilities and electric service providers must meet a 50% renewable energy content for all electricity deliveries by 2030. In addition to constructing renewable energy generating facilities, the transmission delivery system may require upgrades to accommodate these remotely located and intermittent generation sources. Furthermore, State goals may include more small distributed generation sources in the energy supply portfolio. These added sources drive the need for more sophisticated but costly local distribution systems, generally referred to as Smart Grids. The major utilities estimate that rates will increase by more than 16% over current prices by 2020 to finance these infrastructure improvements. In the previous California legislative session, SB 350 passed and was signed into law. SB 350, among other items, increased the "33% by 2020" renewable energy content standard to "50% by 2030."

Carbon Neutrality Initiative

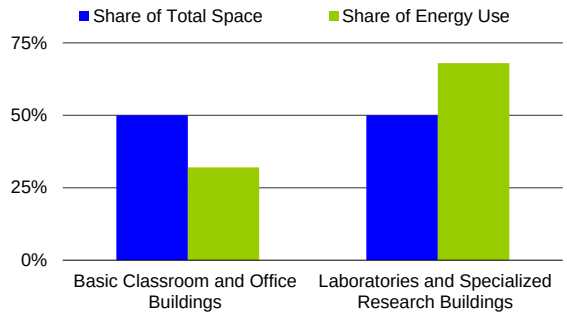
At the November 2013 Regents meeting, President Napolitano announced as part of her suite of initiatives that the University would be the first major research university to achieve climate neutrality, setting a target date of 2025. To reach this goal, the University needs to transform the fundamental profile of its energy sources. This initiative includes four strategies that will enable the University to meet its carbon neutrality goals: Campus Energy Efficiency and 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 President's call for UC to become the first research university to achieve carbon neutrality by 2025.

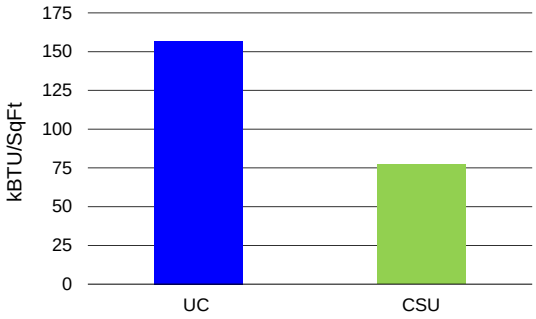
The University has made remarkable progress in reversing the growth of greenhouse gas emissions. Campuses continue to implement energy efficiency projects that will create additional energy demand reduction and cost savings, while supporting their progress toward carbon neutrality. It is important to 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. Moreover, as compared on a system level with California State University (CSU), UC's building stock is more than two times more energy intense per square foot, as shown in Display XIV-6. Essentially all campuses will need large-scale, off-site carbon free energy solutions to achieve the State's 2020 goal and the University's 2025 goal.

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.

Display XIV-6: System Energy Intensity (2011) – University of California and California State University Systems



As an overall system, the University of California's building stock is more than twice as energy intense per square foot as the California State University's building stock.

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 May 2016 indicate that the partnership completed more than 800 energy efficiency projects that generated $80 million in incentive payments from the utilities to offset project costs, and delivered over $166 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 is expected to do so by summer of 2017.

Natural Gas Procurement

Campuses manage natural gas costs by developing a portfolio of longer-term procurement contracts, many with the State pool through the Department of General Services. Driven by the University's Policy on Sustainability Practices, the President's carbon neutrality initiative, and the desire to take more active control of its energy future during an ever-changing energy regulatory landscape, the University has

been exploring alternatives to carbon-based natural gas to fuel its cogeneration facilities, boiler plants, and fleet vehicles. Natural gas purchases currently represent approximately 70% of UC's carbon footprint. Biogas is a carbon-free substitute for natural gas and procurement thereof is crucial to the UC system if its carbon neutrality goals are to be met.

Given UC's access to low-cost borrowing and its high demand for a carbon-free alternative to natural gas, the University is formulating a program that would result in ownership of biomethane production facilities or procurement of biomethane. The University has executed Master Development Agreements with internationally known entities that bring the needed expertise to identify projects and design, permit, construct, and operate facilities that will enable the University to furnish biomethane at a competitive price to the campuses. In addition to directly developing biogas projects, the University will also purchase biogas from third-party producers, if and when opportunities arise.

Display XIV-7: History of Programmatic Funding for OMP, Capital Renewal, and Deferred Maintenance

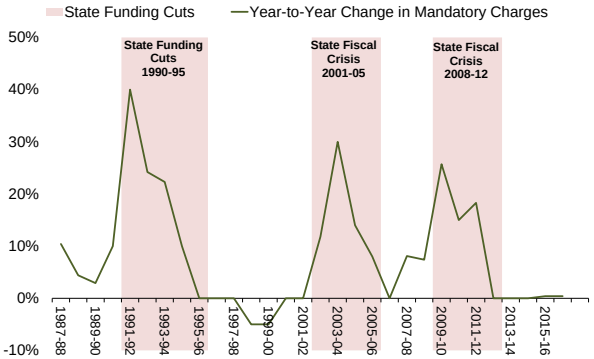
Pre-1994-95	The State provided nearly $20 million annually for deferred maintenance.
1994-95 to 1997-98	The State provided $8 to $25 million annually.
1998-99 to 2001-02	The State provided $7.1 million each year. UC invested $289 million over four years for capital renewal and deferred maintenance.
1999-00	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.

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 large, sustained shortfalls in State support due to economic downturns. Since 1990-91, the State's inflation-adjusted contribution per UC student has declined by 63%. Consequently, the composition of 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 45% of the cost of education, as noted in the *Sources of University Funds* chapter of this document. In 2015-16, tuition and fees provided approximately $4.045 billion[1] to supplement State funding and other sources that help support basic operations.

Increases in mandatory systemwide charges since 1990-91 have primarily been a direct result of insufficient State support tied to economic downturns. While tuition and fee levels rose to help backfill reductions in State funding, they have not made up the entire loss. Indeed, tuition and fee increases mitigated a little less than 40% of the budget shortfall created by the fiscal crisis that began in 2008-09. 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. This chronic volatility can engender frustration and anxiety among UC students and families. In addition, it creates tremendous long-range planning challenges for campuses and the University as a whole.

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: 2016-17 University of California and Public Comparison Institution Fees

	Undergraduate		Graduate	
	Resident	Nonresident	Resident	Nonresident
Public Comparison Institutions				
SUNY Buffalo	$9,574	$26,814	$13,347	$24,687
Illinois				
Lowest	$14,856	$29,238	$15,288	$29,524
Highest	$20,062	$40,804		
Average	$17,459	$35,021		
Michigan				
Lowest	$14,238	$45,246	$21,630	$43,510
Highest	$19,698	$54,138		
Average	$16,968	$49,692		
Virginia				
Lowest	$13,722	$45,066	$17,688	$28,512
Highest	$19,734	$50,158		
Average	$16,728	$47,612		
UC	$13,551	$40,233	$13,095	$28,197

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.

Within this context, it is important to note that UC's average tuition and fees for state residents remain low relative to the 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.

[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.

Furthermore, as described in the *Student Financial Aid* chapter, more than one-half of all UC 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 at all 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 sources) and the comparatively low student loan indebtedness of UC students upon graduation.

TUITION AND FEES IN THE BUDGET FRAMEWORK WITH THE GOVERNOR

The University and the Governor agreed to a long-term funding framework that renews State investment through the 2018-19 and provides increased financial stability and a foundation from which to plan. Under the framework, Tuition is to remain unchanged through 2016-17; the sixth consecutive year of Tuition remaining unchanged. The framework calls for modest and predictable Tuition increases after 2016-17, with Tuition increases beginning in 2017-18 pegged generally to the rate of inflation. The Student Services Fee will annually increase by five percent through 2019-20 beginning in 2015-16, 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 five 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;
- **Professional Degree Supplemental Tuition**, paid by students enrolled in a number of 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 the cost of education; and
- **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.

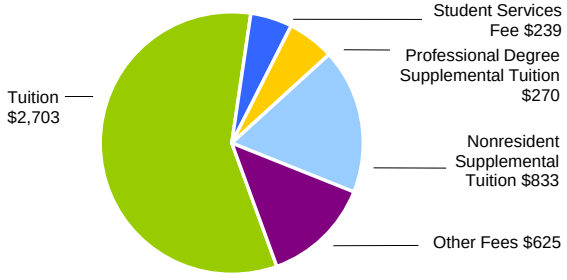
Display XV-3 lists the level of each charge in 2016-17. Their respective contributions to the University's core operating budget and financial aid in 2015-16 are shown in Display XV-4. Each type of charge is described in greater detail below.

Display XV-3: 2016-17 Student Tuition and Fee Levels

Student Services Fee	$1,074
Tuition	$11,220
Professional Degree Supplemental Tuition	$4,410-$42,500
Nonresident Supplemental Tuition	
Undergraduate	$26,682
Graduate Academic	$15,102
Graduate Professional	$12,245
Campus-based Fees*	
Undergraduate	$626-$1,779
Graduate	$212-$1,215

* Waivable health insurance not included.

Display XV-4: 2015-16 Student Tuition and Fee Revenue for Operations (Dollars in Millions) (Total: $4.045 Billion)



In 2015-16, student tuition and fees generated $4.045 billion to support the University's core operating budget and student financial aid. Campus-based/other fees totaling $625 million support specific programs outside the core budget, such as student government and transportation.

[2] Although included in enrollment counts as students, medical and other health sciences residents are not assessed student charges.

Tuition

Tuition, formerly called the Educational Fee, was first established in 1970. 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 2015-16, Tuition generated $2.7 billion for operations.

The Regents set Tuition levels annually as described in 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 2017-18 at a rate pegged to inflation, regardless of student level, residency, and program. The 2017-18 budget plan includes a proposed Tuition increase of $282 to $11,502 to help support the operating budget; a portion of the revenue from the increase will be set aside for UC's financial aid – fully subsidizing the increase assessed to low-income students. The increase will be presented to the Regents for approval in January 2017.

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 2015-16, $239 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 Student Services Fee through 2019-20, with revenue from half of the increase, less return-to-aid, directed to support student mental health programs. In 2016-17, the Student Services Fee is $1,074 for all students. Under the 2017-18 budget plan, the Student Services Fee will increase by 5%, or $54; as noted earlier, one-half of the revenue, net of financial aid, will be directed toward increasing student mental health services (discussed in more detail in the *Student Services* chapter of this document).

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 levels during 2016-17 range from $4,410 to $42,500 depending on the program, campus, and student residency. In 2015-16, these charges generated $270 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

PROGRAMS CHARGING PROFESSIONAL DEGREE SUPPLEMENTAL TUITION

In 2016-17, Professional Degree Supplemental Tuition is charged to students enrolled in graduate professional degree programs in applied economics and finance; architecture; art; biomedical and translational science; biotechnology management; business; dental hygiene; dentistry; development practice; educational leadership; engineering; engineering management; environmental design; environmental science and engineering; games and playable media; genetic counseling; health informatics; information management; international relations and Pacific studies; journalism; law; medicine; nursing; optometry; pharmacy; physical therapy; preventive veterinary medicine; product development; public health; public policy; social welfare; statistics; teacher education; technology and information management; technology management; theater, film, and television; translational medicine; urban planning; and veterinary medicine.

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 increases in Professional Degree Supplemental Tuition has been critical to these programs' efforts to regain and maintain excellence despite budget cuts.

The Regents' Policy on Professional Degree Supplemental Tuition[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 professional school program. Multi-year planning with regard to Professional Degree Supplemental Tuition is a vital and fiscally prudent strategy that:

- provides a more stable planning environment for the 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 May 2016 meeting, effective academic year 2016-17, the Regents established Professional Degree Supplemental Tuition (PDST) for two new programs. Also effective academic year 2016-17, the President approved increases up to 5% for existing programs, consistent with the authority granted by the Regents in 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. Accordingly, the President will review proposed increases of up to five percent in PDST programs for 2017-18, with the exception of the University's four law programs whose PDST levels, under the framework, are to remain unchanged through 2018-19. PDST increases approved by the President will be reported to the Regents. Proposals for new PDSTs will be brought to the Regents for approval at a later meeting as well.

The Provost has initiated a review and revision of the Regents' policy on Professional Degree Supplemental Tuition for approval by the Regents at a later meeting. Students, faculty, and campus leadership will be consulted on revisions to the Policy. Proposed revisions to the Policy will not impact the review and approval of PDST levels for 2017-18.

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

[3] http://regents.universityofcalifornia.edu/governance/policies/3103.html.

STATE LAW REGARDING NONRESIDENT TUITION

Section 68052 of the California Education Code directs California's public institutions of higher education to address 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.

international students and domestic students from other states, generated $833 million in 2015-16 for operations.

The California Education Code provides direction to UC about setting Nonresident Supplemental Tuition levels. Nonresident tuition levels in 2016-17 vary by student level and program: $26,682 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 5%, or $1,332, of Nonresident Supplemental Tuition levels in 2017-18 for undergraduates is subject to approval by the Regents in early 2017. Projected undergraduate Nonresident Supplemental Tuition revenue will total over $1.05 billion in 2017-18.

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).

In recent years, Nonresident Supplemental Tuition paid by undergraduate students and students in graduate professional degree programs has played an increasingly important role in helping 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. Nevertheless, 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.

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 2016-17 range from $212 at San Francisco (graduates) to $1,728 at Santa Barbara (undergraduates); in 2016-17, average campus-based fees are $1,257 for undergraduates and $801 for graduates.[5] Generally students must vote to establish or increase

[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.

Display XV-5: 2016-17 Campus-based Fee Levels

Campus	Undergraduate	Graduate
Berkeley	$1,215	$1,215
Davis	$1,752	$943
Irvine	$1,066	$770
Los Angeles	$626	$389
Merced	$968	$637
Riverside	$1,287	$1,045
San Diego	$1,351	$791
San Francisco	N/A	$212
Santa Barbara	$1,779	$955
Santa Cruz	$1,245	$1,092
Average	$1,257	$801

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 2017-18 will not be known until student elections have been held in Spring 2017.

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 2015-16, approximately $31 million in Course Materials and Services Fees were expended 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 (a widely held view at the time), 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

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 increased by 8% 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 for UC's Nursing programs increased by 8% 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 stability and predictability to UC's systemwide charges.
2015-16 to 2018-19	Under the long-term funding framework, Tuition will not increase in 2015-16 or 2016-17, extending the Tuition freeze to six consecutive years; increases in Tuition in 2017-18 and 2018-19 will generally be pegged to inflation. In November 2014, the Regents approved annual increases of five percent to Student Services Fee through 2019-20. Professional Degree Supplemental Tuition and undergraduate Nonresident Supplemental Tuition are expected to increase moderately during this period.

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, during the early 2000s, and more recently – tuition and fees increased dramatically in response to significant reductions in State funding, although these increases only partially have backfilled the 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 impacted 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, at 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 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 2018-19.

Student Financial Aid

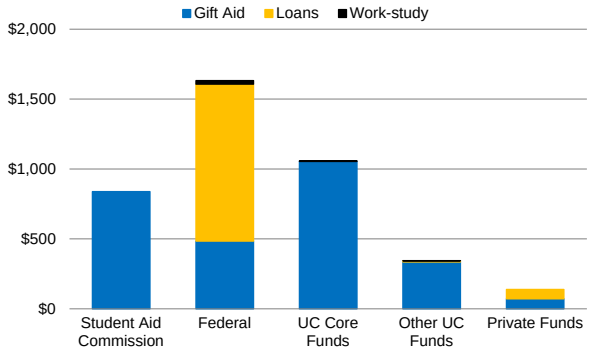
Guided by the financial aid policy adopted by the Regents in 1994, the University's financial aid programs are closely linked to the University's goals of student access and helping the state meet its professional workforce needs.[1] In 2014-15 (the most recent year for which information is available), UC students received $4.0 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 the University's financial aid program is to ensure that the University remains financially accessible to all eligible students. During the 2014-15 academic year, 68% of UC undergraduates received grant/scholarship aid averaging $16,289 per student, and over one-half of all California resident undergraduates received grant or scholarship assistance that fully covered their mandatory systemwide charges. 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, 46% of UC's 2014-15 graduating undergraduates had no student loan debt. The average debt among the 54% who borrowed was $19,925 ($20,530 for students who were admitted as freshmen), well below the national average of $28,950.

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 2014-15, 65% of graduate students received grant or fellowship support averaging about $18,129 per student, in addition to substantial support from teaching assistantships and research assistantships.

[1] The University of California Financial Aid Policy is available at http://regents.universityofcalifornia.edu/governance/policies/3201.html.

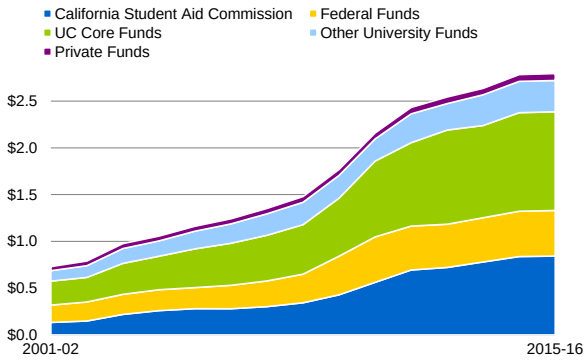
Display XVI-1: 2014-15 Financial Aid by Type and Source of Funds (Dollars in Millions) (Total: $4.0 Billion)



	CSAC	Federal	General Funds, Fees	Other UC	Private
Gift Aid	$837.7	$484.5	$1,053.6	$335.0	$71.7
Loans	$0.0	$1,122.0	$0.0	$7.9	$66.3
Work-study	$0.0	$25.4	$4.8	$0.9	$0.0
Total	$837.7	$1,631.9	$1,058.3	$343.8	$138.0

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 nearly $2.8 billion in 2015-16, half of which is generated from UC sources.

The University has faced challenges in recent years related both to 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. Since then, tuition and fee levels have remained nearly flat for the last six years, while other elements of the total cost of attendance (e.g., living expenses, books, and supplies) have increased. Increases in Professional Degree Supplemental Tuition, which were implemented to help professional schools maintain the quality of their programs, have increased the demand for financial aid for these students as well.

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.

UNIVERSITY OF CALIFORNIA BLUE AND GOLD OPPORTUNITY PLAN

The Blue and Gold Opportunity Plan ensures that financially needy California undergraduates with total family income under $80,000 have their Tuition and Student Services Fee covered by scholarship or grant awards, up to the student's need. This initiative, 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 UC undergraduates are expected to qualify for the Plan in 2016-17.

PROPOSALS FOR 2017-18

Financial Aid and Student Fees

As noted in the *Student Tuition and Fees* chapter, prior to the projected adjustment in Tuition in 2017-18, the University's mandatory systemwide charges have remained nearly flat since 2011-12, which has limited the University's ability to expand its primary institutional aid programs. Little additional aid has been available 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, transportation, personal expenses, 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.

As described in the *Student Tuition and Fees* chapter of this document, the University proposes to adjust Tuition by $282 ($11,502 total) and the Student Services Fee by $54 ($1,128 total) in 2017-18. 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 expected to fully cover the increase for over one-half of California resident undergraduate students, and to provide the neediest students with additional assistance to help offset other cost increases described above.

[2] The *Annual Report on Student Financial Support* is available at ucop.edu/student-affairs/data-and-reporting/.

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 professional degree programs, for graduate student support. 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.

Redirecting Nonresident Undergraduate Aid to Support California Resident Enrollment Growth

In 2013-14, nonresident undergraduates received an estimated $32 million in need-based grants funded by mandatory systemwide charges. In the 2015 Budget Act, the Legislature identified these funds 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 to use these funds to support California resident enrollment growth instead. Students who entered UC before fall 2016 remain eligible to be considered for awards while they progress towards their degree objective, but cohorts of new nonresident undergraduates entering UC in fall 2016 or later would not. This approach, which is designed to avoid any negative impact on current UC students, has permitted an estimated $15.5 million to be used for enrollment growth in 2016-17 and a projected $14 million in 2017-18. The funds available to support enrollment will continue to grow as the nonresidents who entered prior to 2016 and receive institutional financial aid graduate. The 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 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 aid programs and provides grants covering UC systemwide charges for 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 or disadvantaged backgrounds. First-year recipients generally receive the stipend only.

The 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. In 2014-15, 83,600 UC students were awarded $837.8 million in financial aid from all programs administered by CSAC. Cal Grant funding for UC students has increased as UC's charges have increased. UC will work with the other segments of 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 201718 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 less than $104,000, falling to 10% for those with incomes and assets up to $156,000. (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 over 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 2014-15, which comprised 17% of all grants and scholarships received by UC students that year;
- Loans totaling $1.1 billion in 2014-15;
- Work-study funds totaling $25.4 million in 2014-15; 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, particularly those in graduate doctoral programs.

University Funds

University funds consist of two components: UC core operating funds and other University aid funds. The University designates over $1.3 billion in UC core operating funds – student tuition and fee revenue, UC General Funds, and State General Funds – for student financial support. 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, a practice 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.

Similarly, the University has increased its systemwide commitment to graduate student support through a return-to-aid of 50% on new tuition and fee revenue for graduate academic students and 33% of all new tuition and fee revenue for students in professional degree programs. 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.

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 $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 2014-15, $78 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 $66 million from private lenders in 2014-15. 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.

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/Latino, and Asian American students are disproportionately low-income; 48%, 51%, and 35%, respectively, of these students are either financially independent (generally, financially independent students are low-income) or have annual parent incomes less than $40,000. Collectively, students in these ethnic categories received 72% of all undergraduate gift aid in 2014-15.

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. Since then, the percentage has declined to 36% 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 $156,000. The University is closely monitoring this population, together with income trends among California families generally.

A general measure of the University's affordability is students' average net cost of attendance, which represents the actual cost of attending UC for undergraduates after taking into account scholarship and grant assistance. In 2014-15, the University's *total* cost of attendance before financial aid was higher 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, however, UC's *net* cost of attendance for resident need-based aid recipients was lower than the estimated net cost at three of the University's four public comparison institutions.

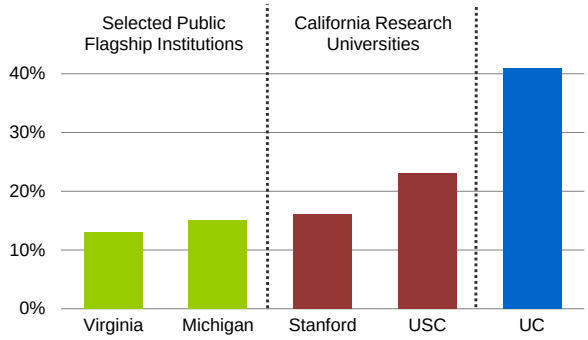
The Education Financing Model

Consistent with the financial aid policy 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:

Display XVI-3: Undergraduate Student Financial Aid At-A-Glance, 2014-15 Academic Year

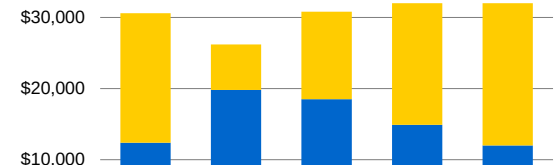
Total Aid (Includes Summer)	$2.9 billion
Aid Recipients	71%
Gift Aid	
Total gift aid	$2.2 billion
Gift aid recipients	68%
Average gift aid award	$15,473
Gift aid awards based on need	Over 92%
Student Loans	
Students who took out loans	42%
Average student loan	$8,282
Students graduating with debt	54%
Avg. debt at graduation among borrowers	$19,925
Student Employment	
Students who worked	42%
Students who worked more than 20 hours per week	10%

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, 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.

- 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 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).

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), 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 to 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.

UC GRANT ASSISTANCE UNDER THE EDUCATION FINANCING MODEL

The Total Cost of Attendance	
Minus	A reasonable contribution from parents
Minus	Grants from federal and state programs
Minus	A manageable student contribution from work and borrowing
Equals	University grant aid needed

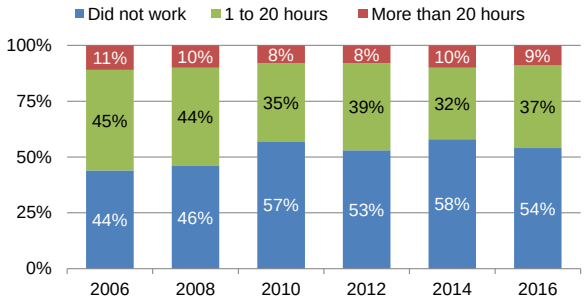
For 2016-17, UC grant recipients will be expected to work or borrow, on average, about $9,700 to finance their education. Students can compete for UC scholarships and outside awards that effectively reduce their expected contribution. (During the 2014-15 academic year, 23% of undergraduates received scholarships worth about $3,980 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?** As noted earlier, the University has achieved remarkable success at enrolling a high percentage of low-income undergraduate students. In addition, the enrollment patterns of first-year students do not appear to be driven by fee levels or changes in the University's net cost; rather, trends in the income of UC freshmen generally reflect similar trends among California's population as a whole.
- **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 impacted 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.

Display XVI-6: Trends in Student Work Hours, 2006-2016



University of California Undergraduate Experience Survey figures from 2006 to 2014 show only slight changes in students' work patterns during this period.

- **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 2014-15, 54% borrowed at some point while enrolled at UC; their average cumulative borrowing at graduation was $19,925, well below the national average of $28,950.

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, in 2014-15, 36% 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 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 income prospects are relatively low. Combined, fellowships, grants, and assistantships represent over 90% of all support received by graduate academic students.

In contrast, 60% of the support for graduate professional students in 2014-15 was in the form of student loans and work-study and only 33% was in the form of fellowships, grants, and assistantships, as shown in Display XVI-9. In 2014-15, the per-capita loan amount for graduate professional students accounted for sixty percent 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.

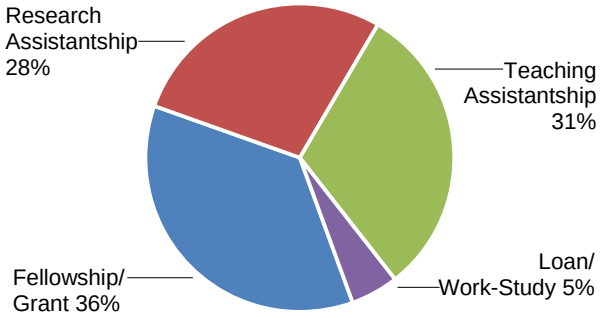
In 2006, for example, the University established an *ad hoc* Graduate Student Support Advisory Committee (GSSAC) to advise the Provost and other senior University officials on matters related to graduate student support. The final report of the Committee included three principal findings:

- Anticipated increases in traditional funding for graduate student support would be inadequate to allow UC to achieve its twin goals of improving the competitiveness of its support and meeting its enrollment growth targets.

Display XVI-7: Graduate Student Financial Aid At-A-Glance, 2014-15

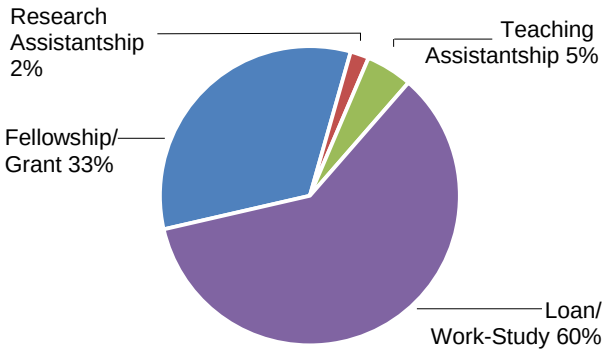
Total Aid	$1.9 billion
From gift aid	33%
From loans/work-study	25%
From assistantships	33%
Aid recipients	87%
Gift Aid	
Gift aid recipients	66%
Average gift aid award	$18,729

Display XVI-8: 2014-15 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: 2014-15 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.

- The cost of covering Nonresident Supplemental Tuition for domestic nonresident and international students limits the extent to which UC graduate programs can compete for these students.
- Research and training grants cannot be relied upon both to fully cover all future tuition and fee increases and help increase the University's competitiveness.

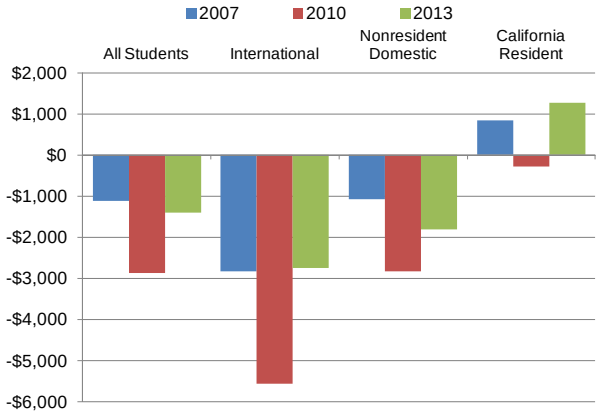
In 2010, the University's Task Force on Planning for Doctoral and Professional Education estimated that $158 million in new graduate student support funding would be required in order to achieve a modified set of graduate enrollment targets and to fully close the competitive gap.

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 any 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.

Surveys of students admitted to the University's academic doctoral programs suggest that UC narrowed the gap between its financial aid offers and those of competing institutions by nearly $1,500 between 2010 and 2013, as shown in Display XVI-10. Results indicate that non-UC institutions still offer an average of $1,400 more in net stipend amounts than UC institutions for all students. However, UC has significantly closed the gap for international and domestic nonresident students since 2010. UC's greatest competitive advantage is among offers to California resident students. The increase in

Display XVI-10: Competitiveness of UC Financial Support Offers to Academic Doctoral Students



Data from 2013 show an increase in UC's competitiveness with top non-UC institutions for financial support offers to academic doctoral students.

competitiveness in 2013 is due to a leveling off of net stipends for competitor institutions and moderate increases to UC net stipends.

Professional School Student Aid

The Regents' Policy on Professional Degree Supplemental Tuition[3], approved in 1994, stipulates that funding equal to at least 33% of the total revenue from Professional Degree Supplemental Tuition (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 aid awarded to graduate professional students is in the form of loans, primarily from federal loan programs. The University also 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 other graduate 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 SOURCES OF 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 2014-15, over 3,000 UC students made use of such exemptions, worth a total of $37.6 million.

AB 540 Tuition Exemption. Consistent with Section 68130.5 of the California Education Code, by University policy, certain nonresident students who either (1) attended a California high school for at least three years and graduated from a California high school or (2) obtained

[3] regents.universityofcalifornia.edu/governance/policies/3103.html.

three years of high school credit in California and attended a California elementary or secondary school for at least three years may be eligible for exemption from 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.

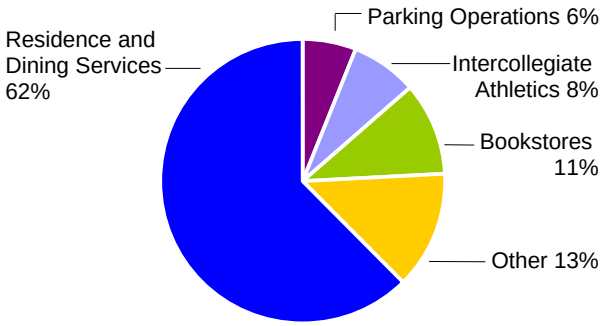
Veterans Education Benefits. Several federal programs provide financial assistance to help veterans and their dependents finance a college education. In particular, the newly enacted GI Bill provides eligible veterans attending UC with an amount equivalent to what is charged to in-state residents for 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 2015-16.

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: 2015-16 Auxiliary Enterprises Expenditures by Service Type (Total: $1.2 Billion)



Residence and dining services account for two-thirds of the expenditures by auxiliary enterprises.

Display XVII-2: Auxiliary Enterprises At-A-Glance, 2015-16

Student Housing:	
Single student residence bed spaces	82,810
Student family apartments	5,671
Student housing occupancy rate	108%
Planned growth in student beds by 2016	300
Faculty Housing:	
Faculty rental housing units	1,463
Planned growth by 2016	0
Mortgage loans provided	7,662
Faculty provided housing assistance	6,223
Parking:	
Parking spaces	125,626

STUDENT, FACULTY, AND STAFF HOUSING

UC's largest auxiliary enterprise is student housing, comprising 82,810 University-owned residence hall and single student bed spaces and 5,671 student family apartments, for a total of 88,481 spaces in Fall 2016.

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. Systemwide, the occupancy rate is at 108%. 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.

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 issues of environmental sustainability.

Seven campuses (Davis, Irvine, 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 San Francisco campus closed its bookstore in 2011; textbooks and reference material are available through an online UCSF-specific vendor. The Berkeley and Riverside campuses contract the management of the bookstores to private operators.

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:

- Increasing disposable 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, rising mandatory costs that are rising 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; 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 services and textbook rentals are a growing source 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 125,626 spaces in 2016 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 vehicles (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, specifically undesignated reductions in State General Fund budgets awaiting allocation decisions and budgetary savings targets.

General Obligation Bond Debt Service

The 2013-14 Budget Act provided for the transfer of $193 million to UC's base budget to cover State General Obligation Bond debt service related to University capital projects. Appropriated amount is being adjusted based on the actual debt service. For FY15-16, the actual debt service payment is $203.7 million. This funding is a pass-through and not available for UC's operating needs; however, the transfer increases UC's base from which future budget adjustments are calculated.

Compensation, Employee and Retirement Benefits, and Non-Salary Cost Increases

This chapter discusses funding for employee salaries and benefits. 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, 2015-16

Number of Employees as of April 2016 (base FTE)	
Academic	44,506
Professional/Support Staff	97,578
Managers/Senior Professionals	11,196
Senior Management	168
Total	153,448
Salaries and Wages	$13.7 billion
Employee Health Benefits	$1.6 billion
UC Retirement Plan as of July 2016[1]	
Active members (Headcount)	125,907
Normal Cost	$1.8 billion
Retirees and survivors	56,990
Benefits payout for 2015-16	$3.1 billion
Annuitant Health Benefits[1]	
Retirees and family members (Headcount)	62,115
Projected Cost for 2016-17	$301 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. 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.

Compounding this problem, UC faculty and staff faced furloughs in 2009-10, resulting in salary reductions from 4% to 10%. The lack of regular general salary increases during the fiscal crisis, along with the temporary salary reductions resulting from the furlough plan and escalating employee contributions to pension and medical benefits, threatens UC's ability to compete for talent. In 2011-12, 2013-14, 2014-15, 2015-16, and 2016-17 faculty and staff were eligible for general salary increases detailed later in this chapter. However, these modest increases were not enough to close the market salary gap.

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. In fact, since 2005, despite the Regents' initiative, UC's position relative to market has worsened. As stated above, in four out of the nine years since then, the University provided no salary increases, and in one of those years implemented temporary salary reductions and furloughs.

Thus, instead of closing market gaps, 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 2017-18 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 2017-18 includes a compensation increase package 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.

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 expansion of teaching and research skills, 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.

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 total remuneration for faculty was 10% behind market and cash compensation was lagging by nearly 12%.

As noted, 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 2017-18 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.

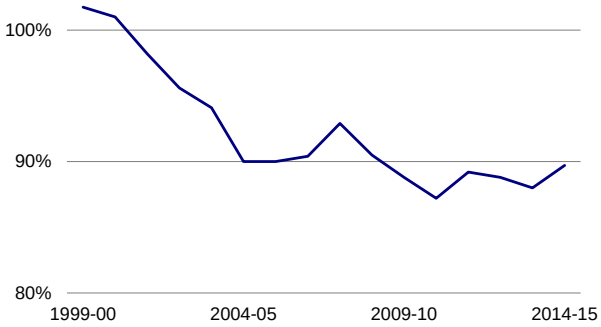
Faculty Salary Gap

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 10.3% in 2014-15, the most recent year for which data are available.

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, welfare, and retirement 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

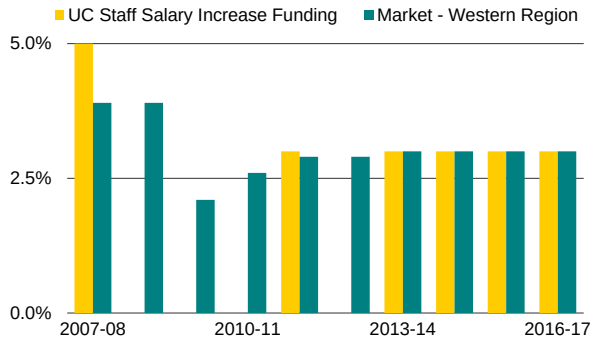
funding for public institutions, it is expected that those institutions will rapidly move to restore academic programs by recruiting faculty away from other universities. UC already finds itself struggling to retain its own high-quality faculty. Additionally, recruitment of new faculty, which significantly slowed during the recent fiscal crisis, remains a concern. In 2010-11 and 2011-12, more faculty separated from the University than were hired. Salary lags pose challenges to attracting the best faculty candidates, and there is a reputational cost associated with an inability to adequately compensate faculty.

Display XIX-2: Ladder Rank Faculty Salaries as a Percentage of Market



Due to inadequate State funding over the last thirteen years, faculty salaries at UC have declined relative to UC's comparison institutions. In 2014-15, UC's faculty salaries were 10.3% 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

Recent 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.

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%.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 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 executives, 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 50.7%. Among their peers at other public institution members of the Association of American Universities, compensation for UC chancellors trails by 35.6%, falling in the bottom third, despite the size, complexity, and stature of UC.

A salary gap exists across the spectrum of UC's staff employees. In Fall 2005, in an effort to reduce the gap, the Regents adopted a plan calling for annual increases of 5% - 5.5% in staff salaries over a period of 10 years. From 2005-06 to 2007-08, with funding from the Compact with Governor Schwarzenegger, UC slightly exceeded market salary increases, but during 2008-09, 2009-10, 2010-11, and 2012-13, no staff salary increases were provided. Further implementation of the ten-year plan has been delayed due to ongoing funding constraints.

RECENT HISTORY OF SALARY INCREASES FOR NON-REPRESENTED STAFF

2001-02 and 2002-03: Staff salary increases were lower than planned because of inadequate 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, though not enough to reverse the effects of years without adequate 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: Merit-based salary increases averaging 3% for non-represented staff and academic personnel were implemented.

Similar to faculty, retention and recruitment of staff is a concern due to the salary lag. Economic recovery in California is generating new opportunities for staff, and UC is experiencing challenges in retaining its employees. In September 2011, the University implemented a 3% merit pool for non-represented staff employees. This increase did not include employees who are part of the senior management group or any staff with base salaries above $200,000. In 2013-14, non-represented staff received an average general salary increase of 3% despite the continuing financial constraints on the University's budget. Faculty and non-represented academic personnel received a 2% increase in addition to the academic merit program. The increase helped partially offset the increase in employees' contributions for benefits, including health care and pension.

Top senior management members were not eligible for the general salary increase in 2013-14, bringing the total to six years in which senior managers went without a general salary increase. Non-represented academic personnel and staff received a general increase of 3% in 2014-15 to help offset the increase in benefit costs. Senior managers were eligible for this salary increase. In 2015-16, staff and senior managers received merit-based increases averaging 3% to recognize performance and contribution, and help the University improve its competitive position to attract new, and retain existing, talent.

Among represented staff, most received salary increases based on their unions' collective bargaining agreements. The union agreements, reached just before or at the beginning of the financial downturn, provided for a combination of annual wage and step increases (where individuals qualify for them) that, combined, generally ranged from a total of 2% to 8%, varying by year and collective bargaining unit. The agreements for represented academic employees (i.e., lecturers and librarians) provided for continuation of the annual academic merit salary increase program and generally paralleled the salary program for tenure-track faculty. Actual salary and benefit actions for UC's represented employees are subject to notice, meeting and conferring, and/or consulting requirements under the Higher Education Employer-Employee Relations Act (HEERA).

EMPLOYEE HEALTH AND WELFARE BENEFITS

As part of the total compensation package for faculty and staff, the University offers competitive health and welfare benefits. Depending upon appointment type, the University may pay as much as 40% of an employee's annual base salary in employer benefit costs over and above salary. While salary packages lag the market for both faculty and staff, the total compensation package at the University has remained more competitive when health and welfare and retirement benefits are included.

Chief among these benefits are medical and dental plans for active employees. The University has a continuing commitment to controlling employee health benefit costs; however, state and national trends of increasing health insurance costs in recent years have limited UC's effectiveness in controlling these costs through aggressive management of medical and dental plans. These cost trends appear to be moderating for 2016.

Campuses have been and will continue to be compelled to redirect funds from existing programs to address these costs; however, it is likely that some of the increases in health benefit costs will again be borne by employees themselves through increases in premiums.

These potential changes require that UC maintain at least a minimal regular salary increase program to try to stabilize the competitiveness of total compensation.

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.

Implemented in 2002-03, 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. In addition, the 2011 introduction of a statewide HMO with a customized provider network for UC (HealthNet Blue and Gold HMO) has served to provide members with continued access to affordable care, while avoiding an estimated $76 million in UC benefits costs for the two-year period 2011 through 2012.

In developing the University-sponsored health and welfare plans for calendar year 2014, changes to the portfolio were made to better position UC into the future.

A comprehensive request for proposals was issued to the medical program market, seeking competitive bids on UC's 2014 and 2015 medical program portfolio (excluding Kaiser). This action helped to ensure that UC secures the most cost-competitive programs available in the market while positioning the medical benefit portfolio to provide membership with distinct value in the short term as well as cost sustainability into the future.

For 2017, the UC faculty and staff medical program cost increase will be held at 2.8% over 2016, coming in well under the budget allowance of 4%. 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%.

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]. The total UC contribution for all health and welfare plans will be nearly $32 million less than originally budgeted.

The University, through its Human Resources Compliance unit, launched a Family Member Eligibility Verification review for health benefits coverage in March 2012. The review was conducted to ensure that only those eligible for coverage by University health benefits were, in fact, enrolled in UC-funded plans. Ninety thousand staff, faculty, and retirement plan participants, along with their 175,000 enrolled family members, were included in the process. The annualized savings from this and ongoing efforts is approximately $35 million. More regular reviews of this nature will be conducted in the future and will become part of the University's initial benefits enrollment process to help manage costs and continue to strengthen the administration of these important, high-value programs.

On June 26, 2013, in *U.S. v. Windsor*, the U.S. Supreme Court struck down certain provisions of the Defense of Marriage Act (DOMA) that barred recognition of same-sex marriages for purposes of any federal law or regulation, including many tax laws affecting benefits that prevented same-sex spouses from receiving the favorable tax treatment afforded to opposite-sex spouses. The U.S. Treasury Department and Internal Revenue Service recently issued additional guidance regarding the Court's ruling and UC Human Resources has completed its operational review of required changes.
UC has been a leader in providing equity for same-sex spouses and partners – offering health benefits coverage for same-sex partners since 1998 and UC Retirement Plan survivor benefits since 2001. The Supreme Court ruling will make several changes to the tax treatment of these benefits for married same-sex couples. Costs associated with implementing these changes are mostly related to programming of payroll and benefits systems and communications to employees. These costs are not expected to be significant.

While the University has historically had a very competitive benefit package compared to those of other institutions, it is anticipated that within the next few years there will be an unavoidable decrease in the employer-provided value of the overall benefit package due in part to increases in employee-paid health premiums.

[1] http://khn.org/news/big-companies-expect-moderate-increases-in-2017-employee-health-care-costs/

RETIREMENT BENEFITS

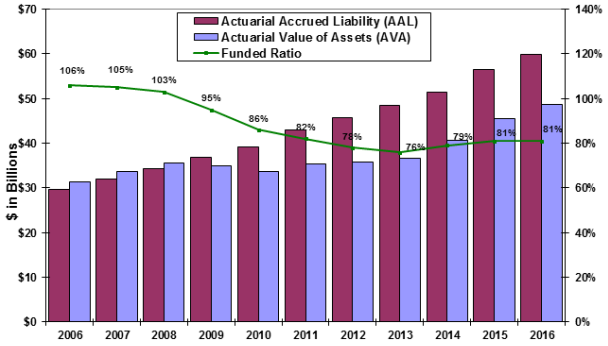
Pension Benefits

The University of California Retirement Plan ("UCRP" or "the Plan") is a governmental defined benefit plan that provides pension benefits for more than 56,000 retirees and survivors and has more than 125,000 active employee members as of July 1, 2016[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 $2.4 billion in retirement benefits during 2015-16.

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.

Display XIX-4: UCRP Historical Funded Status (Dollars in Billions)[1]



The surplus in the UC Retirement Plan has diminished over time and have fallen to a level of 81% on an actuarial value of assets (AVA) basis by July 2016.

[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.

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 $1.8 billion (17.5% 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 81% in July 2016. 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.

It has been clear since at least 2005 that resumption of contributions would be necessary to cover the cost of additional service credit accrued each year. Unfortunately, in 2007, the State was unwilling to restart contributions to UCRP due to the Plan's overfunded status at that time. The lack of State funding to support retirement contributions delayed the restart of contributions from other fund sources as well.

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 and student tuition increases.

In September 2010, the Regents approved increases to

[2] For campuses and medical centers (excludes DOE Labs).

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. Member contributions 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 The employer and employee contributions will remain at the 14% and 8% levels, respectively.

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 $936 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. The $564 million represented an amount that, along with other contributions, results in approximately full funding of the ADC for 2015-16. 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.

In addition, the State is expected to provide 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

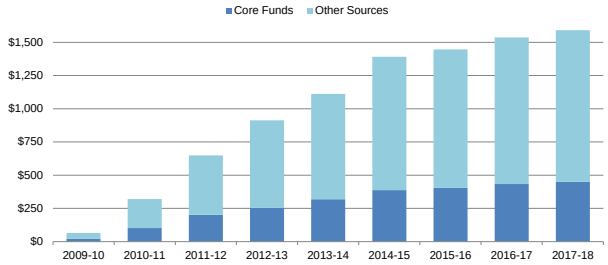
In December 2010, the Regents took action to make changes to post-employment benefits that reduced long-term costs. Most significantly, the Regents approved the establishment of a new tier of pension benefits for

Display XIX-5: Employer and Employee UCRP Contribution Rates[1]

	Employer		Member
	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%	1.19%	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 began 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 by Fund Source (Dollars in Millions)



Employer contributions to UCRP restarted in April 2010. Contribution rates for 2017-18 are 14% of employee compensation, at a cost of about $452 million to core-funded programs and $1.6 billion in total.

employees hired or (in certain situations) rehired on or after July 1, 2013, which would increase 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 2015-16, UC recorded a net pension liability accrual of $15.1 billion.

In 2016-17, the University is contributing $434 million from core fund sources and $1.5 billion from all sources to UCRP. UC contributions are expected to rise to $452 million from core funds ($1.6 billion from all funds) in 2017-18. The State's share, based on State- and student tuition and fee-funded employees, is projected to rise to approximately $375 million in 2017-18.

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 $360 million needed to fully fund the State's 2016-17 share of UCRP. The budget plan for 2017-18 includes $18.3 million for the increase in these costs for core-funded programs. Of this, $15.2 million is the State's share of UCRP employer contributions and the remaining $3.1 million is related to programs funded from UC General Funds.

As described earlier, the State is expected to provide one-time funding for UCRP totaling $436 million over three years beginning 2015-16. This funding can only be used to help fund the unfunded liability associated with the Plan and is 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 2016, the cap is $117,020 for employees with Social Security and $140,424 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, 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 about 62,115 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 2017, the maximum UC contribution will be 71% 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 2.93%. During 2016-17, UC's costs for annuitant health benefits are estimated to exceed $301 million from all fund sources.

As of July 2016, UC has a Total OPEB liability (TOL) for retiree health of $21.2 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.

GASB rules require the University to report in its financial statements all post-employment benefits expense, including retiree medical and dental costs, on an accrual basis over the employees' years of service, along with the related obligation, net of any plan assets. The accrual may be amortized over a number of years, and for 2015-16, UC's financial statements recorded a net obligation of $10.4 billion.

The University's budget plan for 2017-18 includes $8.1 million for increases in retiree health program costs consistent with the 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 $27.3 million for non-salary price increases, consisting of a 2.5% general non-salary price increase.

[3] For campuses and medical centers as of July 2016 (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 performance for additional years, 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 and 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, 2020, but may be extended through 2026 if LLNS continues to win award terms each year.

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 2016-17, as a result of negotiations with DOE for the recent LBNL contract extension, LBNL is now eligible to earn a maximum of $6.4 million in management fee revenue, which will be used for costs of LBNL-determined research programs not funded by DOE, reserves for future claims, and unallowable costs associated with LBNL

Display XX-1: Expenditure Plan for Income from LANS and LLNS (Dollars in Millions) for 2016-17

Contract Non-Reimbursable Compensation for LLC Employees in UC-Designated Key Personnel Positions	$2.2
UCOP Oversight	$4.9
Post-Contract Contingency Fund	$2.3
LLC Fee Contingency Fund (maintained at the $7.0 million level)	$0
UC Laboratory Fees Research Program (of which $400,000 is designated for the UC-NL Student Fellowship Pilot Program)	$13.4
Livermore Lab Foundation	$0.3
Total allocation 2016-17	$23.1

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 seeks to foster collaborative research between the campuses and LLNL and LANL. This year a pilot program was also initiated to award graduate fellowships to UC students that allow for spending time in residence at the labs. At their July 2016 meeting, the Regents approved an expenditure plan for a total of $23.1 million for 2016-17, as shown in Display XX-1.

Historical Perspective

Historically, the University's State-funded budget has 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]

1967-1990: TWO CYCLES OF BUDGET CUTS

The University experienced budget reductions of about 20% in real dollars during the late 1960s and early 1970s. Faculty positions and research funding were cut, and the student-faculty ratio deteriorated by about 20%.

In the late 1970s and early 1980s, the University again experienced a series of budget cuts. By the early 1980s, faculty salaries lagged far behind those at the University's comparison institutions and top faculty were being lost to other institutions; buildings needed repair; classrooms, laboratories, and clinics were poorly equipped; libraries suffered; and the building program virtually came to a halt.

The situation improved significantly in the mid-1980s when a period of rebuilding was initiated. Faculty and staff salaries returned to competitive levels, funds became available for basic needs such as instructional equipment replacement and building maintenance, and research efforts were expanded. The capital budget also improved dramatically. There was significant growth in private giving, and the University once again became highly competitive for federal research funds. By the late 1980s, however, the situation began to change. Fiscal problems at the State level led to a growing erosion of gains made during the mid-1980s. By 1989-90, UC was struggling with the early stages of a fiscal problem that subsequently turned into a major crisis.

1990-91 THROUGH 1994-95: BUDGET CRISIS

The University experienced dramatic shortfalls in State funding during the first four years of the 1990s. Although State funding increased in 1990-91, it was below the level needed to maintain the base budget and fund a normal workload budget (fixed cost increases, inflationary increases, and workload changes). Over the next three years, State funding for UC dropped by $341 million. At the same time, the University had to cope with inflation, fixed cost increases, and workload growth. Consequently, the University made budget cuts totaling $433 million, equivalent to roughly 20% of its State General Fund budget in 1989-90, as depicted in Display XXI-1. (By way of comparison to the most recent fiscal crisis, the proportion by which UC's budget was reduced over a four-year period in the 1990s is equivalent to the one-year proportional reduction in 2009-10.)

Display XXI-1: Permanent Cuts to UC Budgets, 1990-91 through 1994-95 (Dollars in Millions)

1990-91	5% cut in research, public service, and administration.	$25
1991-92	Workforce reduction in both instructional and non-instructional programs, cut in non-salary budgets, undesignated cut.	$120
1992-93	Permanent cut of $200 million phased in over two years.	$200
1993-94	Reduction in campus and Office of the President budgets, resulting in further workforce reductions.	$35
1994-95	Reductions in campus and Office of the President budgets in order to fund restoration of salary funds cut temporarily in 1993-94.	$53
	Total	$433

[1] Information about State funding is also available in the *Sources of University Funds* chapter.

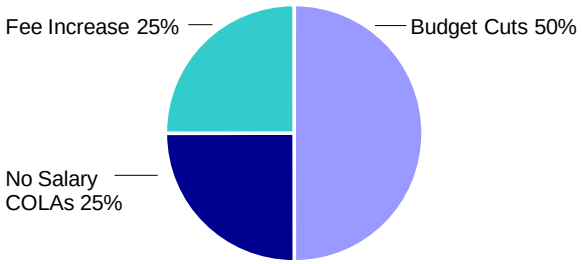
At the time, the budgetary losses during the early 1990s were unprecedented. The University's 1993-94 State General Fund budget was less than it was in 1987-88, even though in the interim there had been inflation, other cost increases, and enrollment growth. The University's budget would have been about $900 million greater in 1993-94 if the State had maintained the base and funded normal cost increases and workload growth. The University coped with this shortfall in ways that reflected the limited nature of its options in the short term. As illustrated in Display XXI-2, about half of the loss was taken through budget cuts, approximately another quarter by providing no cost-of-living increases for employees, and the remaining quarter through student fee increases accompanied by increases in student financial aid.

While regrettable, fee increases were the only potential source of increased revenue to address budget cuts of such significant magnitude. At the same time, the University mitigated the impact of these fee increases on financially needy low- and middle-income students through a significant increase in financial aid grants (as opposed to students needing to take out loans). Over five years, through 1994-95, financial aid grants and other gift aid funded from University sources increased by approximately $118 million, or nearly 170%, to help mitigate the impact of increased fees.

During the early 1990s, UC's core-funded workforce declined by a net total of approximately 5,000 full-time equivalent (FTE) employees. The instructional program was protected to the extent possible by making deeper cuts in other areas such as administration, research, public service, student services, and facilities maintenance. In particular, administration was assigned deep cuts both on the campuses and at the Office of the President. Although instructional resources were eroded by the budget cuts, the University honored the Master Plan by continuing to offer a place to all eligible California residents who sought admission at the undergraduate level and providing students with the classes they needed to graduate on time.

In 1994-95, after years of steady erosion, the University's budget finally stopped losing ground. For the first time in four years, the State provided UC with a budget increase

Display XXI-2: Actions Taken to Address the Budget Shortfall of the Early 1990s



During the early 1990s, UC addressed the cumulative budget shortfall of $900 million through reductions to academic programs and administrative budgets, increases in student fees, and foregone cost-of-living adjustments for faculty and staff.

of about 3%. Base salary levels were restored following a temporary salary cut in 1993-94, and funding for faculty and staff cost-of-living salary increases of about 3% was provided for the first time since 1990-91. The student fee increase was held to 10%, and, once again, increases in financial aid accompanied the fee increase, helping to offset the impact on needy students.

While the 1994-95 budget represented a substantial improvement over previous years, the University nonetheless remained in a precarious financial condition. The University's share of the State General Fund budget had declined by 1% to 4.3%. Faculty salaries lagged the average of the University's comparison institutions by 7%, the workforce had been reduced by 5,000 FTE without a corresponding decline in workload, and the budget was severely underfunded in several core areas that have a direct relationship to the quality of instructional programs such as instructional equipment, instructional technology, libraries, and facilities maintenance.

1995-96 THROUGH 1999-00: THE COMPACT WITH GOVERNOR WILSON

A major turning point came with the introduction of Governor Wilson's 1995-96 budget, which included a Compact with Higher Education that ultimately was operational through 1999-00, described in Display XXI-3. Its goal was to provide fiscal stability after years of budget cuts and allow for enrollment growth through a combination of State General Funds and student fee revenue.

Display XXI-3: 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 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.

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. Faculty salaries were restored to competitive levels, allowing the University to once again recruit the nation's best faculty. Declining budgets were stabilized and further deterioration of the University's budget was halted.

In fact, 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; helped restore UC faculty salaries to competitive levels more quickly; provided $35 million for a number of high priority research efforts; and increased funding for K-14 and graduate outreach by $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-4, 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

Display XXI-4: 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

Display XXI-5: Major State Funding Changes under the Partnership Agreement, 2000-01 (Dollars in Thousands)

For the first year of the Partnership, the University's basic budget request was fully funded consistent with the funding principles of the Partnership. The State also provided additional funding in several areas.

Partnership Funding	
Annuitant Health and Dental Benefits	$1,753
Base Budget Increase	$104,437
Core Academic Support	$26,109
Enrollment Growth	$51,234
Other Initiatives	
K-12 Internet Connectivity	$32,000
UC Internet Connectivity (One-Time)	$18,000
California Subject Matter Project	$40,000
MIND Institute (One-Time)	$28,000
Professional Development Programs	$31,000
Teaching Hospitals (One-Time)	$25,000
Academic Support	$20,000
Buyout of 4.5% Student Fee Increase	$19,300
Additional 1.5% for Low-Paid Workers	$19,000
Research Programs	$35,000
Other Academic and Outreach Initiatives	$6,109
Summer Session Fee Buy-down	$13,800
Charles R. Drew Medical Program	$7,850
UC Merced Base Budget Funding	$9,900
Geriatrics Endowed Chairs (One-Time)	$6,000
English Learners Teacher's Institute	$5,000
Expand AP Program Development	$4,000
Outreach	$2,000
Algebra and Pre-Algebra Academies	$1,700
Summer School for Math and Science	$1,000
Governor's Education Programs	$1,000
New Teacher Center at UCSC	$600
Reapportionment Data Base	$100

Total State Funding = $3.192 billion

Display XXI-6: Major State Funding Changes under the Partnership Agreement, 2001-02 (Dollars in Thousands)

Partnership Funding	
Base Increase (4%)	$59,853
Enrollment Growth	$65,022
Annuitant Health and Dental Benefits	$829
Reductions	
Increased Natural Gas Costs	$50,620
California Subject Matter Project	($250)
Professional Development Institutes	($11,000)
Undesignated Reduction	($5,000)
K-12 Internet	($4,850)
Outreach Redirection	($3,250)
Labor Studies	($500)
Substance Abuse Research	($310)
Other Initiatives	
Buyout of 4.9% Student Fee Increase	$21,542
Year-round Instruction	$20,654
MESA and Puente	$1,500
Clinical Teaching Support Hospitals	$5,000
Spinal Cord Injury Research	$1,000
Aging Study	$250
CPEC Eligibility Study	$28
UC Merced (one-time)	$2,000

Total State Funding = $3.323 billion

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.

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 (see Display XXI-6). 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.

Funds for strengthening the quality of undergraduate education were not provided, however; in addition, UC funding available for debt financing for deferred maintenance projects was reduced from $6 million to $4 million to help fund compensation increases. 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, described in Display XXI-7, 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.

Display XXI-7: Major State Funding Changes under the Partnership Agreement, 2002-03 (Dollars In Thousands)

Partnership Funding	
Annuitant Health and Dental Benefits	$16,824
Enrollment Growth	$69,201
Reductions	
Base Increase (4% reduced to 1.5%)	$47,590
Base Reduction Offset by Fee Increases	($19,000)
Core Needs (one-time reduction)	($29,000)
Professional Development Institute	($50,866)
Research	($48,482)
Academic and Institutional Support	($20,000)
Student Financial Aid	($17,000)
Outreach	($14,396)
Student Services	($6,336)
K-12 Internet Connectivity	($6,250)
AP Online – Revert Savings (one-time)	($4,000)
Public Service Programs	($2,289)
California Subject Matter Project	($503)
Other Initiatives	
Year-round Instruction	$8,443
Dual Admissions Program	$2,500
CA Institutes for Science and Innovation	$4,750
CPEC Eligibility Study	$7
UC Merced (one-time)	$4,000
Total State Funding = $3.15 billion	

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 (see Display XXI-8); 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.

Display XXI-8: Major State Funding Changes under the Partnership Agreement, 2003-04 (Dollars In Thousands)

Partnership Funding	
Annuitant Heath and Dental Benefits	$16,089
Enrollment Increase	$117,200
Reductions	
Base Budget Reduction	($160,098)
Unallocated Reduction	($149,002)
Core Academic Support	($29,000)
Outreach	($45,532)
AP Online	($4,438)
Student Services	($19,008)
Research	($28,457)
Public Service	($12,500)
Academic and Institutional Support	($16,475)
California Subject Matter Project	($15,000)
K-12 Internet Connectivity	($6,600)
Labor Institutes	($2,455)
Teaching Internships	($1,300)
San Diego Supercomputer	($360)
Other Initiatives	
UC Merced Base Budget Adjustment	$100
UC Merced (one-time)	$7,300
Total State Funding = $2.868 billion	

Display XXI-9: Major State Funding Changes under the Partnership Agreement, 2004-05 (Dollars In Thousands)

Partnership Funding	
Annuitant Health and Dental Benefits	$34,416
Reductions	
Base Reduction Offset by Student Fees	($133,702)
Research	($11,626)
Academic & Institutional Support	($45,435)
Subsidy Reductions/Eliminations	($40,782)
Increase Student: Faculty Ratio	($35,288)
Reduce Freshman Enrollment 10%	($20,790)
Outreach/Reinstatement of Enrollment	$8,209
Unallocated Shift to Main Support	($18,000)
Eliminate K-12 Internet	($14,300)
Labor Institutes	$1,800
Other Initiatives	
UC Merced (one-time)	$10,000
Total State Funding = $2.699 billion	

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, as shown in Display XXI-9. 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-10: 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-10. 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, as shown in Display XXI-11. 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

Display XXI-11: Major State Funding Changes under the Compact, 2005-06 through 2007-08 (Dollars In Thousands)

2005-06 STATE FUNDING	
Compact Funding	
Base Budget Adjustment (3%)	$76,124
Annuitant Health and Dental Benefits	$521
Enrollment Growth	$37,940
Reductions	
One-time enrollment shortfall	($3,764)
Other Initiatives	
Labor Institutes	($3,800)
Science and Math Initiative	$750
UC Merced (One-Time)	$14,000
COSMOS	($1)
Total State Funding = $2.839 billion	
2006-07 STATE FUNDING	
Compact Funding	
Base Budget Adjustment (3%)	$80,489
Enrollment Growth	$50,980
Nursing Enrollment Growth	$963
PRIME (MD) Enrollment Growth	$180
Buyout of 8-10% Student Fee Increases	$75,015
Other Initiatives	
Student Academic Preparation	$17,300
Science and Math Initiative	$375
CA Community College Transfer	$2,000
Labor Institutes	$6,000
Substance Abuse Research	$4,000
UC Merced (One-Time)	$14,000
Total State Funding = $3.069 billion	
2007-08 STATE FUNDING	
Compact Funding	
Base Budget Adjustment (4%)	$116,734
Annuitant Health and Dental Benefits	$10,458
Enrollment Growth	$52,930
Nursing Enrollment Growth	$757
PRIME (MD) Enrollment Growth	$570
Reductions	
UC-Mexico Research	($500)
Other Initiatives	
UC Merced (One-Time)	$14,000
COSMOS	$500
Total State Funding = $3.257 billion	

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. Finally, for several years, the State budget had contained language authorizing the University to use operating funds (up to $7 million) to support renovations needed for the University's educational facility in Mexico City, *Casa de California*; however, it was agreed by the Governor and the Legislature that no State funds would be used for this facility going forward.

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.

Display XXI-12: Major 2008-09 State Budget Actions
(Dollars in Thousands)

Compact Funding	
Base Budget Adjustment (4%)	$123,832
Additional 1% for Core Academic Support	$30,958
Annuitant Health and Dental Benefits	$11,081
Enrollment Growth	$56,370
PRIME (MD) Enrollment Growth	$975
Other Adjustments:	
10% Budget Reduction	($220,185)
May Revise Restoration	$98,548
Mid-year and Year-end Actions	
Mandatory Savings Target (one-time)	($33,051)
Mid-year Special Session Reduction	($65,497)
May Revise Reduction (one-time)	($510,000)
May 26 Reduction (one-time)	($207,500)
Conference Committee Restoration	$2,000
Other Initiatives	
UC Merced (one-time)	$10,000
Total State Funding = $2.418 billion	

Display XXI-13: Major 2009-10 State Budget Actions
(Dollars in Thousands)

Compact Funding	
Base Budget Adjustment (5%)	$153,764
Annuitant Health and Dental Benefits	$11,332
Enrollment Growth	$56,180
PRIME (MD) Enrollment Growth	$1,460
Nursing Enrollment Growth	$1,087
Other Adjustments:	
Elimination of Compact Funding	($209,944)
May Revise Restoration	$98,548
Subsequent Actions	
Special Session Vetoes (one-time)	($305,000)
May Revise Reductions	($81,300)
May 26 Reduction (two-year)	($167,500)
Conference Committee Adjustment	($17,800)
Other Initiatives	
UC Merced (one-time)	$5,000
Total State Funding = $2.591 billion	

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%. Displays XXI-12 and XXI-13 show the actions that occurred during 2008-09 and 2009-10.

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.

Budget negotiations continued throughout the spring and summer with no agreement by the Governor and the Legislature. Ultimately it was not until October 8th, more than 100 days into the fiscal year, that a final budget package for 2010-11 was signed into law.

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-14: Major 2010-11 State Budget Actions
(Dollars in Thousands)

Augmentations	
Restoration of One-time Cuts (permanent)	$199,000
Restoration of One-time Cuts (one-time)	$106,000
Annuitant Health and Dental Benefits	$14,121
Enrollment Growth	$51,272
Debt Service Adjustments	$52,190
Other Initiatives	
UC Merced (one-time)	$5,000
Redirections of Existing Funds	
UCR Medical School ($10 million)	$0
Reapportionment Database ($600,000)	$0
Total State Funding = $2.911 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. Display XXI-14 summarizes the changes to the University's operating budget as approved in the final budget for 2010-11.

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

Display XXI-15: 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.

Display XXI-16: 2011-12 Reductions for Previously Earmarked Programs (Dollars in Thousands)

Elimination of State Support	Reduction
Earthquake Engineering Research	$384
Lupus Research	$624
Spinal Cord Research	$1,246
Substance Abuse Research	$13,770
Preuss School	$1,000
Reductions up to 21.3%	
San Diego Supercomputer Center	$690
Other SAPEP Programs (estimated)	$4,056
COSMOS (estimated)	$192
Reductions up to 5%	
AIDS Research	$461
Charles R. Drew Medical Program	$462
MIND Institute	$156
CA Policy on Access to Care	$50
US-Mexican Treaty Project	$10
Study of Latino Health & Culture	$30
No Reductions	
Labor Institutes	$0

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, as shown in Display XXI-16.

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.)

Display XXI-17: Major 2012-13 State Budget Changes (Dollars in Thousands)

Augmentations	
UC Retirement Plan	$89,135
Annuitant Health Benefits	$5,168
Lease Revenue Bond Debt Service	$11,648
Total State Funding = $2.377 billion	

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 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

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.

Display XXI-18: Major 2013-14 State Budget Changes (Dollars in Thousands)

Multi-Year Plan Funding	
Deferred 2012-13 Tuition Buyout	$125,000
Base Budget Adjustment (5%)	$125,100
Annuitant Health Benefits	$6,400
Lease Revenue Bond Debt Service	$10,200
Other Initiatives	
Shift of GO Bond Debt Service	$200,400
Redirections of Existing Funds	
UC Riverside Medical School ($15 million)	
Online Initiative ($10 million)	
Debt Service, Merced campus ($3.6 million)	
*Total State Funding = $2.844 billion**	

*Of this total, $200.4 million is for general obligation bond debt service.

$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 for the second year in a row.

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 for a third consecutive year.

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 cost adjustments.

Display XXI-19: Major 2014-15 State Budget Changes
(Dollars in Thousands)

Multi-Year Plan Funding	
Base Budget Adjustment	$ 142,200
One-Time Funding	
Cal BRAIN	$ 2,000
Labor Research Center	$ 2,000
Special Funds - One-Time Funding	
Behavior Health Centers (Prop 63)	$ 15,000

*Total Permanent State Funding = $2.886 billion**
Total One-Time State Funding = $4 million
Total One Time Special State Funding = $15 million
*Of this total, $193.7 million is for general obligation bond debt service.

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 finds itself in a much better situation than it was in a year ago. The 2015-16 budget recently signed by the Governor includes 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 provides 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 will increase State funding over the next four years by $507 million.

Under the agreement with the Governor, the University will 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 is 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 has convened a retirement options task force to advise on the design of new retirement options that will include the new pensionable salary cap consistent with PEPRA. The retirement options will be brought to the Regents at the March 2016 meeting for review and approval. The pension cap now in place is equivalent to the Internal Revenue Service level, currently $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 can be combined with additional internal borrowing to improve the funding status of UCRP.

The framework also provides $25 million in one-time funding for deferred maintenance. This is the first time since 2002 that the State has 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 was not included in the final budget act

The framework also calls 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 is 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 will 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% will be distributed to support other student services programs consistent with the Regental policy on the Student Services Fee.

The framework also acknowledges 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 recognizes the increases in PDSTs approved by the Regents in November 2014 for existing and new programs other than the law schools. The framework calls for no increases in law school PDSTs for the next four years.

In addition to these funding elements, the budget framework includes a number of performance-related provisions. These provisions were the subject of considerable discussion and examination during the Select Advisory Committee meetings and cover 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, and that is 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 indicates that the University will receive an additional $25 million above its 4% base budget adjustment if it can demonstrate in the Spring of 2016 that it has 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 provides 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 includes $1 million in one-time funds for the Wildlife Health Center at the Davis campus.

The final budget also calls 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 has 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 calls for several reports and actions by the University and others.

One provision indicates 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 calls for several reports: a report on all "University fund sources legally allowable" to support costs for education; another three-year financial sustainability plan, which is 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 is 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 is legislation that accompanies the budget to implement certain related statutory provisions, also includes two studies of note: one asks the Legislative Analyst to study the need for additional new campuses for CSU and for UC and another asks 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 puts UC in a strong financial position that provides the University with predictable and stable support for the next four years and offers 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 will total $3.279 billion, a 4.6% increase over 2015-16. This includes 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 is providing $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 includes 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 must demonstrate by May 1, 2017 that it has 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 is 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 is less than the $10,000 per student that the University requested; the amount provided equates to about $7,400 per student, equivalent to the amount CSU receives per student from the State. This is higher than the $5,000 per student provided by the State for enrollment growth in 2016-17.

In addition, the University is requested to adopt a policy that specifies a limit on nonresident enrollment. A nonresident undergraduate enrollment policy will be developed and presented to the Board in early 2017.

As noted above, the budget act includes 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 are 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 demonstrates 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 includes $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 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 includes 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-20 on the next page provides a brief outline of State budget actions since 2000-01.

Display XXI-20: The UC Budget Since 2000-01

2000-01

Partnership Agreement with Governor Davis funding allowed increases to base, core needs, enrollment, research, and outreach, as well as new and expanded funding for initiatives, and fee buy-downs for students.

2001-02

While a fiscal crisis loomed, the State was able to provide Partnership funding, but by the end of the year made some cuts to research, outreach, and public service.

2002-03

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

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

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

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

The State provided Compact funding, as well as additional funding for outreach and research, and provided students with fee increase buyouts.

2007-08

Compact funding was again available, with some additional funding for outreach.

2008-09

With the onset of another fiscal crisis, the Compact was funded, but equivalent unallocated cuts were assigned and institutional support was reduced.

2009-10

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

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

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

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

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

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

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

Consistent with the framework agreement with the Governor, UC's base budget was adjusted upward by 4% and tuition was held flat for the sixth consecutive year. One-time funds were made available for a variety of initiatives of importance to the University, Governor, and Legislature.

Appendix Display 1: Budget for Current Operations and Extramurally Funded Operations (Dollars in Thousands)

INCOME		
	2015-16 Actual	2016-17 Estimated
BUDGET FOR CURRENT OPERATIONS		
General Fund		
State of California	$ 3,055,247	3,301,338
GO Bond Debt Service	203,746	220,806
UC Sources	1,194,188	1,330,825
Total General Funds	$ 4,453,181	4,852,969
Restricted Funds		
State of California	$ 63,495	63,627
U. S. Government Appropriations	25,700	26,000
Educational, Student Services & Professional School Fees	3,211,413	3,371,255
Extension, Summer Session & Other Fees	940,081	1,049,620
Teaching Hospitals	9,467,149	9,751,163
Auxiliary Enterprises	1,167,238	1,202,255
Endowment Earnings	212,892	269,693
Other	4,566,300	4,689,996
Total Restricted Funds	$ 19,654,268	20,423,609
TOTAL BUDGET FOR CURRENT OPERATIONS	$ 24,107,449	25,276,578
EXTRAMURALLY FUNDED OPERATIONS		
State of California	$ 307,213	307,213
U.S. Government	2,869,533	2,926,924
Private Gifts, Contracts & Grants	1,842,378	1,879,226
Other	634,657	653,696
TOTAL EXTRAMURALLY FUNDED OPERATIONS	$ 5,653,781	5,767,059
DEPARTMENT OF ENERGY LABORATORY (LBNL)	$ 811,000	827,000
TOTAL OPERATIONS	$ 30,572,230	31,870,637

EXPENDITURES		
	2015-16 Actual	2016-17 Estimated
BUDGET FOR CURRENT OPERATIONS		
Instruction:		
General Campus	$ 3,153,536	3,269,148
Health Sciences	2,514,988	2,610,597
Summer Session	17,873	18,539
University Extension	297,543	306,469
Research	825,922	871,193
Public Service	285,751	306,193
Academic Support: Libraries	283,711	296,086
Academic Support: Other	1,474,113	1,524,285
Teaching Hospitals	9,467,149	9,826,314
Student Services	913,283	997,928
Institutional Support	1,414,453	1,472,803
Operation and Maintenance of Plant	631,268	671,142
Student Financial Aid	1,331,975	1,378,707
Auxiliary Enterprises	1,167,238	1,202,255
Provisions	124,900	304,113
Program Maintenance: Cost Increases	203,746	220,806
TOTAL BUDGET FOR CURRENT OPERATIONS	$ 24,107,449	25,276,578
EXTRAMURALLY FUNDED OPERATIONS		
Sponsored Research	$ 3,666,221	3,754,971
Other Activities	1,987,560	2,012,088
TOTAL EXTRAMURALLY FUNDED OPERATIONS	$ 5,653,781	5,767,059
DEPARTMENT OF ENERGY LABORATORY (LBNL)	$ 811,000	827,000
TOTAL OPERATIONS	$ 30,572,230	31,870,637

Appendix Display 2: University of California Income and Funds Available (Dollars in Thousands)

		2015-16 Actual	2016-17 Estimated
STATE APPROPRIATIONS			
General Fund	$	3,055,247	3,301,338
GO Bond Debt Service		203,746	220,806
Special Funds		63,495	63,627
TOTAL, STATE APPROPRIATIONS	$	3,322,488	3,585,771
UNIVERSITY SOURCES			
General Funds Income			
Student Fees			
Nonresident Supplemental Tuition	$	832,875	975,524
Application for Admission and Other Fees		43,152	46,570
Interest on General Fund Balances		1,804	1,804
Federal Contract & Grant Overhead		280,194	280,194
Overhead on State Agency Agreements		15,173	15,173
Other		20,990	11,560
Total UC General Fund Income	$	1,194,188	1,330,825
Special Funds Income			
GEAR UP State Grant Program	$	5,000	5,000
United States Appropriations		20,700	21,000
Local Government		154,969	155,000
Student Fees			
Tuition [Educational Fee]		2,702,598	2,827,878
Student Services Fee [Registration Fee]		239,228	264,600
Professional School Fees		269,587	278,778
University Extension Fees		297,543	306,469
Summer Session Fees		17,873	18,539
Other Fees		624,665	724,612
Sales & Services - Teaching Hospitals		9,467,149	9,751,163
Sales & Services - Educational Activities		3,012,212	3,102,578
Sales & Services - Support Activities		925,865	953,641
Endowments		212,892	269,693
Auxiliary Enterprises		1,167,238	1,202,255
Contract and Grant Off-the-Top Overhead		86,531	86,531
DOE Management Fee		21,677	22,000
University Opportunity Fund		191,743	191,743
Other		173,303	178,502
Total Special Funds	$	19,590,773	20,359,982
TOTAL, UNIVERSITY SOURCES	$	20,784,961	21,690,807
TOTAL INCOME AND FUNDS AVAILABLE	$	24,107,449	25,276,578

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 2015-16 budget levels remain unchanged from 2011-12.

	1997-98	2000-01	2008-09	2009-10	2011-12	2015-16
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 2016-17 (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 Est.	7,832,419	9,751,163	7,116,791	4,150,764	2,148,919	478,776	31,478,832

[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 2016-17 (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 Est.	3,130,338	1,330,825		2,827,878	264,600	278,778	7,832,419

[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

	2015-16 Actual	2016-17 Estimated
Berkeley		
General Campus	37,166	38,629
Health Sciences	760	758
Total	37,926	39,387
Davis		
General Campus	32,345	33,313
Health Sciences	2,204	2,233
Total	34,549	35,546
Irvine		
General Campus	30,220	32,338
Health Sciences	1,494	1,490
Total	31,714	33,828
Los Angeles		
General Campus	37,699	38,768
Health Sciences	3,733	3,770
Total	41,432	42,538
Merced		
General Campus	6,850	7,577
Riverside		
General Campus	20,854	22,256
Health Sciences	268	298
Total	21,122	22,554
San Diego		
General Campus	31,921	33,622
Health Sciences	1,847	1,875
Total	33,768	35,497
San Francisco		
Health Sciences	4,514	4,572
Santa Barbara		
General Campus	23,549	24,299
Santa Cruz		
General Campus	18,014	18,785
Totals		
General Campus	238,618	249,587
Health Sciences	14,871	15,046
Total	253,489	264,633

Appendix Display 7: General Campus Full-Time Equivalent Student Enrollment

	2015-16 Actual	2016-17 Estimated
Berkeley		
Undergraduate	28,926	30,387
Graduate	8,240	8,242
Total	37,166	38,629
Davis		
Undergraduate	27,840	28,782
Graduate	4,505	4,531
Total	32,345	33,313
Irvine		
Undergraduate	26,231	28,343
Graduate	3,989	3,995
Total	30,220	32,338
Los Angeles		
Undergraduate	30,615	31,660
Graduate	7,084	7,108
Total	37,699	38,768
Merced		
Undergraduate	6,419	7,078
Graduate	431	499
Total	6,850	7,577
Riverside		
Undergraduate	18,493	19,665
Graduate	2,361	2,591
Total	20,854	22,256
San Diego		
Undergraduate	27,385	28,841
Graduate	4,536	4,781
Total	31,921	33,622
Santa Barbara		
Undergraduate	20,808	21,588
Graduate	2,741	2,711
Total	23,549	24,299
Santa Cruz		
Undergraduate	16,412	16,982
Graduate	1,602	1,803
Total	18,014	18,785
General Campus		
Undergraduate	203,129	213,326
Graduate	35,489	36,261
Total	238,618	249,587

Appendix Display 8: Enrollment History, 1980-81 Through 2016-17

	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 est.	213,326	36,261	355	14,691	264,633

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[5]	1,128	11,442	11,442	11,442	11,442	11,442	60

[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] Proposed increases in Tuition and Student Services Fee are subject to approval by the Regents in January 2017. The proposed 2017-18 levels reflect a $282 increase in Tuition and a $54 increase in Student Services Fee.

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[4]	12,630	2.7%	1,320	13,950	3.0%

[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] Proposed increases in Tuition and Student Services Fee are subject to approval by the Regents in January 2017. The proposed 2017-18 levels reflect a $282 increase in Tuition and a $54 increase in Student Services Fee. 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[4]	12,630	2.7%	1,320	28,014	5.0%	41,964	4.1%

[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] Proposed increases in Tuition, Student Services Fee, and undergraduate Nonresident Supplemental Tuition are subject to approval by the Regents in January 2017. The proposed 2017-18 levels reflect a $282 increase in Tuition, a $54 increase in Student Services Fee, and a $1,332 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[5]	12,630	2.7%	841	13,471	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] Proposed increases in Tuition and Student Services Fee are subject to approval by the Regents in January 2017. The proposed 2017-18 levels reflect a $282 increase in Tuition and a $54 increase in Student Services Fee. 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[5]	12,630	2.7%	841	15,102	0.0%	28,573	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] Tuition projected to increase by 3% in 2017-18 under the long-term funding framework with the Governor. Student Services Fee will increase by five percent as approved by the Regents in November 2014. Assumes a 5% increase in campus-based fees.

Appendix Display 14: 2016-17 Total Charges for Undergraduates and Graduate Academics[1]

	Without Health Insurance		With Health Insurance	
	Undergraduate	Graduate	Undergraduate	Graduate
Berkeley				
Residents	$13,509	$13,509	$16,121	$17,655
Nonresidents	40,191	28,611	42,803	32,757
Davis				
Residents	14,046	13,237	16,338	17,581
Nonresidents	40,728	28,339	43,020	32,683
Irvine				
Residents	13,360	13,064	15,035	16,985
Nonresidents	40,042	28,166	41,717	32,087
Los Angeles				
Residents	12,920	12,683	15,070	16,325
Nonresidents	39,602	27,785	41,752	31,427
Merced				
Residents	13,262	12,931	15,534	15,382
Nonresidents	39,944	28,033	42,216	30,484
Riverside				
Residents	13,581	13,339	15,210	16,750
Nonresidents	40,263	28,441	41,892	31,852
San Diego				
Residents	13,645	13,085	15,658	16,631
Nonresidents	40,327	28,187	42,340	31,733
San Francisco				
Residents	n/a	12,506	n/a	17,310
Nonresidents	n/a	27,608	n/a	32,412
Santa Barbara				
Residents	14,073	13,249	17,223	16,399
Nonresidents	40,755	28,351	43,905	31,501
Santa Cruz				
Residents	13,539	13,386	16,416	17,751
Nonresidents	40,221	28,488	43,098	32,853

[1] Total charges include mandatory systemwide charges (i.e., Tuition and the Student Services Fee totaling $12,294), campus-based fees, and, where applicable, Nonresident Supplemental Tuition and/or health insurance as estimated in July 2016.

Appendix Display 15: 2016-17 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	$25,752	$37,997
Architecture				
Los Angeles	8,400	8,400	24,725	36,970
Art				
Los Angeles	8,478	5,298	24,803	33,868
Biomedical and Translational Science				
Irvine	10,491	10,491	27,476	39,721
Biotechnology Management				
Irvine	12,600	11,718	29,585	40,948
Business				
Berkeley	42,500	31,806	60,155	61,706
Davis	25,242	25,242	42,823	55,068
Irvine	25,224	20,847	42,209	50,077
Riverside	25,191	25,191	41,941	54,186
San Diego	29,895	21,783	46,526	50,659
Dental Hygiene				
San Francisco	14,559	14,559	31,869	44,114
Dentistry				
Los Angeles	25,368	22,173	41,693	50,743
San Francisco	28,401	28,401	45,711	57,956
Development Practice				
Berkeley	18,600	18,600	36,255	48,500
Educational Leadership				
Davis (Ed.D.)	4,410	4,410	21,991	34,236
Berkeley (M.A.)	6,000	6,000	23,655	35,900
Engineering (M.Eng.)				
Berkeley	33,700	24,700	51,355	54,600
Engineering Management				
Irvine	12,600	12,600	29,585	41,830
Environmental Design				
Berkeley	6,300	6,300	23,955	36,200
Environmental Science and Engineering				
Los Angeles	7,698	7,698	24,023	36,268
Games and Playable Media				
Santa Cruz	30,980	30,980	48,731	60,976
Genetic Counseling				
Irvine	9,924	9,924	26,909	39,154
Health Informatics				
Davis	6,810	6,810	24,391	36,636

[1] Total charges include campus-based fees and health insurance as estimated in July 2016. Total charges also include mandatory systemwide charges (i.e., Tuition and the Student Services Fee totaling $12,294); Professional Degree Supplemental Tuition; and Nonresident Supplemental Tuition, disability, and other fees where applicable.

Appendix Display 15: 2016-17 Total Charges for Professional Degree Students by Program and Campus (continued)

	Professional Degree Supplemental Tuition		Total Charges[1]	
	Residents	Nonresidents	Residents	Nonresidents
Information Management				
Berkeley	$7,140	$7,140	$24,795	$37,040
International Affairs				
San Diego	8,376	8,376	25,007	37,252
Journalism				
Berkeley	7,500	7,500	25,155	37,400
Law				
Berkeley	35,164	26,870	52,819	56,770
Davis	34,182	31,188	51,763	61,014
Irvine	31,755	26,004	48,740	55,234
Los Angeles	31,755	26,004	48,080	54,574
Medicine				
Berkeley	21,126	21,126	38,781	51,026
Davis	20,973	20,973	38,554	50,799
Irvine	21,126	21,126	38,111	50,356
Los Angeles	21,537	21,537	37,862	50,107
Riverside	21,126	21,126	37,876	50,121
San Diego	21,126	21,126	37,757	50,002
San Francisco	21,126	21,126	38,436	50,681
Nursing				
Davis	10,530	10,530	28,111	40,356
Irvine	10,530	10,530	27,515	39,760
Los Angeles	10,530	10,530	26,855	39,100
San Francisco	10,530	10,530	27,840	40,085
Optometry				
Berkeley	17,258	16,436	34,913	46,336
Pharmacy				
San Diego	20,832	20,832	37,463	49,708
San Francisco	20,832	20,832	38,142	50,387
Physical Therapy				
San Francisco	12,975	13,341	30,285	42,896
Preventive Veterinary Medicine				
Davis	5,886	6,351	23,467	36,177
Product Development				
Berkeley	24,254	17,640	41,909	47,540
Public Health				
Berkeley	7,974	7,974	25,629	37,874
Davis	7,638	8,121	25,219	37,947
Irvine	6,189	6,189	23,174	35,419
Los Angeles	7,200	7,656	23,525	36,226

[1] Total charges include campus-based fees and health insurance as estimated in July 2016. Total charges also include mandatory systemwide charges (i.e., Tuition and the Student Services Fee totaling $12,294); Professional Degree Supplemental Tuition; and Nonresident Supplemental Tuition, disability, and other fees where applicable.

Appendix Display 15: 2016-17 Total Charges for Professional Degree Students by Program and Campus (continued)

	Professional Degree Supplemental Tuition		Total Charges[1]	
	Residents	Nonresidents	Residents	Nonresidents
Public Policy				
Berkeley	$8,842	$9,394	$26,497	$39,294
Irvine	6,561	6,561	23,546	35,791
Los Angeles	8,034	8,571	24,359	37,141
Riverside	5,952	5,952	22,702	34,947
San Diego	8,376	8,376	25,007	37,252
Social Welfare				
Berkeley	4,398	4,398	22,053	34,298
Los Angeles	6,195	6,651	22,520	35,221
Statistics (MA)				
Berkeley	16,538	16,538	34,193	46,438
Teacher Education				
Berkeley	6,000	6,000	23,655	35,900
Technology and Information Management				
Santa Cruz	23,000	14,000	40,751	43,996
Technology Management				
Santa Barbara	32,970	32,970	48,989	61,234
Theater, Film, and Television				
Los Angeles	10,512	10,512	26,837	39,082
Translational Medicine				
Berkeley (Jt. San Francisco)	32,802	32,802	50,457	62,702
Urban Planning				
Los Angeles	6,561	7,047	22,886	35,617
Veterinary Medicine				
Davis	15,594	15,594	33,175	45,420

[1] Total charges include campus-based fees and health insurance as estimated in October 2016. Total charges also include mandatory systemwide charges (i.e., Tuition and the Student Services Fee totaling $12,294); Professional Degree Supplemental Tuition; and Nonresident Supplemental Tuition, disability, and other fees where applicable.

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