

Office of the President

**TO MEMBERS OF THE ACADEMIC AND STUDENT AFFAIRS COMMITTEE AND
THE FINANCE AND CAPITAL STRATEGIES COMMITTEE:**

DISCUSSION ITEM

For Meeting of September 22, 2022

STRATEGIC CAMPUS OVERVIEW, BERKELEY CAMPUS

LAND ACKNOWLEDGEMENT

UC Berkeley sits on the territory of xučyun (Huichin), the ancestral and unceded land of the Chochenyo-speaking Ohlone people, the successors of the sovereign Verona Band of Alameda County. We recognize that every member of the Berkeley community has benefited, and continues to benefit from, the use and occupation of this land since the institution's founding in 1868. Consistent with our values of community, inclusion and diversity, we have a responsibility to acknowledge and make visible the University's relationship to Native peoples. As members of the Berkeley community, it is vitally important that we not only recognize the history of the land on which we stand, but also recognize that the Muwekma Ohlone people are alive and flourishing members of the Berkeley and broader Bay Area communities today. This acknowledgment was created in collaboration with the Muwekma Ohlone Tribe and Native American Student Development and is a living document.

EXECUTIVE SUMMARY

The University of California, Berkeley campus has just celebrated 150 years of service to California and the world. The University of California's founders aspired for it to be a "people's university" — equally excellent in the traditional liberal arts as in teaching related to professions in agriculture, mining, and mechanical sciences.

In the intervening years, UC Berkeley and the entire UC system have expanded, emerging as a powerful symbol of and engine for California's global leadership in public higher education, scientific discovery, and technological innovation. Today, Berkeley's essential features — broad access, a public ethos in support of the greater good, commitment to traditional and professional curricula, and a focus on research — remain foundational; they are needed by society more than ever before.

So that UC Berkeley can continue to expand opportunity and educate the leaders of tomorrow, careful attention must now be paid to structural issues that, left unaddressed, have the potential to undermine its excellence and societal contributions.

In this presentation to the UC Regents, Chancellor Carol T. Christ is pleased to offer a strategic reflection about Berkeley, assessing strengths, weaknesses, threats, and opportunities.

Her presentation will highlight how the campus is addressing tough issues, leveraging its resources, and pursuing strategic opportunities so that Berkeley can continue to be a provider of excellent undergraduate and graduate education, an engine of social mobility, a creator of discoveries that address society's great challenges, and a contributor to the state's economic growth. The presentation will also highlight how stakeholders in California public higher education can contribute to these important efforts.

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UC Berkeley has achieved extraordinary success. The campus has an outstanding reputation in education and discovery, and is renowned for its incredibly accomplished faculty, past and present. Today's student body is brilliant and increasingly diverse. More recently, UC Berkeley has earned a reputation for facilitating and nurturing entrepreneurship and innovation, with an ever-growing number of faculty- and alumni-led startups and nonprofits that provide a competitive edge to California's economy and communities. Hundreds of faculty and students also enjoy joint, federally funded appointments with Lawrence Berkeley National Laboratory (LBNL), a special place of discovery and mission-driven science that has been inextricably linked to the University's success and reputation in research excellence for over 90 years.

Despite this strong foundation and legacy, however, UC Berkeley faces considerable headwinds, due to persistent challenges and accumulating threats.

To begin with, UC Berkeley has the most acute student housing crisis in the UC system, providing shelter for the lowest fraction of its students of any campus — a reality that is doubly painful for students trying to find housing in one of the most expensive metropolitan areas in the U.S. This housing shortage, in turn, means that admission is denied each year to thousands of qualified undergraduates who would benefit from a Berkeley education, if the campus had more capacity.

UC Berkeley's financial outlook has improved as a result of recent increases in State funding, and the campus is grateful for this reversal of a troubling trend. At the same time, however, serious budgetary challenges persist on the Berkeley campus, as the increases in the cost of instruction and operations continue to outpace the growth in State funding provided to and revenues generated by the campus. Since 1990, State funds per student have declined by 56 percent in actual dollars and 38 percent in inflation-adjusted dollars. As a result, the number of ladder-rank faculty has declined by 9.6 percent, even as the student body has grown by 47 percent. The dramatic increase in the student-to-faculty ratio over these decades—going from 18-to-one in 1990 to 30-to-one in 2020—has challenged the campus in several ways. First, the quality and quantity of mentoring opportunities have eroded. Second, UC Berkeley is unable to meet many students' preferences for the majors and courses they seek. About 45 percent of students are now concentrated in a handful of majors that are restricted by headcount or by direct admissions.

UC Berkeley's future financial prospects are also affected by structural issues related to the manner in which the State and nation fund public higher education. In particular, the funding model for undergraduate education is in structural deficit at UC Berkeley. Tuition and fees, plus State support and applicable philanthropy, do not cover the cost of undergraduate instruction, requiring the campus to rely on revenue-generating activities prone to risk and fluctuation in order to subsidize its educational mission. Additionally, the public funding model for capital projects—including improving seismic safety, providing modern, competitive laboratory and classroom space, and building student housing—is currently insufficient to address urgent needs. To cite one pressing example, in order to meet UC seismic safety standards, 180 buildings at UC Berkeley, representing 7.4 million square feet, must be fixed, replaced, or vacated by 2030, a problem that will require no less than \$8.5 billion to solve. As of now, the source of that needed funding is unknown and uncertain.

The Berkeley campus is not complacent or hesitant when it comes to maximizing revenues and resources to the extent possible and using them to address challenges and support continued innovation. The campus' successful philanthropic campaign, "Light the Way: The Campaign for Berkeley," is projected to exceed its original goal of \$6 billion in support from private sources. That amount is being directed to the undergraduate experience, graduate fellowships, and new places of possibility, such as the Data Science "Gateway" academic building, the Bakar BioEngenuity Hub and a proposed chemistry laboratory building. Twenty-seven faculty lines have been added through philanthropic giving in the campaign — impressive, but far short of our goal of 100. In the last four years, the campus has established four new student housing projects, two of which are philanthropically delivered, one is third party financed, and one is financed by the University. Data science is now the fastest growing major, and — with the support of philanthropy — the campus is moving to establish a College of Computing, Data Science, and Society, the first new college on campus in 50 years.

UC Berkeley is also working to establish undergraduate and graduate aerospace degree programs and is pursuing a transformational, 36-acre research hub with the National Aeronautics and Space Administration (NASA) at Moffett Field. The project will be enabled by a joint, public-private venture that will generate new funding for core campus needs while connecting the UC Berkeley community to Silicon Valley in new ways. With hopes and expectations that the public-private development structure at Moffett Field can be utilized elsewhere, UC Berkeley will also begin a new long-range analysis and planning effort aimed at developing the 180-acre Richmond Field Station around coherent academic and research themes and programs in alignment with campus priorities and in ways that will provide avenues for enrollment and revenue growth.

Based on lessons learned during the COVID-19 pandemic and with new philanthropic support, the campus is investing in new online graduate degree programs in machine learning and engineering that are poised for global preeminence and may help generate revenue necessary to expand online enrollment at undergraduate levels in the future. UC Berkeley and UC San Francisco have been successful partners in the past five years, leveraging philanthropic support to establish a wide array of graduate degree and research programs in areas such as neuroscience, computational precision health, and innovative genomics, and to grow established programs in bioengineering and public

health. With strong support from the UC Office of the President (UCOP) and the State, the campus is also moving toward a new energy system that will decarbonize the Berkeley campus and eliminate about 15 percent of the entire University system’s greenhouse gas emissions. The campus will electrify new and existing buildings, make them more energy-efficient, move to 100 percent renewable sources, and retire an aging natural gas plant.

Even as UC Berkeley faces challenges that are numerous and existential, campus leadership, faculty, students, and staff are committed to and fully engaged in Berkeley’s mission, access and excellence. Encouraged and inspired by increased State support, there is a shared conviction on campus that UC Berkeley can, must, and will continue to be “the people’s university,” to serve future generations of Californians from all backgrounds, to lead in discovery and to define new modes of public-spirited innovation. The campus is fortunate to have a strategic plan in support of those objectives and aspirations, but their realization will require the understanding and support of internal and public stakeholders.

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The following pages contain a detailed overview and analysis of the UC Berkeley enterprise and campus strategic plan to supplement Chancellor Christ’s verbal presentation to the Regents.

CAMPUS OVERVIEW

Introduction and History

UC Berkeley, one of the nation’s premier public research universities, is internationally renowned for excellence across all disciplines, for the opportunities it affords students of all backgrounds, and for scientific discovery, innovation, and cultural creativity. As the University of California’s first campus, founded in 1868, Berkeley has grown from ten faculty members, 40 students, and three fields of study at the time of its founding to more than 1,500 ladder-rank faculty, 45,000 students and over 350 degree programs in 184 academic departments and programs. Guided by the motto “Fiat Lux,” the University brings new knowledge to light, illuminates solutions for bettering the human condition, and serves as a beacon of opportunity for promising young minds and top faculty.

From a group of academic visionaries in 1868 to the Free Speech Movement in 1964 to today’s innovators and change-makers, UC Berkeley is a place where the brightest minds from across the globe come together to explore, ask questions, and advance the greater good. It is a catalyst of economic growth and social innovation — the place where vitamin E was discovered, a lost Scarlatti opera found, the flu virus identified, and the nation’s first no-fault divorce law drafted. Scholars at UC Berkeley have conducted groundbreaking research on urban street gangs and on basic human nutritional requirements, identified why wartime supply ships were failing at sea, invented technologies to build faster and cheaper computer chips, worked with scholars at other institutions to develop CRISPR-Cas9, a revolutionary gene-editing tool that allows scientists to rewrite DNA, and imaged the infant universe.

In keeping with UC's public character, the campus has long served talented individuals, regardless of their means or socioeconomic status. As early as 1897, financial aid was available for "needy and deserving" students. More than a century later, UC Berkeley combines outstanding teaching and research programs with broad access for students of all means — 27 percent are federal Pell Grant recipients, and 23 percent of UC Berkeley first-year students are the first in their families to attend college.

UC Berkeley is committed to providing fair treatment, access, opportunity, and advancement for all. This commitment — at the heart of UC Berkeley's mission as a public university — is also a continuation of the University's historical role in advancing principles and policies for a democratic society. The campus is proud of the full spectrum of its diversity, which encompasses differences in race, ethnicity, gender, age, perspectives, and other dimensions. UC Berkeley's Principles of Community are rooted in and supportive of its mission of teaching, research, and public service. They reflect a passion for critical inquiry, debate, discovery, and innovation. Those principles provide every member of the campus community with the ability to play a role in sustaining a safe, caring, and humane environment in which these foundational values can thrive.

UC Berkeley's Impact on the State and Country

UC Berkeley is an engine of upward mobility. According to research by Berkeley economists Emmanuel Saez and Danny Yagan, UC Berkeley is the top-ranked university in the nation in terms of the number of students who come from families in the bottom fifth of earnings and end up having earnings in the top one percent. Other UC and California State University campuses also fared well on these criteria.

UC Berkeley is an important driver of California's innovation economy, contributing immensely to job creation, social mobility, and a better quality of life for more Californians. It accelerates the translation of ideas and inventions developed by faculty, researchers, and students into products and services that benefit society. As of July 31, 2021, companies under intellectual property (IP) licenses from UC Berkeley have commercialized more than 730 products. Berkeley breakthroughs created the largest portfolio of CRISPR-Cas9 gene-editing patents in the U.S., with 51 patents to date in the US and scores of foreign patents. A drug royalty, monetized for \$93 million, helped fund biological research facilities, students, faculty recruitment and retention, and new initiatives.

For the third straight year, UC Berkeley topped the list as the nation's best university for startup founders, and it remains the second-best university among both private and public schools, according to PitchBook's 2021 ranking of universities. In 2021, a Crunchbase survey ranked UC Berkeley among the top five universities from which the most successful company founders in the U.S. had graduated. Two-thirds of all biotechnology companies in California are spinouts from five universities, including UC Berkeley. As of 2020, alumni startups have raised more than \$36 billion in venture capital through 1,481 startups.

UC Berkeley alumni have founded more than 2,600 companies, three-quarters of which are in California. About one-third of these founders have signed the Founders' Pledge to provide philanthropic support to the campus. Steve Wozniak of Apple, Gordon Moore of Intel, and Eric Schmidt of Google are among the many UC Berkeley alumni who have founded and run successful corporations. Other companies with "Berkeley genes" are electric car manufacturer Tesla, eyewear disrupter Warby Parker, community builder Nextdoor, sustainably sourced shoe trendsetter Allbirds, and online fashion community Poshmark.

Rankings and Recognitions

UC Berkeley is consistently rated among the leading institutions in the world for the quality and breadth of its research and teaching, for the scholarly distinction of its faculty, for the excellence of its Ph.D. programs, and for the funding it receives in support of its research programs. The campus is a place where students can work side-by-side with Nobel laureates, Fields Medal winners, Fulbright scholars, and MacArthur fellows.

UC Berkeley is a member of both the Association of American Universities (AAU) and the Association of Pacific Rim Universities (APRU). In *U.S. News and World Report's* latest global rankings, Berkeley retained its standing as the world's No. 1 public and fourth best university overall. Among other things, the *U.S. News and World Report* global rankings measure a university's international and regional reputation and its performance in academic research, using such indicators as citations and publications. UC Berkeley also ranked No. 1 on *Forbes'* 2021 list of America's Top Colleges. As the first public university to win *Forbes'* top ranking, UC Berkeley was noted for its affordability, excellence, and "rich tradition of leading technological and social change." *Forbes'* new ranking methodology looks more closely at accessibility and affordability and takes into account such factors as the percentage of undergraduates receiving federal Pell Grants, the average annual cost to students, alumni salaries, post-graduation debt, retention and graduation rates, and academic and career awards and honors.

Across 34 subject ratings in *U.S. News and World Report's* 2022 Best Global Universities rankings, UC Berkeley ranked second in chemistry; third in space science and in economics and business; fourth in physics, plant and animal science, and environment/ecology; sixth in mathematics, biology and biochemistry, and computer science; seventh in optics, engineering, and civil engineering; eighth in biotechnology and applied microbiology and in materials science; ninth in geosciences; and tenth in microbiology and in arts and humanities. Additionally, UC Berkeley's graduate programs in English, history, sociology, and psychology each ranked No. 1 in the country in *U.S. News and World Report's* 2023 Best Graduate Schools rankings.

Academic programs

Berkeley's academic enterprise is organized into 14 schools and colleges:

- The Haas School of Business includes undergraduate degrees, MBA programs and executive education.
- The College of Chemistry includes the departments of chemistry and chemical engineering.
- The Division of Computing, Data Science, and Society connects data science education and the School of Information, the departments of electrical engineering and computer sciences and of statistics, the Berkeley Institute for Data Science, and the Center for Computational Biology.
- The Graduate School of Education includes master's and doctoral programs, teacher preparation, an undergraduate minor program, and leadership training.
- The College of Engineering includes the departments of bioengineering; civil and environmental engineering; electrical engineering and computer sciences; industrial engineering and operations research; materials science and engineering; mechanical engineering and nuclear engineering.
- The College of Environmental Design includes the departments of architecture, landscape architecture, and city and regional planning.
- The School of Information includes graduate programs in information, data science, and cybersecurity.
- The Graduate School of Journalism includes a two-year immersive Master of Journalism program.
- The School of Law offers J.D. and J.S.D. programs and is the first U.S. law school to offer M.A. and Ph.D. degrees in jurisprudence and social policy.
- The College of Letters and Science is Berkeley's largest college and includes more than 60 departments in the biological sciences, arts and humanities, physical sciences, and social sciences.
- The Raouf College of Natural Resources includes the departments of agricultural and resource economics; environmental science, policy, and management; nutritional science; and plant and microbial biology.
- The School of Optometry includes the professional program for optometry.
- The School of Public Health includes master's and doctoral programs in a wide range of public health disciplines.
- The Richard and Rhoda Goldman School of Public Policy includes master's and doctoral programs and an undergraduate minor program in public policy.
- The School of Social Welfare includes master's, concurrent master's, doctoral, and credential programs.

UC Berkeley's Strategic Plan

In 2018, soon after Chancellor Christ assumed her position, UC Berkeley faculty, students, staff and alumni undertook a strategic planning process that provided an opportunity for the campus, as a community committed to shared governance and shared responsibility, to envision the institution it wanted to be in ten years and beyond and to create a realistic road map to that future. The strategic planning process explored the following questions:

- What are the critical issues and challenges facing our state, our nation and our world that UC Berkeley is particularly well-suited to address?
- What investments and changes in our instructional and co-curricular programs would have the greatest impact on the quality of our students' experience?
- Accepting that enrollment growth is not entirely within the campus's control, what do we see as the preferred enrollment level for UC Berkeley, and how should this enrollment be distributed?
- How can UC Berkeley foster a sustainable financial model with an evolving diversity of revenue sources?

The resulting strategic plan identified three primary strategies for the campus to pursue, with subthemes as noted below:

- **Empowering engaged thinkers and global citizens to change the world**
 - Discovery will be the foundation of the UC Berkeley experience and the heart of our campus identity.
 - Berkeley will be well known as much for its student experience as for its academic excellence. All students will have the opportunity to connect with others and with the campus, to discover and create, to engage beyond the campus, and to reflect on their experience.
 - Our curricula will inspire adaptive and creative leaders who are adept at working across disciplines.
 - UC Berkeley will prioritize students' basic needs for financial support, housing, and food.
 - UC Berkeley's alumni will be "students for life," returning to their educational home throughout their lifetimes to reconnect, reflect, retool, and then discover and engage in new ways.
- **Focusing on the good: innovative solutions for society's great challenges**
 - UC Berkeley will champion, support, and lead basic research that creates knowledge and makes possible the innovations of tomorrow.
 - Faculty, staff, students, alumni, and our larger community will come together to address the great challenges of our time that Berkeley is particularly well-suited to address, including these six topics: technological change and artificial intelligence, environmental sustainability, the future of democracy, inequality, human health, and the future of public higher education.
 - "Signatures Initiatives" built around these topics will combine UC Berkeley's core values of comprehensive academic excellence and public service; cross disciplinary lines and embrace multiple backgrounds and perspectives; and engage UC Berkeley's defining missions of research, teaching, creative expression, public service, access, and diversity.
- **Embracing the California spirit: diverse, inclusive and entrepreneurial**

- UC Berkeley's student body, faculty, staff and leadership will reflect and embody the full diversity of California and reflecting the Latino/a majority among California high school graduates, at least 25 percent of our undergraduates will be Latino/a.
- An inclusive campus climate will foster equity of experience and ensure that staff, students, and faculty of all backgrounds feel safe, welcome and a true sense of belonging.
- UC Berkeley will extend its reach to more Californians through the innovative and ambitious use of new learning technologies and strategic, non-residential enrollment increases.
- UC Berkeley will continue to create enduring and meaningful partnerships with philanthropic supporters to strengthen our campus and serve our community.
- Athletics, the arts, and student organizations will bring people together and create lifelong bonds.
- UC Berkeley's financial operations will be transparent, accountable, and efficient.

ENROLLMENT AND STUDENT EXPERIENCE

UC Berkeley's student body, like the faculty, is characterized by its passion for challenging the status quo, for educational and extracurricular activities that advance justice and equity, and for innovation in service to the greater good. UC Berkeley students are change-makers, in thought and action. Their ambitions and aspirations know no bounds.

UC Berkeley is a highly selective public university, with about one in seven applicants admitted last year. While the campus is proud of its academic strength and attractiveness to prospective students, it regrets having to turn away so many highly qualified students who would thrive here. UC Berkeley attracts an increasingly diverse student body; roughly 18 percent of undergraduate students and 12 percent of graduate students are from underrepresented groups (African American, Chicano/Latino, and Native American/Alaska Native). Around 16 percent of students come from families in which neither parent has a four-year college degree. More than two-thirds of undergraduates (68 percent) receive some form of financial aid, and 27 percent of all undergraduates are eligible for Pell Grants.

Students at UC Berkeley are civically active and engaged, and their vast interests are reflected in the wide range of clubs and student organizations. The campus offers more than 1,200 student clubs and organizations, from student government to advocacy groups to public service organizations. The Associated Students of the University of California and the Graduate Assembly are highly active organizations with an impact and involvement in student issues that sets the standard for campuses across the nation. UC Berkeley also has a thriving Greek life, with dozens of fraternity and sorority chapters. The California Golden Bears, UC Berkeley's athletic teams, compete in the Pac-12 Conference, and Cal fields 30 men's and women's teams and has more than 850 student-athletes. The campus has won 100 national championships.

UC Berkeley also stands apart for its strong tradition of activism, progressive ideals, and public service. Its history of protests dates back at least to the early 1900s and includes a protest in 1908

led by 16 Hindu students in response to an anti-Asian movement; protests through the 1920s, when faculty fought for a greater degree of shared governance; student protests against fascism in the 1930s; and later, through organizing during the Cold War. The spirit of protest reached a pinnacle during the Free Speech Movement of 1964, when students and faculty protested limitations on their political activities on campus. This paved the way for future engagement around social issues, such as gender equality, enhancement of disability services, and reform of academic curriculum to include ethnic studies.

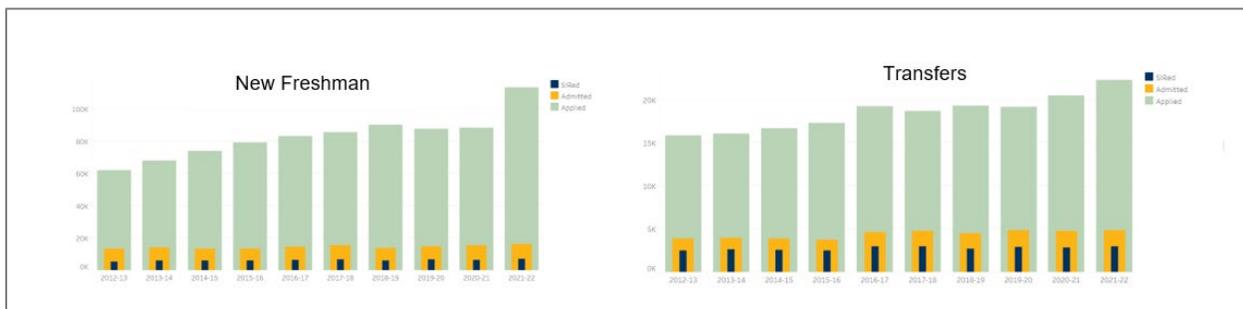
The campus community has also maintained a global orientation and dedication to public service. UC Berkeley historically is the nation’s top producer of Peace Corps volunteers—more than 3,600 since the U.S. government organization’s inception in 1961, and the UC Berkeley Public Service Center engages approximately 6,000 students each year as volunteers in the community.

Access to a UC Berkeley education

The undergraduate admissions process at UC Berkeley utilizes a “holistic review” for students applying to be freshmen that evaluates them on an equally weighted range of both academic and non-academic factors (excluding race, ethnicity, gender, and religion). The campus evaluates transfer student applications using a “comprehensive review” that places more emphasis on academic indicators. As first-year applications have increased over the past decade, UC Berkeley’s rate of admission has generally dropped.

For the fall 2022-23 admissions cycle, UC Berkeley received a record number of applications that totaled more than 147,500. First-year applications increased by 13.6 percent from the fall 2021 cycle to 128,192, while transfer applications dropped by 12.89 percent to 19,349. The diverse makeup of the applicant pool remained consistent with the previous cycle, and UC Berkeley remained a top choice for incredibly talented scholars. As Figure 1 reflects, over 112,846 applications from prospective freshman were received for fall 2022, 16,299 students were admitted, and 6,991 stated their intent to register (SIR). Also received for fall 2022 were 175 applications from transfer students; 4,825 were admitted and 2,967 produced SIRs.

Figure 1: Trends for applications, admits and SIRs

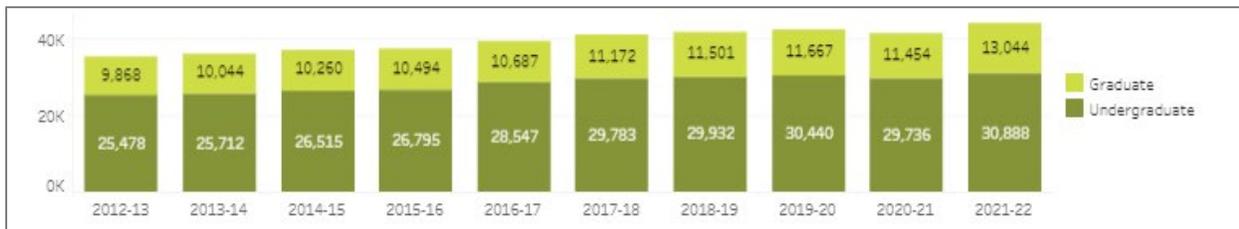


The number of undergraduate applicants to UC Berkeley has grown throughout most of the past

decade. The large increase in applicants for 2021-22 can partially be attributed to the Regents' decision to eliminate the requirement of SAT/ACT scores for applicants. The number of admitted and registered students has also grown over that same period, but within a much smaller range, due to campus capacity constraints. Consequently, the acceptance rate for applicants has declined. While both freshman and transfer applicants tend to have excellent academic credentials, students with a range of GPAs are still able to gain admission and succeed at Berkeley.

As Figure 2 reflects, UC Berkeley's total year-average student enrollment over the past decade is just over 39,400 students, including students in online or other off-campus programs. Both undergraduate and graduate populations have increased during that time, with a significant impact on graduate enrollment due to the pandemic in 2020-21 and 2021-22. Combined graduate and undergraduate enrollment for 2021-22 was 43,931 students.

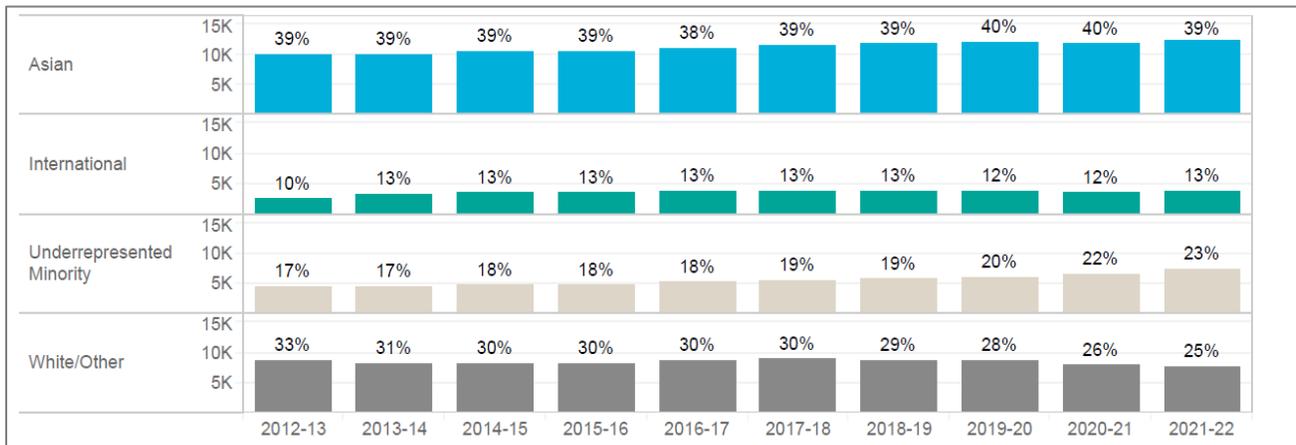
Figure 2: Fall/spring year-average headcount by student level



As UC Berkeley continues to pursue the goal of enhancing diversity on campus, its underrepresented minority population has grown in both headcount and as a percentage of all undergraduates. UC Berkeley continues to improve diversity within its student body¹. UC Berkeley's undergraduate underrepresented minority population has increased six percentage points since 2012-13, as reflected in Figure 3. There are several factors that have led to this increase. Undergraduate admissions moved to a territory management model, which allows territory managers to research and better understand the schools and communities they serve. UC Berkeley continues to refine the reading process and has reorganized the data reviewed by the reader to allow for a deeper contextual understanding of the student in the holistic review. The admissions evaluation reflects each reader's thoughtful consideration of the full spectrum of the applicant's qualifications and is based on all evidence provided in the application and viewed in the context of the applicant's academic and personal circumstances and the overall strength of the Berkeley applicant pool.

¹ The "Underrepresented Minority" ethnicity category includes students who self-identify as African American, Chicano/Latino, Native American/Alaska Native, or Pacific Islander. The "Asian" ethnicity category includes students who self-identify as Asian. The "international" category includes non-U.S. citizens/non-permanent residents who are not counted under specific ethnicities for federal reporting purposes. The "white/other" ethnicity category includes students who self-identify as white or do not provide information. Prior to 2011, students could also choose an "other" ethnic category.

Figure 3: Undergraduate enrollment by ethnicity

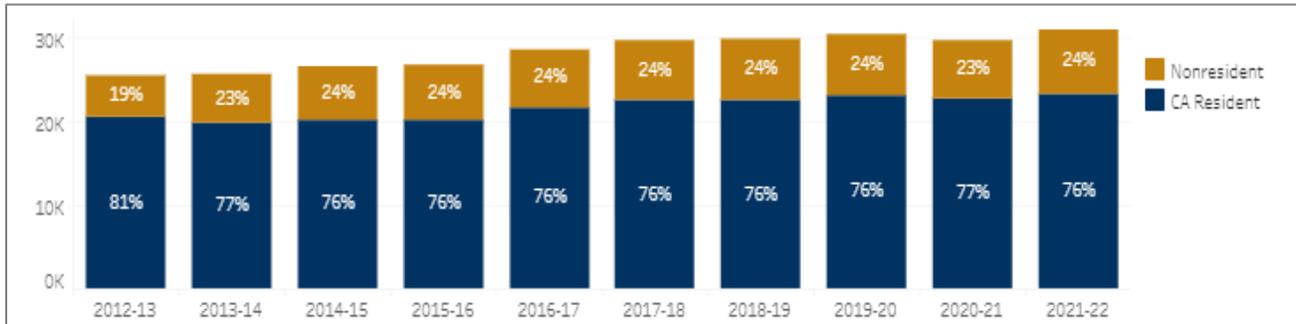


UC Berkeley recognizes that a part of this change can be attributed to the elimination of SAT/ACT scores in the admissions process — thus removing a barrier, but strongly believes that it is also a direct result of the campus’s outreach efforts that encouraged a broader, more diverse cross-section of student applicants. Additionally, the campus has been able to develop a targeted yield, allowing it to retain the admissions offers to a student body that reflects the full diversity of the state. All of this allows Berkeley’s Office of Undergraduate Admissions to seek out excellence, rather than perfection, and admit the best of the pool.

With respect to geographic diversity, UC Berkeley has increased the number of undergraduate California residents over the past few years while maintaining a steady proportion of nonresidents², whose additional tuition dollars help to provide vital support to all undergraduates. As Figure 4 reflects, for the past nine years UC Berkeley has maintained a steady residency mix in support of serving undergraduate students who are California residents. In partnership with the State, UC Berkeley will reduce nonresident enrollment to 18 percent by 2026-27.

² Fee residency is based on whether a student pays nonresident supplemental tuition, not necessarily on where a student is from. Nonresidents sometimes receive exemptions and waivers for nonresident tuition and fees. A residency value of “unknown” includes students for whom UC Berkeley does not always capture fee residency data, such as graduate students in self-supporting degree programs. UC Berkeley’s Student Information System, implemented in fall 2016, captured fee residency data in a new way; this is why the unknown value only began to appear in that term.

Figure 4: Undergraduate enrollment by fee residency

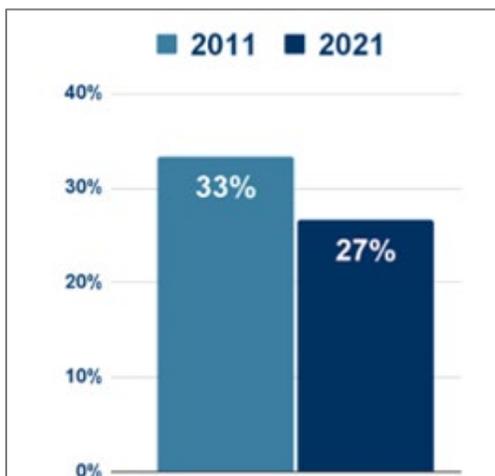


Keeping a world-class UC Berkeley education affordable

From grants to scholarships to loans to work-study and beyond, UC Berkeley offers a wide range of financial aid programs designed to keep a world-class Berkeley education affordable. More than 60 percent of Berkeley undergraduates receive aid, including Pell Grants.

Federal Pell Grants provide need-based aid to students from families with an annual income typically below \$65,000 and are commonly used as a proxy for identifying low-income students. UC Berkeley has a much larger proportion of undergraduate Pell Grant recipients than its private peers. UC Berkeley’s high percentage of Pell Grant recipients among its large undergraduate student body translates into many more low-income students having access to an excellent education. While Pell Grants are a commonly used indicator of low-income status, UC Berkeley supports additional populations of low-income students who are not eligible to receive Pell Grants. These populations include many “Dreamers”—Deferred Action for Childhood Arrivals (DACA) recipients who are not eligible to receive federal funds—as well as students who have exhausted their lifetime Pell Grant eligibility.

Figure 5: Pell Grant recipients



As Figure 5 reflects, the overall number of Pell Grant recipients at UC Berkeley has declined from 33 percent in 2011 to 27 percent in 2021. Longitudinal data from 2011 to 2020 for UC Berkeley’s national peers indicate a downward trend in the percentage of Pell Grant recipients in a majority of public peer institutions. Although the Pell Grant percentage for private peers seems not to have been affected in the same way, the proportion of their Pell Grant recipients has historically been much lower than that of public universities, including UC Berkeley. UC Berkeley is taking steps to attempt to reverse this trend, as discussed below.

One can speculate that the reason for this decline is that the Pell Grant, which used to cover 80 percent of the costs of attending a public four-year institution when it was created by Congress in 1973, now covers less than 30 percent of these costs.³ In addition, the number of students filing the Free Application for Federal Student Aid (FAFSA) has been trending downward nationwide since the COVID-19 pandemic.⁴

However, the percentage of Pell Grant recipients at UC Berkeley was stable between 2019-20 and 2020-21, with a slight increase in the number of recipients—from 8,946 in 2019-20 to 9,045 in 2020-21.⁵ The most recent full-year data available further indicate that nearly half of transfer entrant undergraduates receive Pell Grants, nearly twice the proportion of freshman entrants who receive the grant.

The Berkeley campus has recently implemented two measures that may help to slow or reverse the decline in the percentage of students who receive Pell Grants. First, the campus has implemented “tiered self-help,” which lowers the cost of attendance for eligible first-year students, giving them time to settle into life at UC Berkeley and to potentially find a job and other sources of financial support for their later college years. Second, the campus has lowered self-help levels for all students as funds have been available. These measures have just been implemented, and it will take a number of admissions cycles to understand their full impact.

Ensuring Student Success

Freshman entrants’ six-year graduation rates and transfer entrants’ four-year graduation rates have continued to hold steady, in the range of 90 to 93 percent, over the past decade. As Figure 6 reflects, the overall freshman entrant six-year graduation rate rose slightly, from 92 percent to 93 percent, while the overall four-year graduation rate continued to hold at 81 percent—the highest these rates have ever been. Overall transfer entrants’ four-year graduation rate ticked up to 92 percent from 91 percent, while the overall two-year graduation rate declined slightly, to 60 percent.⁶

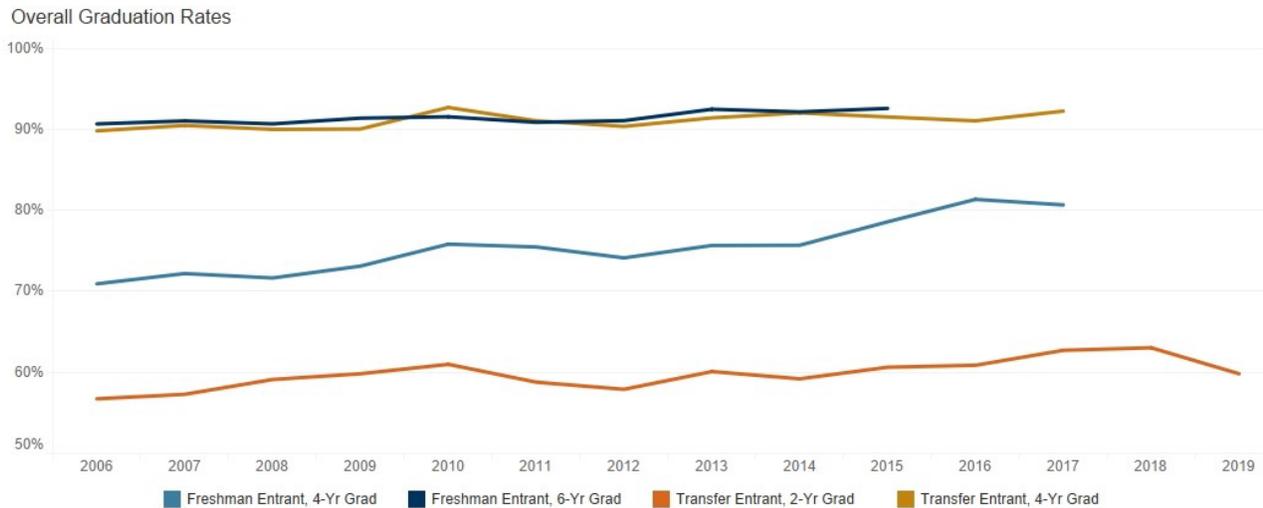
³ D. Hiller, “[Despite \\$400 boost, Pell Grants fall far short of original goal to make college more affordable for low- and middle-income students](#),” Conversation.com, 2022.

⁴ Ann Carrns, “[Thousands of Students Missing Out on College Grants, Study Finds](#),” NYTimes.com, February 4, 2022.

⁵ Data source: <https://pages.github.berkeley.edu/OPA/our-berkeley/pell.html>.

⁶ Data source: <https://calviz.berkeley.edu/#/site/OPAP/views/DisaggregatedGradRates/Overview>.

Figure 6: Overall Graduation Rates



Freshman Entrants

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Fall Entry Cohort Size	4,165	4,226	4,264	4,359	4,115	4,453	4,186	4,729	5,487	5,565	6,263	6,383
6-Year Rate Overall	91%	91%	91%	91%	92%	91%	91%	92%	92%	93%		
4-Year Rate Overall	71%	72%	72%	73%	76%	75%	74%	76%	76%	79%	81%	81%

Transfer Entrants

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fall Entry Cohort Size	1,953	2,037	2,018	2,208	2,202	2,344	2,188	2,258	2,206	2,182	2,589	2,720	2,332	2,554
4-Year Rate Overall	90%	90%	90%	90%	93%	91%	90%	91%	92%	92%	91%	92%		
2-Year Rate Overall	57%	57%	59%	60%	61%	59%	58%	60%	59%	61%	61%	63%	63%	60%

The most recent entering cohort for 6-year graduation rates is Fall 2015. The most recent entering cohort for 4-year graduation rates is Fall 2017. The most recent entering cohort for 2-year graduation rates is Fall 2019. Use the four tabs at the top of this dashboard to navigate to different pages.

Comments or Questions?

Cal Answers

Graduation rates for underrepresented minorities have increased over time, mirroring the trends for freshmen and transfers overall. Among freshmen entering UC Berkeley between 2006 and 2015, the six-year graduation rate for underrepresented minorities increased from 79 percent to 85 percent (compared to an overall rate of 91 percent to 93 percent for freshmen). Although equity gaps in graduation rates persist across demographic groups, among transfer entrants the four-year graduation rate gap has nearly closed (i.e., a four-year graduation rate of 90 percent for underrepresented minority students versus the 92 percent overall four-year graduation rate for transfer students).

Despite UC Berkeley students’ achievements, there is much more the campus can do to support them. A wide range of academic programs is available to help students succeed at UC Berkeley.

Incoming students can take advantage of programs such as Summer Bridge and Freshman Edge, which are held the summer before fall enrollment to help students transition from high school to the campus. The campus is also supporting the Fall Program for Freshmen. That program enrolls over 700 first-year students in small classes for the fall semester and helps them transition to the campus in the spring semester. This past fall, a new enrollment management group was developed on campus that is working to improve the onboarding process for incoming students and to improve the coordination of enrollment and course offerings.

For continuing students, over 90 distinct programs are accessible to help students with their academic experience. These programs include Berkeley Connect, Berkeley Discovery, the Biology Scholars Program, Cal Nerds, the Data Science Scholars Program, Haas Junior Scholars, Berkeley Changemakers, and the Berkeley Skydeck ACE Internship Program.

Berkeley Discovery is a campus-wide, strategic initiative offering immersive, dynamic opportunities—inside and outside the classroom—that promote a sense of purpose and personal actualization. The initiative’s “Discovery Arc”—*Connect, Immerse, Culminate*—begins when students are matched with undergraduate and graduate students and small peer groups. The journey continues as students are invited into immersive and inquiry-driven learning across the curriculum. The arc culminates with a personalized discovery project, whether original research, artistic production, entrepreneurial initiative, or community-engaged service.

The campus is focused on increasing these opportunities for its first-generation students and for those students from underrepresented groups to advance educational equity. Another opportunity, Berkeley Connect, is a mentoring program open to all undergraduate students at Berkeley. Each student who enrolls in the program is matched with a graduate student mentor and a small group of student peers who share academic interests. The program has a proven record of success with students from historically excluded communities.

There is tremendous uncertainty about the effects of the COVID-19 pandemic on K-12 education. Curriculum compression and increased mental health challenges are emerging, and, for the campus, a most prudent action is to anticipate the need for increased academic support for incoming students. Though the ability to measure the preparedness of incoming students without standardized testing has been challenged, UC Berkeley assumes that funding for targeted support programs will be necessary to ensure student success.

For current students, efforts have sprung up across campus to provide additional academic support. These efforts have included providing additional sections to students and expanding scholar programs, such as Computer Science Scholars and Data Science Scholars, which provide mentoring and academic support. The campus has also established a systematic series of surveys of students, instructors, and advising staff. The results of these surveys are widely disseminated on campus and to others in the UC system. The results have helped guide decision-making and instruction. For example, the instructor surveys indicate that students today have greater challenges with time management and assignment completion. To partially address these challenges, the campus is reimagining and refocusing the Center for Teaching and Learning, which now serves as a primary

resource for instructors to learn about accessible course materials, the universal design of courses, and the latest technologies.

Affordable housing for UC Berkeley's students is central to student success

At present, UC Berkeley has the lowest percentage of beds for its student body of any campus in the UC system, and the situation is exacerbated by the campus being situated in one of the tightest housing markets in the country. Berkeley currently provides the lowest proportion of undergraduate and graduate student housing, compared with other UC campuses, and houses approximately 23 percent of its overall student body, 30 percent of its undergraduates, and eight percent of its graduate students.

That lack of student housing has a profound impact on the overall student experience. The most recent Student Pulse Survey (March 2022) found that 15 percent of undergraduates live over ten miles from campus. As distance increased, so too did the negative effect of the commute on respondents' ability or desire to participate in on-campus activities.

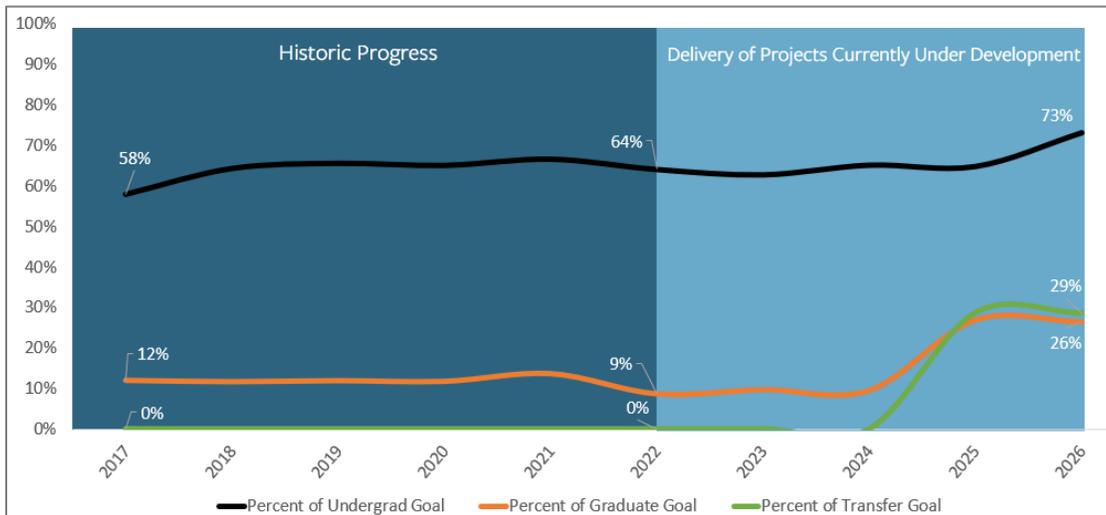
A report on housing insecurity published in May 2022 and based on data from the UC Undergraduate Experience Survey 2020, the UC Graduate Student Experience Survey, and a spring 2022 Student Pulse Survey, reported that approximately five percent of undergraduates and three percent of graduate students experience housing insecurity. With an undergraduate population at Berkeley of over 30,000 students, approximately 1,500 undergraduates experience housing insecurity each year.

The campus's stated goals for housing at UC Berkeley, unveiled in 2017, are to provide:

- Two years of housing for entering freshmen
- One year of housing for entering transfer students
- One year of housing for graduate students
- Up to six years of housing for untenured faculty

In sum, these goals require approximately 8,800 new beds for current enrollment, a number that will increase with enrollment expansion. As Figure 7 reflects, the Berkeley campus is making meaningful progress on its goals through donor development, campus construction, and public-private partnerships to deliver new housing as quickly and efficiently as possible.

Figure 7: Progress on housing goals⁷



Despite this progress, challenges to new housing development to accommodate existing students and expanded enrollment remain. The continued housing shortage on the Berkeley campus is driven by a lack of available land on which to build new housing, legal hurdles to project viability, and construction cost challenges to project feasibility. As an urban campus surrounded by a dense urban environment and natural barriers, the Berkeley campus must develop on contested and expensive sites. The campus identified nearly a dozen sites for new housing development in its 2021 Long Range Development Plan. These sites available for housing development total just 17 acres in the City of Berkeley. Virtually all the sites have existing uses, including academic, administrative, and current student housing, and over half of the total acreage is restricted from development by legal covenants until 2032. The cost and time needed to relocate these uses puts significant limits on the feasibility of developing any one particular housing site.

Legal and political challenges have constrained housing growth in recent years. Lawsuits challenging growing enrollment and its impact on the local off-campus housing market have delayed campus development projects, costing time, money, and resources and resulted in limited headway in delivering new projects. Currently, the Regents-approved housing projects in the Berkeley city limits face multiple lawsuits challenging the environmental approvals under the California Environmental Quality Act (CEQA). Politically, the settlement agreement between the campus and the City of Berkeley, reached in July 2021, paves the way for more student housing in cooperation with the City. As part of this renewed partnership, however, campus acquisition of existing multifamily buildings in the city and partnerships with private owners to house students are discouraged, due to the loss of municipal tax revenue and nonstudent residential supply.

⁷ Declines in progress on housing goals represent either increases to enrollment without new delivery of beds or existing master leases of private housing not being renewed.

The cost of construction in the Bay Area is remarkably high. A robust construction market, paired with ongoing supply chain issues, has driven up the cost of construction of student housing, making debt service more difficult to accommodate. Low-cost loans and additional State assistance for student housing construction can help alleviate the cost pressures on housing development and better ensure affordable student rents.

In the face of these challenges, the Berkeley campus is exploring ways to add housing capacity and creatively deliver beds for its students. The campus is actively considering additional campus-controlled sites for housing development, both within the City of Berkeley and elsewhere. The Albany Village project approved by the Regents in July 2021 is one such example and will deliver 760 graduate student beds via a public-private partnership. Meanwhile, recent changes to the University's debt policy will unlock the potential for campus-financed student housing projects with favorable bond terms.

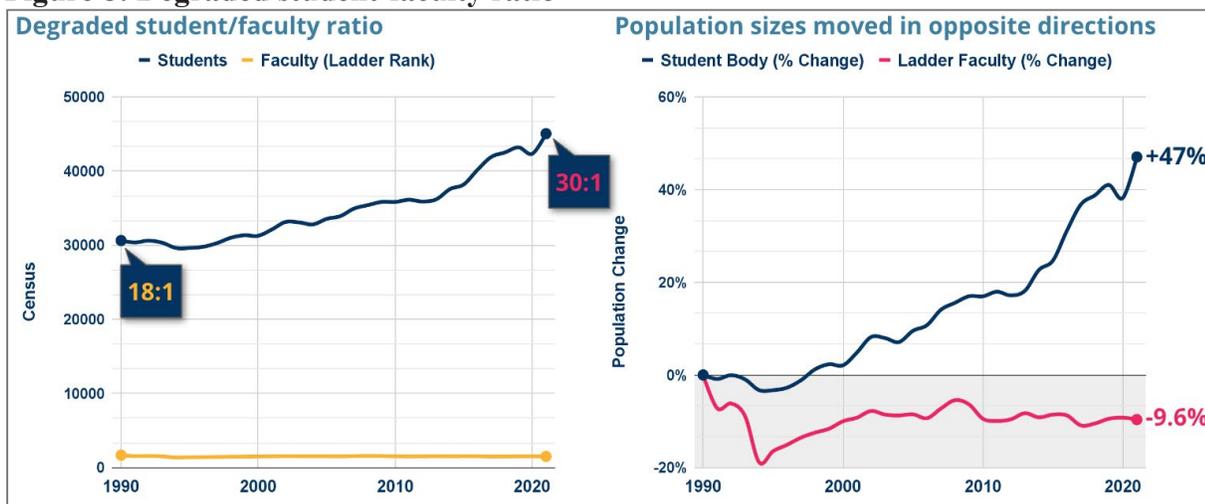
A Deteriorating Student-Faculty Ratio Jeopardizes Student Success

At the heart of UC Berkeley's preeminence are its professors, highly distinguished researchers, and scholars. Twenty-six members of the Berkeley faculty have won Nobel Prizes, including ten current faculty members. Additionally, 32 Berkeley alumni have won the award. Berkeley faculty include recipients of 15 National Medals of Science, four Pulitzer Prizes, three A.M. Turing Prizes, and one Fields Medal, as well as 144 National Academy of Sciences members, 251 American Academy of Arts and Science fellows, 108 Fulbright Scholars, and 145 Sloan Fellows.

Despite significant increases in enrollment, the size of Berkeley's ladder-rank faculty has remained constant for the last 40 years and currently stands at 1,510. Thirty-five percent of UC Berkeley's faculty members identify as women, and 12 percent identify as members of historically marginalized groups, including African American, Latinx, and Native American.

The lure of attending a university like UC Berkeley is the opportunity to learn from and interact with leading scholars in many fields. As Figure 8 reflects, the deteriorating student-faculty ratio jeopardizes that. Moreover, the effects will not be felt equally: First-generation students and those from disadvantaged backgrounds are those most likely to benefit from the mentorship and guidance of top scholars; the opportunity, for example, to find a position in the laboratory of a cutting-edge scientist or work on a discovery project with a world-renowned scholar is transformative. Additionally, while all students benefit from smaller classes and more attention, those from disadvantaged backgrounds benefit most.

Figure 8: Degraded student-faculty ratio



A further advantage for students from an expanded Academic Senate faculty is that the newest faculty often tend to be in the newest subject areas, areas that often cross disciplinary boundaries. UC Berkeley wants its students to have access to the cutting edge. Additionally, demographic changes among those coming out of graduate schools mean that expanding the faculty, especially using the traditional four-to-one ratio of assistant professors versus faculty members with tenured appointments, is a way to rapidly improve faculty diversity.

To this point, 50 percent of the ladder-rank faculty hired in 2020–21 identify as women (whereas only 34 percent of our ladder-rank faculty overall identify as women). Similarly, 24 percent of the ladder-rank faculty hired in 2020–21 identify as members of historically marginalized groups (as opposed to only 12 percent of our ladder-rank faculty overall). This is a marked increase in the representation of groups that have been historically underrepresented from even 8 years ago. Of course, the representation of some groups remains low, and our progress on diversity must continue.

Finally, not growing the faculty may actually cause the faculty to shrink and its overall quality to decline. The increasing teaching load that is a result of the deteriorating faculty-to-student ratio means that world-class faculty at UC Berkeley are increasingly confronting untenable, unprecedented teaching loads that far exceed those found at private peers. Over the course of five years, from 2015–16 to 2020–21, the number of student credit hours (SCH) taught by regular (Senate) faculty increased by 13 percent. Since 2019–20, there has been a 5.5 percent increase in the average undergraduate class size. The rising teaching load is increasingly cited by department chairs as a major factor in unsuccessful retention cases. The inherent danger in these trends is even more pressing as the State and UC system look to UC Berkeley to grow its student enrollment. Forty percent of all SCH were taught by non-regular faculty. That percentage has stayed constant over the last five years.

The decline in 30 years of the student-to-faculty ratio from 18-to-one to 30-to-one⁸ represents a reduction in the quality of the education UC Berkeley provides and a failure to provide appropriate access to excellence. If the campus does not arrest this decline—indeed, significantly reverse it—it will not be able to provide the excellence expected of UC Berkeley, which is the very thing that has made the campus a highly desired professional home for the best professors in the world.

Opportunities to Grow Enrollment

UC Berkeley’s capacity plan, as reflected in Figure 9, provides opportunities for growing the population of California undergraduates and the replacement of nonresident students, along with an expansion of summer FTE. Furthermore, the campus proposes growth across graduate programs, including academic doctoral and self-supporting programs.

Figure 9: Enrollment projection

	2020-21	2025-26	2029-30	Growth
Undergrad –CA	22,463	25,097	26,138	3,675
Undergrad –NR	6,857	6,073	5,660	-1,197
Summer	3,491	2,290	4,050	559
Total Undergraduate (UG)	32,811	33,460	35,848	3,037
State-Supported UG	25,954	27,387	30,188	4,234
%Nonresident	23.4%	19.5%	17.8%	-6%
%Online FWS	1%		2%	1%
%Online Summer	5%		5%	0%
Graduate –GC	7,981	9,295	9,880	1,899
Graduate –HS	725	810	854	129
Graduate –SS	2,400	3,800	4,619	2,219
Total Graduate (GR)	11,106	13,905	15,353	4,247
State-Supported GR	8,706	10,105	10,734	2,028
% Graduate	27%	31%	33%	5%
Total Student FTE	43,917	47,365	51,201	7,284
Total State Supported FTE	34,660	37,492	40,922	6,262

Note: % Graduate and %Nonresident excludes Summer FTE.

This growth aligns with the campus’s Long Range Development Plan, specifically on average one percent yearly enrollment growth and with on-campus enrollment under the 2036–37 target of 48,200. Part of this expansion is accomplished via off-campus enrollment, including new online programs, both graduate and undergraduate, and increased internship and study abroad opportunities. Another major campus objective is increasing student and faculty diversity, along with further advancing campus goals to become a Hispanic-Serving Institution (HSI).

⁸ Ladder-rank faculty. Curriculum and teaching data are available in UC Berkeley's data warehouse reporting system, *Cal Answers*. Ladder-rank faculty headcounts and an analysis of changes in diversity from 1980-present are available at <https://ofew.berkeley.edu/data-and-initiatives/faculty-diversity-data>.

Key areas that need to be addressed and cultivated to grow enrollment

Improving timely graduation and eliminating equity gaps: UC Berkeley has strong first-year retention and graduation rates. Its primary focus is to eliminate disparities in these rates across different socio-economic groups (so-called “equity gaps”), particularly for freshman entrants. As is true of other campuses, achieving UC 2030 goals has become more challenging due to the struggles K-12 and community college students have had during the pandemic and continue to have.

The following are needed to meet UC 2030 goals:

- Growing Berkeley Discovery experiences, including by immersing them in the curriculum and with additional grants.
- Expanding Berkeley Connect mentorship opportunities.
- Expanding academic advising and the services of the Student Learning Center and the Center for Teaching and Learning.
- Expanding support services for instructional technology and accessible course materials.
- Expanding support for health and wellness.
- Increasing the supply of on-campus student housing.

Graduate student and faculty diversity: The Berkeley campus has several initiatives to support student and faculty diversity, including an African American Initiative and cluster hires with a focus on disciplinary areas that will attract applicants from many backgrounds. UC Berkeley has also set a goal to increase to 21 percent the percentage of Ph.D. candidates that come from UC, the California State University, Hispanic-Serving Institutions, Historically Black Colleges and Universities, and Tribal Colleges and Universities. To improve faculty-student ratios and return them closer to their historic levels, UC Berkeley is seeking funds to grow ladder-rank faculty by 600 and \$85.6 million per annum in additional funding to support this growth.

Summer expansion: Expansion of Summer Bridge and Freshman Edge programs will support education equity. In particular, Summer Bridge will provide new students with support and mentoring to help them make a successful transition to the campus and with a foundation for timely progression to a degree. Summer online offerings that peaked during the pandemic are close to returning to pre-pandemic levels. Expanded online offerings could meet student demand and expand summer enrollment.

Online expansion: The campus is exploring creating an Online Program Experience (OPX) unit to support faculty in the design, development, and delivery of online courses and programs. UC Berkeley estimates that it costs \$150,000 to develop a three-unit online course, and online courses need to be refreshed every three to five years. Costs include digital learning specialists, captioning and accessibility, and instructors. (See the Computing, Data Science, and Society strategy below).

Computing, Data Science, and Society: The campus has proposed a new college — the College of Computing, Data Science, and Society — that will house two of the most popular majors on campus. It will connect computing, statistics, humanities, and social sciences. It also will promote an understanding of how computing and data science affect equality, equity, and opportunity and

can help address myriad social challenges.

Berkeley Discovery and Connect programs: Berkeley Discovery experiences are immersive, dynamic opportunities — inside and outside the classroom — that promote a sense of purpose and personal actualization. The initiative’s “Discovery Arc” — Connect, Immerse, Culminate — begins when students are introduced to a creative vision of higher education and matched with undergraduate and graduate students and with small peer groups [Connect]. The journey continues as students are invited into immersive and inquiry-driven learning across the curriculum [Immerse]. The arc culminates with a personalized discovery project, whether original research, artistic production, entrepreneurial initiative, or community-engaged service [Culminate]. The campus is focused on increasing these opportunities for its first-generation students and for students from underrepresented groups to advance educational equity.

Admissions and outreach support: The academic year 2020-21 yielded the most ethnically diverse class in more than three decades. To continue that progress, the campus needs to expand support for admissions and outreach, particularly to expand outreach, improve recruitment and yield, and increase the number of applicant readers. Additional funding could come from increased application fees or other sources.

Significant investment will be required to expand enrollment

One-time costs for capacity expansion:

- \$15 million for Online Program Experience (OPX)
- \$1.2 billion for student housing
- \$1.5 billion for academic and instructional space
- \$300 million for student support space

Costs associated with expanded capacity (ongoing funds):

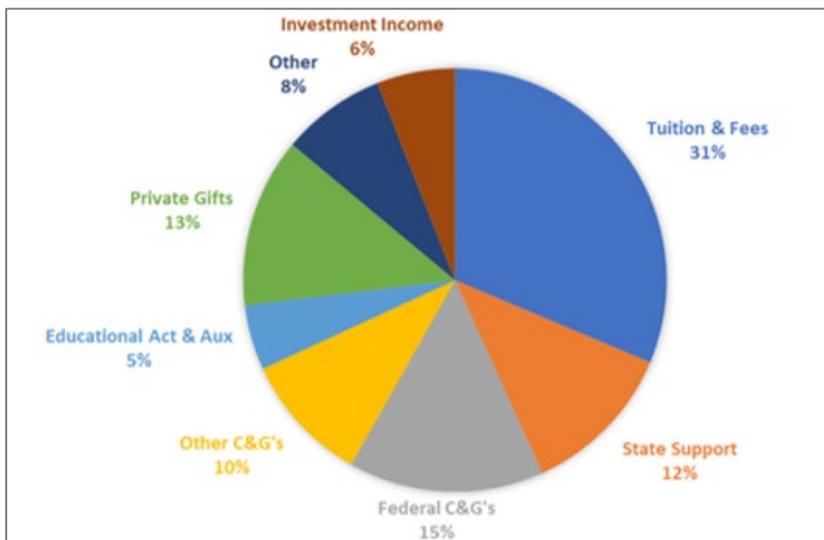
- \$6.5 million to grow Berkeley Discovery and Connect experiences
- \$3 million to expand Student Learning Center services and academic advising
- \$4 million to expand Center for Teaching and Learning support
- \$11 million to expand instructional technology support services
- \$4 million to expand health and wellness support services
- \$85.6 million per annum to grow the faculty
- \$1 million to expand Summer Bridge/Freshman Edge programs
- \$1.5 million for tuition and fee waivers and for free summer courses
- \$4 million to expand online summer courses
- \$4 million to implement a comprehensive curriculum management system and online advising tools
- \$2.5 million for expansion of off-campus internships and study abroad
- \$3 million to increase resources for admissions and outreach

POSITIONING FOR THE FUTURE

A primary threat to student success is the campus’ operating budget. Over the past two decades, at least, *UC Berkeley has faced a growing problem of simple math: The core funding it relies on to support its operations has not kept pace with the growth of the institution and the impact of inflation.*

As Figure 10 reflects, the \$3 billion budget is supported by revenue from a variety of sources, including tuition and fees, State appropriations, federal and other contracts and grants, gifts and investment income, and sales and services of both educational and auxiliary activities. Until 2008, support from the State represented the majority of UC Berkeley’s operating revenue. Since then, however, tuition and fees have become the dominant source of revenue.

Figure 10: FY21 \$3 billion revenue by source



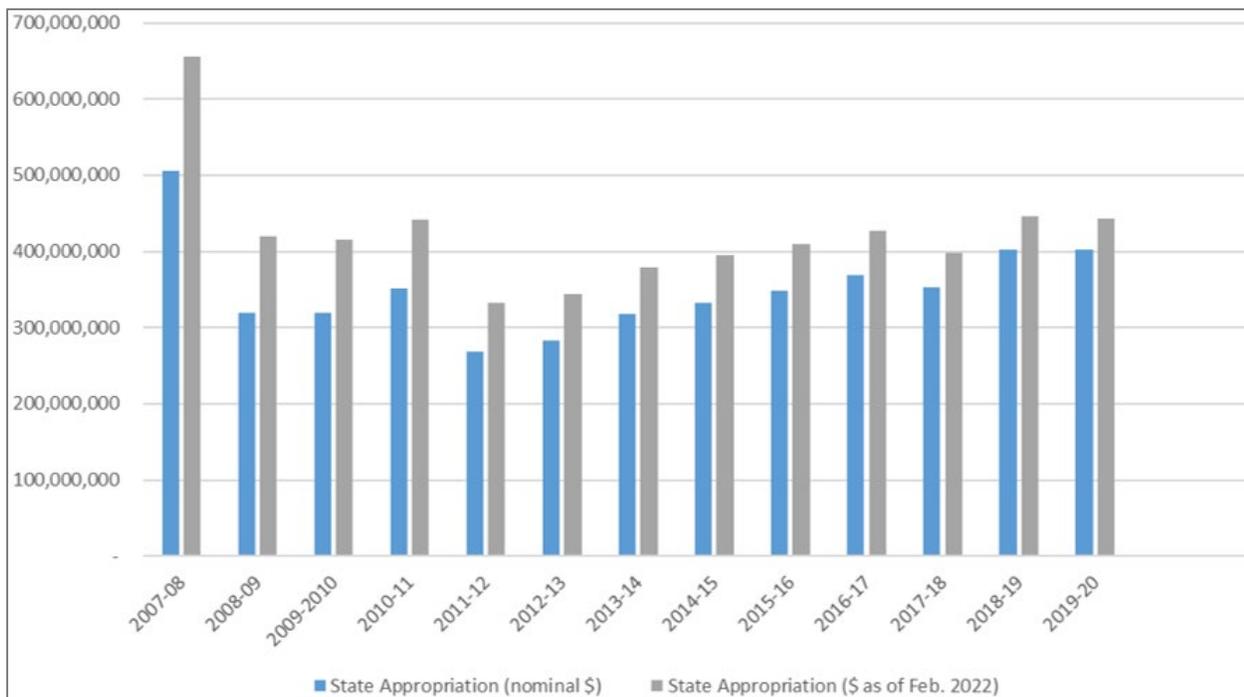
Tuition and fees account for around 31 percent of total revenue, with educational appropriation from the State adding 12 percent. Together, these “core” fund sources represent substantially less than 50 percent of the operating budget, and UC Berkeley increasingly relies on private gifts, contracts and grants, and sales and services activity to support the teaching, research, and public service missions.

UC Berkeley is Specifically Challenged by Historical Tepid Growth in State Support

Even before the COVID-19 pandemic disrupted campus operations and numerous revenue streams, the campus was preparing to face significant financial headwinds in the coming years. As UC Berkeley enrolls more students to help meet the growing demand for a UC education, the State’s educational appropriations have not grown in a commensurate fashion. While the State’s

commitment to public higher education has been increasing in recent years, and the Governor reached a compact agreement with UC to increase the University’s appropriation by five percent a year above fiscal year (FY) 2020 levels, State funding for the Berkeley campus remains well below its pre-Great Recession levels, in both nominal and real dollars (Figure 11). Furthermore, these increases are coupled with a return to a model of campus support for UCOP’s assessments and the possibility of a new round of rebenching that could further, and dangerously, diminish UC Berkeley’s share of State funds.

Figure 11: State appropriation in nominal and inflation-adjusted dollars



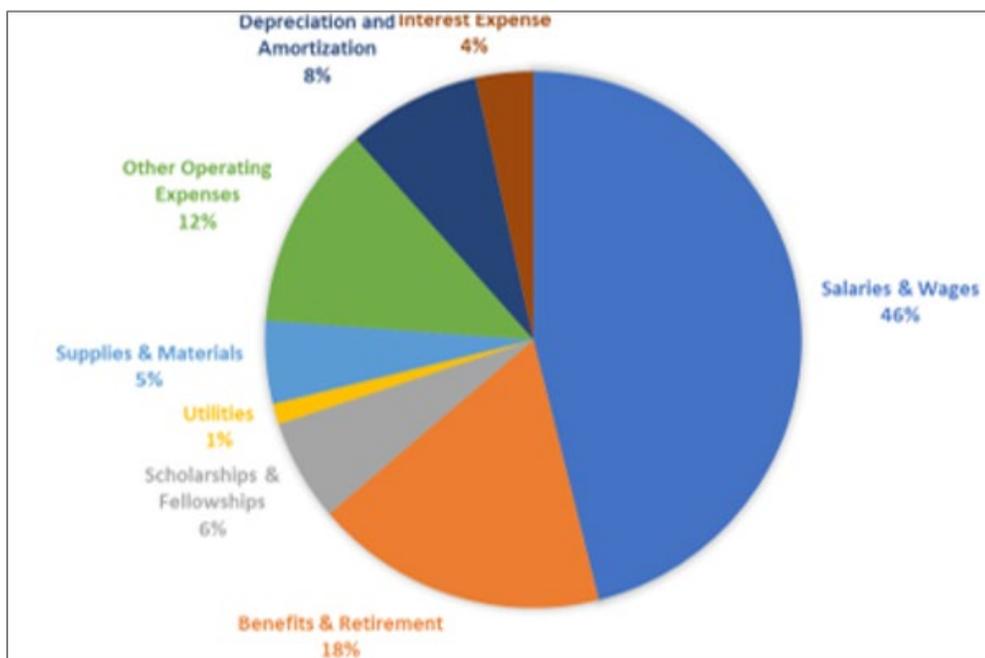
The historical erosion of tuition and fee support has also contributed to financial fragility

Similarly, systemwide tuition and fees have been held flat for the better part of a decade, except for the growth of nonresident supplemental tuition. Adjusted for inflation, this has resulted in the slow erosion of the campus’s ability to sustainably fund the faculty and staff who support the campus mission. The increases resulting from the Tuition Stability Plan — under which the campus will enjoy five years of regular, consistent, cohort-based tuition rate increases tied to inflation at both the undergraduate and graduate levels — are not as beneficial as they might appear. As with State funding, the impact of cohort tuition increases must be tempered by the mandates that return-to-aid be increased from 33 percent to 45 percent (on incremental revenue) and that undergraduate nonresident enrollment be reduced from 24.4 percent to 18 percent by FY27, thereby causing a dramatic reduction in Nonresident Supplemental Tuition, with significant budgetary impacts if not reimbursed by the State. Combined, these impacts will yield relatively flat revenue from tuition,

nonresident tuition, and the Student Services Fee over the next five years in nominal dollars, which effectively translates into lost tuition revenue in real dollars.

As Figure 12 reflects, like most higher education institutions, UC Berkeley's principal investment is in its people. In FY21, 62 percent of UC Berkeley's outlays went toward salaries, wages, and benefits for more than 25,000 faculty, staff, and student employees. Functionally, 56 percent of FY21 expenditures advanced core missions of teaching, research, and public service, with another 15 percent providing direct student services and financial aid support.

Figure 12: FY21 \$3 billion expense by source



Bending the cost curve has been the primary method of balancing the UC Berkeley budget over time. The administrative staff has been cut by approximately 400 positions since its height in FY15, building maintenance has been delayed, and support services have not kept pace with enrollment growth. Those cost-saving measures have had consequential impacts on the campus in areas including employee retention and service satisfaction, and there have been instances of unsatisfactory work environments.

Rising cost of instruction and the funding gap

These revenue pressures are coupled with ever-increasing costs associated with instruction. According to UCOP's latest "Expenditures for Instruction" report to the California Legislature (October 2020), UC Berkeley spends over \$33,000 per undergraduate student in instructional costs, more than any of its sister campuses and more than 20 percent above the systemwide average of

~\$27,000 (Figure 13). Because of this, UC Berkeley must devote more of its non-core resources to instruction than any other campus besides UCLA—only 77 percent of UC Berkeley’s support for undergraduate instruction comes from either State support or tuition and fees, versus 81 percent on average in the UC system. This predicament is echoed in the cost of graduate education, for which UC Berkeley spends 15 percent more per student (\$89,228) than the systemwide average (\$77,216), with only 60 percent of that funding coming from the State or tuition and fees. With inflation continuing to have large-scale impacts on all aspects of operations, these costs are projected to increase over the coming years.

Figure 13: FY20 per-student expenditures for undergraduate and graduate student instruction

	Systemwide	Berkeley	Davis	Irvine	Los Angeles	Merced	Riverside	San Diego	San Francisco	Santa Barbara	Santa Cruz
Undergraduates	\$ 27,538	\$33,269	\$ 29,258	\$ 23,303	\$ 32,867	\$27,820	\$ 24,575	\$ 22,497	\$ -	\$ 25,810	\$ 24,648
State Funds	7,442	6,689	7,186	5,240	6,890	11,113	7,400	4,991	-	5,877	6,798
NRT	2,647	4,077	3,056	2,880	3,557	331	902	3,173	-	2,909	1,988
Other GF	114	112	86	122	125	107	109	105	-	163	237
Stud Tuition & Fees	12,128	14,801	13,652	10,943	13,550	12,729	12,871	10,843	-	13,193	12,691
All Other Funds	5,208	7,590	5,278	4,117	8,745	3,540	3,293	3,385	-	3,667	2,934
STEM UG	\$ 27,770	\$33,956	\$ 30,147	\$ 23,701	\$ 33,162	\$27,672	\$ 25,194	\$ 22,097	\$ -	\$ 25,804	\$ 24,420
State Funds	7,519	6,857	7,454	5,347	6,963	11,037	7,640	4,881	-	5,876	6,716
NRT	2,675	4,182	3,173	2,940	3,595	329	931	3,102	-	2,909	1,964
Other GF	115	115	89	125	126	107	113	103	-	163	235
Stud Tuition & Fees	12,212	15,055	14,004	11,106	13,652	12,674	13,153	10,678	-	13,191	12,590
All Other Funds	5,249	7,747	5,427	4,183	8,826	3,526	3,357	3,334	-	3,666	2,915
Non-STEM UG	\$ 27,347	\$32,702	\$ 28,352	\$ 22,998	\$ 32,657	\$27,973	\$ 24,144	\$ 22,962	\$ -	\$ 25,813	\$ 24,869
State Funds	7,378	6,550	6,912	5,158	6,838	11,192	7,233	5,117	-	5,878	6,876
NRT	2,624	3,990	2,937	2,834	3,530	333	882	3,256	-	2,910	2,011
Other GF	113	110	82	120	124	108	107	108	-	164	240
Stud Tuition & Fees	12,058	14,591	13,294	10,819	13,478	12,785	12,674	11,036	-	13,195	12,789
All Other Funds	5,174	7,461	5,126	4,067	8,688	3,554	3,248	3,445	-	3,667	2,952

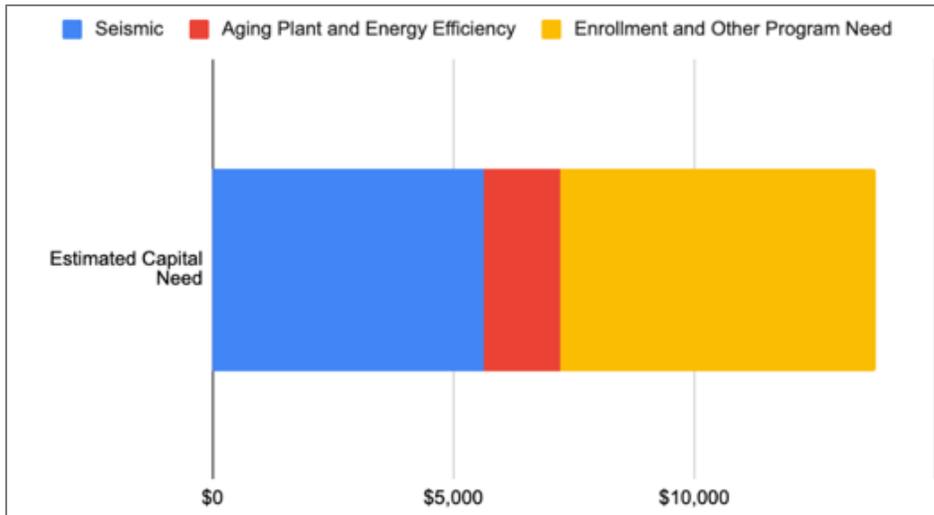
	Systemwide	Berkeley	Davis	Irvine	Los Angeles	Merced	Riverside	San Diego	San Francisco	Santa Barbara	Santa Cruz
Graduates - General Campus + Research	\$ 77,216	\$89,228	\$ 76,466	\$ 74,910	\$ 79,780	\$92,529	\$ 72,460	\$ 67,060	\$ -	\$ 82,190	\$ 60,444
State Funds	14,250	11,784	13,028	10,687	12,323	30,455	15,238	10,676	-	12,383	12,437
NRT	4,987	6,976	5,434	5,699	6,191	929	1,864	6,674	-	5,992	3,603
Other GF	215	192	153	242	218	294	222	221	-	336	428
Stud Tuition & Fees	30,806	34,557	32,129	30,610	33,156	38,872	33,193	27,682	-	35,317	27,655
All Other Funds	26,958	35,719	25,722	27,671	27,892	21,979	21,943	21,807	-	28,163	16,321
STEM Grad GC + Research	\$ 78,492	\$92,764	\$ 79,377	\$ 77,271	\$ 80,821	\$92,648	\$ 74,802	\$ 66,455	\$ -	\$ 82,707	\$ 59,970
State Funds	14,431	12,126	13,553	10,940	12,466	30,392	15,807	10,463	-	12,400	12,294
NRT	5,052	7,190	5,662	5,840	6,266	927	1,933	6,535	-	6,000	3,560
Other GF	218	198	160	248	221	293	231	216	-	336	423
Stud Tuition & Fees	31,004	35,074	32,816	30,994	33,355	38,827	33,863	27,358	-	35,344	27,477
All Other Funds	27,787	38,176	27,187	29,249	28,514	22,208	22,969	21,882	-	28,626	16,217
Non-STEM Grad GC + Research	\$ 75,916	\$86,349	\$ 73,007	\$ 72,961	\$ 78,990	\$92,021	\$ 69,826	\$ 67,559	\$ -	\$ 81,709	\$ 60,991
State Funds	14,088	11,503	12,462	10,489	12,221	30,427	14,711	10,918	-	12,366	12,580
NRT	4,929	6,800	5,188	5,588	6,137	928	1,800	6,832	-	5,983	3,645
Other GF	212	188	146	237	216	294	214	226	-	336	433
Stud Tuition & Fees	30,628	34,132	31,387	30,310	33,013	38,852	32,574	28,049	-	35,289	27,833
All Other Funds	26,058	33,726	23,823	26,337	27,404	21,521	20,527	21,535	-	27,736	16,499

Unmet capital needs also present a threat for the future

UC Berkeley’s capital priorities are reinvestment for seismic safety, modernization, and improvements that support research and instruction, in addition to new construction for housing and signature initiatives. In the 2021-2027 Capital Financial Plan, UC Berkeley has identified more than \$13.8 billion of capital need, of which only ~\$1.5 billion has a funding strategy. The total capital need, as reflected in Figure 14, includes more than \$8.5 billion to address seismic safety in more

than 180 buildings, more than \$800 million for student housing, and more than \$500 million for deferred maintenance.

Figure 14: Estimated capital need (in \$000's)



Addressing seismic need

Given the magnitude of UC Berkeley's seismic need, its aging facilities in need of modernization, and substantial deferred maintenance, there is a significant and urgent need for ongoing investment. The majority of buildings across the Berkeley campus were built before 1980 and are, at the very least, candidates for seismic improvements.

Over the past three years, the campus has reviewed its building inventory according to the UC Seismic Safety Policy requirements. Initial building evaluations identified approximately 180 buildings (7.3 million gross area feet) that need seismic improvement (rated V and VI) at an estimated cost of more than \$8.5 billion. Buildings have been prioritized using numerous factors, including the UCOP seismic risk model. The group of buildings with the highest priority includes 33 campus academic buildings requiring more than \$1.6 billion in capital investment. Seismic improvement is a campus priority, and as capital resources become available for this purpose, projects are implemented. There is no funding source identified at this time for the vast majority of required seismic improvements.

In the recent past, Berkeley has invested more than \$1 billion in seismic improvements across more than one million square feet of space in dozens of buildings. These recent seismic improvement projects represent approximately \$250 million in State support and \$750 million in non-State support, including philanthropy. Recent seismic improvement efforts include:

- Construction of Berkeley Way West, which provided seismically improved space to replace functions in Tolman Hall.

- Seismic improvements to Giannini Hall, a building on the National Register of Historic Places that houses Rausser College of Natural Resources programs.
- Seismic improvements to International House, a student housing facility, and to Woo Hon Fai Hall, home of the new Bakar BioEnginuity Hub.
- Moffitt Library improvements, which are currently underway and expected to be complete this fall.
- Pending Regental approvals later this year, construction on the Gateway, a new academic building that will relocate several departments currently in buildings in need of seismic improvements.
- In 2024, construction on the Academic Replacement Building, which will replace all the general assignment classrooms in Evans Hall.

Improving energy efficiency

The cogeneration plant that supplies 90 percent of campus energy has less than ten years of usable life remaining. Replacement is necessary and a critical priority. A new campus energy system will require an investment of \$750 million to construct a new central plant, install new distribution systems, and replace building controls and related components. Additionally, in support of the UC Sustainability Policy, capital projects and deferred maintenance work that transition buildings to clean energy and improve energy efficiency are prioritized.

Aging plant

UC Berkeley currently has a backlog nearing \$1 billion in State-supportable deferred maintenance needs. The campus spends approximately \$5 million to \$10 million annually on deferred maintenance, about ten to 15 percent of the amount recommended as industry best practice, resulting in an ever-growing deferred maintenance backlog. Although recent State investments in UC deferred maintenance and energy efficiency have enabled progress on the most pressing maintenance needs, the campus's backlog continues to grow due to aging infrastructure, outdated building systems reaching the end of their useful lives, and life-safety systems in need of replacement.

Shortage of academic and support space

To maintain competitive alignment with peer institutions and to support increasing demand, many aging buildings, most notably STEM buildings, require substantial investment in upgrades to accommodate research and student enrollment. In the last decade, enrollment at UC Berkeley has increased by 19 percent, with enrollment by STEM undergraduates and graduates increasing by 45 percent and 33 percent, respectively.

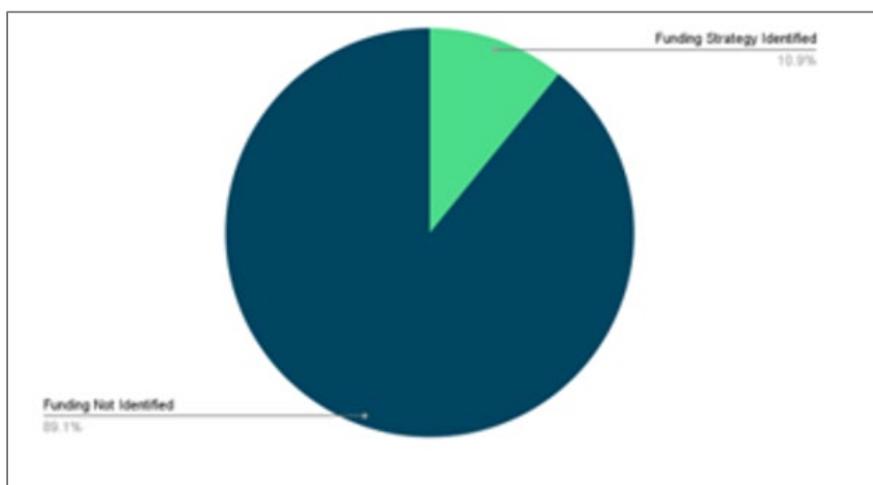
The campus anticipates starting construction in 2022 on the Gateway building and in 2023 on an expansion of the Engineering Student Center. These two projects represent more than \$650 million in philanthropic investment. Potential funding strategies, largely philanthropy, have also been identified for nearly \$500 million of renovations and new construction within the College of

Engineering and the College of Chemistry. While significant, there remains a capital need of more than \$2 billion for other Berkeley STEM facilities to address seismic improvements, deferred maintenance, and programmatic needs.

Capital funding

UC Berkeley has a significant proposed capital need that exceeds \$13.8 billion. Approximately 89 percent of that need does not yet have a funding source, as reflected in Figure 15. Of the projects with funding plans, the campus expects to rely on campus funds, external financing, philanthropic gift funds, and State funds.

Figure 15: \$13.8 billion of capital need



Declining State support, impacts from the COVID-19 pandemic, and years of financial challenges have depleted UC Berkeley's central reserves. Limited reinvestment and selective construction to address campus priorities will require a multifaceted funding strategy of State support, private partnerships, and philanthropy. UC Berkeley expects its capital investments to be limited to the most critical and strategic priorities and needs and its decisions to reflect its reliance on extremely limited State funding and philanthropic giving.

To summarize what has been described in full above:

- State support has been reduced since 2000 in both real and nominal dollars.
- Limited growth in tuition and fees has not kept up with the cost of instruction.
- Reduced support from the State for capital improvements (e.g., no general obligation bonds since 2006) has required the campus to increasingly rely on operating funds to meet these needs.
- Inflationary pressures — particularly related to compensation and construction — have further eroded the campus' capacity to fund institutional priorities.

UC Berkeley has striven to meet these challenges head-on through the development of alternative revenue streams that include philanthropy, new and innovative academic programs, expansion of externally funded research, and entrepreneurship. While these strategies have allowed the campus to maintain its extraordinary programs and reputation, they are not, overall, an adequate or sustainable substitute for the core funding from the State and the Regents that enabled UC Berkeley to become one of the world's great universities.

Reimagining philanthropy

“Light the Way: The Campaign for Berkeley” launched publicly on February 29, 2020 and aims to raise \$6 billion—the campus’ most ambitious fundraising goal to date—by the end of 2023. A hallmark of this historic campaign is its focus on funding “the core,” rather than the “nice-to-haves.” Campaign priorities include expanding the faculty ranks and graduate student fellowships; improving the undergraduate experience; supporting multidisciplinary research initiatives aimed at solving the grand challenges of our time; and building philanthropically funded facilities for housing, athletics, teaching, and research. With 18 months remaining in the campaign, UC Berkeley has already raised \$5.63 billion from over 205,000 donors.

Throughout the campaign, UC Berkeley has posted record-breaking fundraising results, including from two fiscal years in which funds raised each year exceeded \$1 billion. The campaign’s success is also reflected in the number of new donors, with more than half of all donors making their first gift to UC Berkeley.

Diversity, equity, inclusion, belonging, and justice (DEIBJ) is an overarching fundraising focus across all the campaign priorities, and the campus has made great strides toward enhancing the undergraduate experience and ensuring that students from all backgrounds feel welcomed and supported. During the campaign, the campus has raised over \$685 million in support of equity and inclusion, student affairs, and undergraduate support. Additionally, UC Berkeley has raised \$364.5 million for two student housing projects—Anchor House, a transformative project supporting transfer students, and Intersection, an apartment-style housing project for graduate students and postdoctoral researchers—providing housing options for two critical student groups at UC Berkeley.

UC Berkeley’s fundraising has been especially critical in supporting core priorities of the campus related to faculty, student support, housing, and critical capital development, while also catalyzing entrepreneurship:

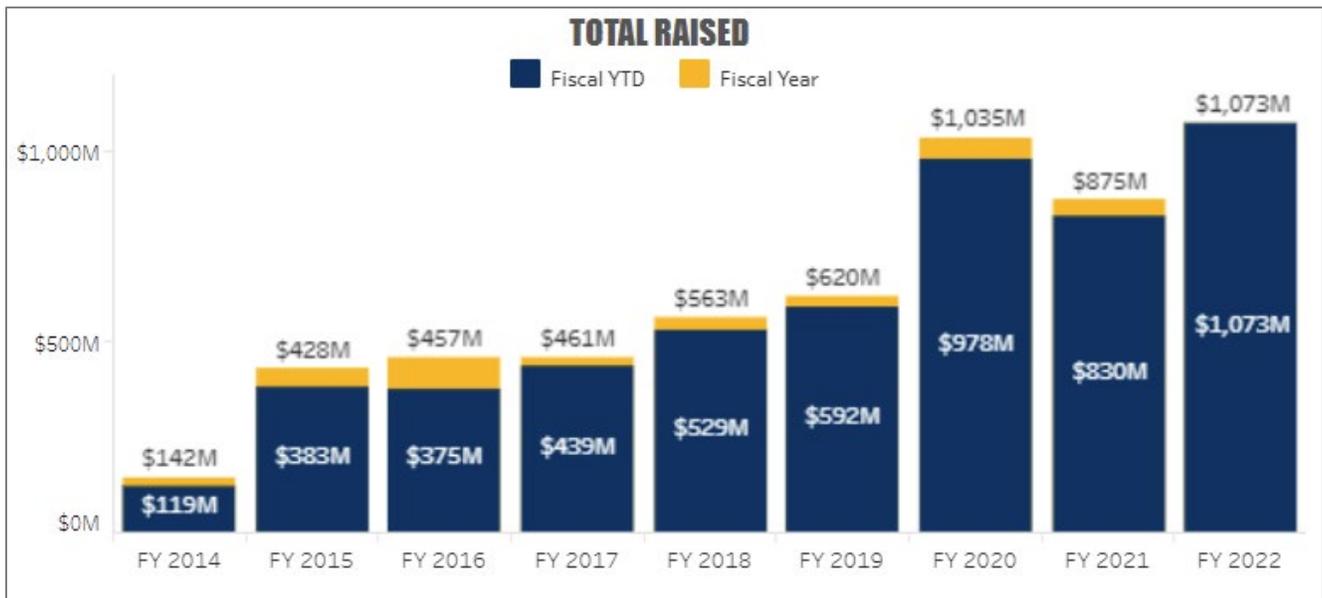
- Philanthropic support has enabled the campus to add 27 new faculty positions toward the campaign’s goal of 100 new positions. In total, \$697 million has been raised for faculty and graduate student support during the campaign.
- Two new student housing projects, Intersection and Anchor House, both 100 percent donor-funded, have added 920 beds to the campus’s housing stock.
- UC Berkeley has nearly tripled the amount raised for capital infrastructure in this campaign, when compared to the last campaign, for critical endeavors including the Gateway, home of

the Division of Computing, Data Science, and Society; Heathcock Hall, a modern laboratory building for UC Berkeley’s top-ranked College of Chemistry; and the Center for Connected Learning in the Moffitt Undergraduate Library. Other capital projects in the campaign include the Athletics Gender Equity Campaign for women’s softball and beach volleyball facilities, the Legends Aquatics Center, the Bakar BioEnginuity Hub, the Bechtel Student Center and Jacobs Hall in the College of Engineering, and Chou Hall at the Haas School of Business. During the campaign, UC Berkeley has raised a total of \$1.1 billion for capital projects, including for student housing and other new and improved spaces.

- The campus’ new space for innovation and entrepreneurship, the Bakar BioEnginuity Hub, provides fellowships and programming for UC Berkeley students and researchers, equipping biological science entrepreneurs with laboratories, offices, equipment, and shared community spaces. Funded entirely by private philanthropy, the hub empowers researchers and startups to accelerate the benefits of cutting-edge science and engineering for society.

Figure 16 reflects UC Berkeley’s year-to-date fundraising totals since the start of the campaign on Jan. 1, 2014.

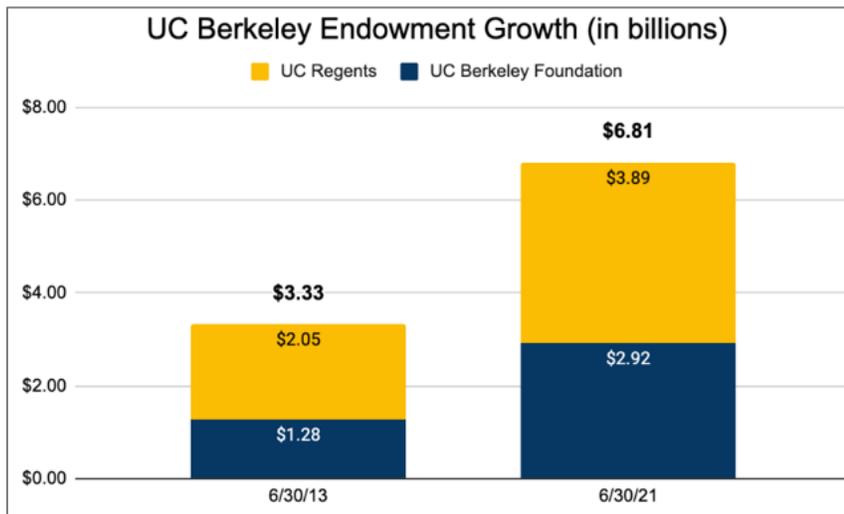
Figure 16: UC Berkeley’s year-to-date fundraising totals since the start of the campaign



As of June 22, 2022

Over the last eight years, UC Berkeley has more than doubled the size of its endowment from \$3.33 billion on June 30, 2013, to \$6.81 billion on June 30, 2021 (see Figure 17 below).

Figure 17: UC Berkeley's endowment growth



Building on UC Berkeley's core strength of academic excellence

Consistent with its mission of comprehensive excellence, the breadth and quality of UC Berkeley's academic programs constitute one of its greatest strengths. As a public university, UC Berkeley strives to increase access to these programs for students from California and beyond. The campus wants to ensure that the state has the workforce it needs in the 21st century and to expand opportunities for personal and professional success, particularly for students historically underrepresented in higher education. To that end, total enrollment at UC Berkeley has grown by over 8,500 students (24 percent) over the past decade, with 63 percent of that growth at the undergraduate level.

Expanding access to UC Berkeley's academic programs represents not only a mission-driven priority, but also a strategy to ensure the long-term financial sustainability of the campus. This is particularly true with respect to expanding access to professional master's degree programs, both State-supported (PDST) and self-supporting (SSGPDP). Since the year 2000, the number of professional master's degree programs on campus has grown from 20 that enrolled approximately 2,800 students to 39 today that enroll approximately 7,400 students. The student fees from these programs generated almost \$200 million in FY20 funds that are used to support not only the programs themselves, but in the case of self-supporting programs, to provide critical support to the college or school delivering them, as well as to the campus in general.

In addition to professional master's degree programs, UC Berkeley has deployed an innovative way to expand access to many of its undergraduate courses. Through UC Berkeley Extension's Concurrent Enrollment program, courses with excess seat capacity are made available to non-matriculated students at the discretion of the academic department. Many of these students are from other countries with universities that will grant course credit toward their degrees. Participating in the Concurrent Enrollment program provides students with an opportunity to experience UC

Berkeley's instruction, as well as life in the Bay Area. Revenue generated from the program almost doubled from FY16 to FY20. Unfortunately, the pandemic limited participation last year, though enrollment is now on the rise again.

Strategic investments in online and hybrid programs

For the past several years, UC Berkeley has been strategically investing in a variety of programs that support both online and hybrid experiences for its students. Key to this investment has been ensuring that programming continues to support and improve upon the high-quality experience delivered at UC Berkeley and across the UC system.

During the pandemic, the campus has been able to take advantage of these early strategic investments, ensuring that it continues to provide a resilient and high-quality education, even during this disruption. Philanthropy, federal aid, and student fee contributions over the past several years have been critical to achieving these goals and were dedicated to ensuring that faculty and graduate student instructors have what they need to continue to teach at the highest level.

Today, UC Berkeley is poised to innovate and expand online education offerings, increasing access and enrollment possibilities. Yet, challenges are present, particularly with regard to the need for upfront capital for the campus to provide the services itself rather than contracting with third-party vendors.

Given the above constraint, the campus is seeking philanthropic support to launch an online program experience (OPX) service organization that would support and incentivize self-supporting graduate degree programs. That support is critical to developing undergraduate programs, which need subsidies to be financially viable, given constraints around undergraduate tuition and available State funding. The campus is also launching a new procurement policy for online education platforms and third-party service providers that will protect students, follow accessibility requirements, and best practices, and ensure that the campus is financially rewarded for its successes.

Lastly — and most importantly — the campus is full of ideas from faculty and students, who are working to establish innovative online education programs that represent the best of what UC Berkeley has to offer to California and the world. Highlights include:

- The *Graduate Remote Instruction Innovation Fellows Program*, designed and implemented to expose graduate student instructors to the most up-to-date pedagogical innovations in remote learning so that they can prepare and deliver their instruction as effectively and inclusively as possible.
- The *Semester in the Cloud Remote Program*, which served the 31 gateway, critical path, high-impact and high-freshman enrolled courses across 19 departments and nine colleges/divisions that were chosen to be part of this initial cohort. Faculty in the program were paired with staff specializing in instructional design, digital pedagogy, and audio/video production for guidance in digital learning design and delivery, digital learning strategies

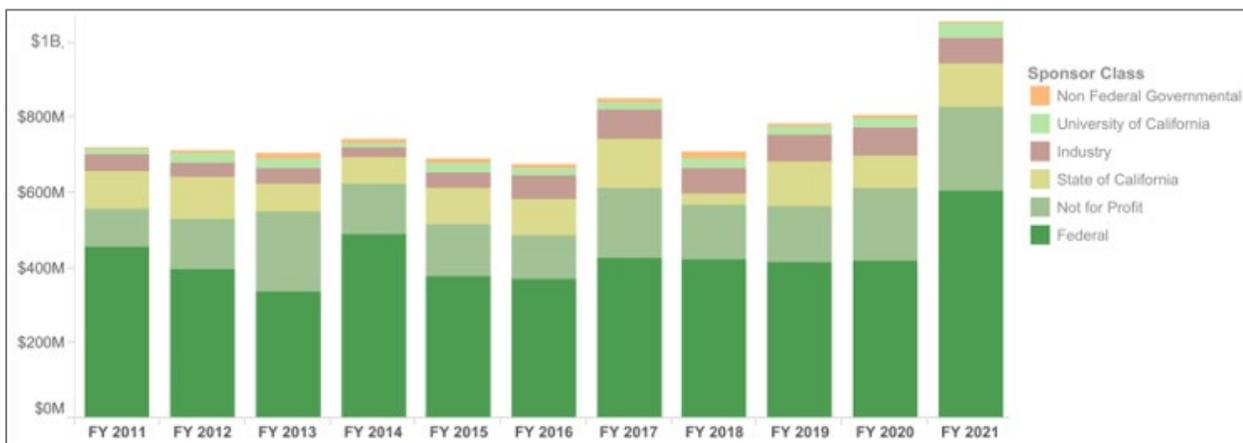
- and in technical implementation of content within our Berkeley Learning Management System, called bCourses, for remote instruction.
- The *Student Technology Equity Program*, which this year provided 786 students across 47 states with over 9,400 pieces of no-cost/low-cost hardware, like laptops, Wi-Fi hotspots and peripherals (tablets, microphones, webcams, and headphones).

Drawing on UC Berkeley’s Unparalleled Research Reputation

UC Berkeley’s reputation for unparalleled research draws leading faculty, graduate students, and other researchers to California, and unique research opportunities are also offered to undergraduates. With more top-ranked graduate programs than any other U.S. university, UC Berkeley typically ranks as one of the top five research universities overall and consistently as the top public research university. The depth and diversity of UC Berkeley’s research programs provide a uniquely creative environment for scientific discovery, technology and policy development, and deep exploration of the social and ethical implications of a changing world.

With over \$1 billion in new project funding in FY21, as noted in Figure 18 below, UC Berkeley reached a new record in funding levels, more than \$200 million over the previous peak in FY17. Indeed, our FY21 total is 43 percent greater than the average of the preceding ten years (\$739 million). These awards include all sponsored projects, but not gifts.

Figure 18: Research funding (\$ in millions)



Most of that FY21 growth relative to FY17 (\$180 million) was in federal funding, and especially from the National Institutes of Health (NIH), the National Science Foundation (NSF), and the National Aeronautics and Space Administration (NASA). In addition, while not shown on this chart, many UC Berkeley faculty have appointments as faculty scientists at LBNL and were principal investigators on over \$100 million in research funding through LBNL, much of that from the Department of Energy (DOE).

UC Berkeley has recently launched several projects that will affect California's future in health, climate resilience, public policy, and advanced technology, leading to new entrepreneurial activities in the form of technology licensing, startup companies, and graduates who will create new products and even new industries. They will also help California realize its goals of a sustainable and equitable future. These are just a selection of highlights from the past.

The largest increase in federal funding was from NASA, which awarded \$65 million in contracts and grants to Berkeley in FY21, an increase of over 52 percent relative to the previous FY17 funding peak. Most of this went to investigators at the Space Sciences Laboratory (SSL), which is leading or contributing to several large space missions, including the ESCAPEDE satellites, to orbit Mars and study its extended atmosphere; the GLIDE small satellite, to understand the edge of Earth's atmosphere; the HERMES instrumentation, to understand the causes of space-weather variability; the THEMIS project, to analyze the time history of events during substorms (THEMIS); and the COSI gamma ray telescope, to study the evolution of the Milky Way galaxy. Overall, SSL has seen almost half a billion dollars in new commitments from NASA during the past four years and is hiring more than 30 new aerospace engineers and technical support personnel to carry out these new missions. These projects are pursuing fundamental knowledge about the universe and the physical laws that govern it, but they also demonstrate enormous capabilities in the design, operation, and construction of space travel, instrumentation, and engineering.

UC Berkeley continues to be a leader in research on semiconductor technology and computing systems, which are critical to the California economy. Looking even further ahead, UC Berkeley is also one of the world leaders in quantum information science, with a new NSF center on campus and two DOE partnerships led by LBNL:

- NSF Quantum Leap Challenge Institute for Present and Future Quantum Computing (\$25 million)
- DOE Quantum Systems Accelerator (QSA) (\$115 million to LBNL, including \$8 million to UC Berkeley)
- DOE QUANT-NET (Quantum Application Network Testbed for Novel Entanglement Technology) (\$12.5 million total to LBNL)

In addition, the NSF funded the following major centers and institutes, including commercially important areas of material science, data science, and artificial intelligence (deep learning):

- Center for Genetically Encoded Materials (\$20 million)
- Network for Neutrinos, Nuclear Astrophysics, and Symmetries (\$5.9 million)
- National Institute for Foundations of Data Sciences (\$5.9 million)
- Theoretical Foundations of Deep Learning (\$5 million)

The NIH is also funding work on the underlying mechanisms of disease and immunity for a wide range of projects that cover cancer, Alzheimer's disease, tuberculosis, AIDS, Zika, and COVID-19. Some notable projects include:

- Protective Immunity following Dengue Virus Natural Infections and Vaccination (\$12.9 million)
- Sleep Impairment: A Mechanism Explaining Neuropsychiatric Symptoms in Alzheimer’s (\$4 million)
- Center on the Economics and Demography of Aging (\$4 million)

Nonprofit funding had a high total of \$229 million in FY21, which was 50 percent greater than the average of the preceding ten years. (Note that gifts to the campus are not included in this sponsored project funding). This funding represents a diverse set of awards, some of which come from foundations, while others are subawards from other universities. Some noteworthy examples include:

- The Simons Foundation, which awarded \$35 million for the renewal of the Simons Institute for the Theory of Computing
- The California Community Foundation, which awarded \$18 million for California 100
- The Engineering Biology Research Consortium, which awarded a \$6 million subaward (from a Department of Defense award) for BioMADE: The Bioindustrial Manufacturing and Design Ecosystem

In spite of the tremendous success in raising research funds, the major challenge faced by UC Berkeley’s research program is the lack of investment in physical infrastructure on the campus. Beyond seismic issues that affect many buildings on campus, the research laboratories have problems with plumbing, leaks, HVAC, rodent infestations, and similar problems. The problems are especially acute for laboratories that require controlled environments, such as temperature control for chemical or biological experiments, dust-free environments for imaging, or vibration control for precise measurements.

Due to this aging infrastructure, researchers are forced to adapt state-of-the-art equipment to facilities which are ill suited to their needs—or worse, are unable to acquire such equipment, given the lack of facilities in which it can be housed. This affects scientists and engineers from nearly every discipline, but also artists who lack studio space, social scientists who lack space for studies, and the increasingly data-intensive disciplines across campus that lack resources for data storage, networking, and computing. In short, UC Berkeley faculty are performing 21st century science in 20th century facilities.

Unleashing innovation and entrepreneurship

A historic advance in the UC system’s capacity for innovation and entrepreneurship (I&E) was sparked by the Regents’ May 2021 report, “From Discovery to Societal Impact: A Roadmap to Unleashing UC Innovation and Entrepreneurship” (henceforth “the Report”). The Report makes 14 specific recommendations in seven innovation areas: governance, patent tracking, funding, policy, culture/reputation, enforcement, and metrics. Not only is the Report insightful and clear, it has also been followed with a remarkable commitment to implementation, which the Berkeley campus applauds and greatly appreciates.

On the Berkeley campus, this unleashing has played out in the development of a vision (the “Platforms Vision”) — inspired by the Report and crafted over the first half of 2022 — that frames in a new way how Berkeley is using freedoms and mindset support to advance its own I&E capacity from an already strong base.

Increasingly, the campus’ biggest opportunities for advancing capacity for I&E are in building platforms — bases for repeatable, efficient, scalable outcomes relating to I&E. Here are nine examples of recently created campus-wide platforms:

- Equity Solutions Group: Increases value to UC Berkeley from acquired equity in startups
- Shared-Carry Venture Funds: Family of seven such funds (~10 percent of total return to Berkeley)
- Berkeley Changemaker: A wider, more inclusive vision for entrepreneurship curriculum
- Bio-I&E Cluster: The Life Sciences Entrepreneurship Center [LSEC](#) as integrator for the Bakar BioEngenuity Hub [BBH](#) / Robinson Life Science, Business, and Entrepreneurship Program [LSBE](#) / California Institute for Quantitative Biosciences [QB3](#) / Innovative Genomics Institute [IGI](#) / [SkyDeck Bio-Track](#)
- Navigation: [Begin.berkeley.edu](#) — a one-stop shop for navigating all of I&E at Berkeley
- Scientific Equipment Sharing: Berkeley Research Infrastructure Commons
- Leader Network: I&E Council connects ~80 executive directors and other leaders of I&E
- Student Interns in Startups: ACE Platform (Accelerating Careers in Entrepreneurship)
- Innovation Services: Acceleration services (SkyDeck) and innovation services (IPIRA)

The campus has received outstanding support from UCOP and from the Regents over the last year that directly enabled many of these, especially the Equity Solutions Group (No. 1), the Family of Shared-Carry Venture Funds (No. 2), the Bio-I&E Cluster (No. 4), the Sharing Platform for Scientific Equipment (No. 6), and the Internship Program to Accelerate Careers in Entrepreneurship (No. 8).

Outlined below are three of the 14 recommendations in the Report that the campus considers both especially valuable and for which it could most use the Regents’ continued help.

1. Legal team support: The Regents could provide the Berkeley campus with even more support in the category of Report recommendations referred to as “governance”—namely, legal support. Platform transformations effected at UC Berkeley have relied heavily on the UCOP legal team’s support and guidance, which has been generous. As innovation and entrepreneurship develop more across the UC system, this essential support might become a limiting factor.
2. Translational research funding: The Regents could provide UC Berkeley with more support in funding, specifically in translational research. Sometimes called proof-of-concept funding, or gap funding, this category is an essential part of closing the gap between “discovery and societal impact.” While UC Berkeley has a successful funding program in

this category, the [Bakar Fellows Program](#), there is still a problem with science-based commercialization. Consistent with the Platforms Vision, the campus aspires to a whole platform of opportunities for faculty, students, and postdoctoral scholars. The Regents could provide “meta funding” to help develop this platform by supporting philanthropy and by targeting extramural funds for this purpose.

3. Culture leadership: The Regents could provide UC Berkeley with more support in the area of culture/reputation. Culture advance is a long road. There are many levers highlighted in the management literature on how to do this in a disciplined way. The UC system has not been as methodical on this front as it could be. The campus recommends that the Regents appoint a task force, separately from the Report task force, which can make recommendations for further culture advance based on state-of-the-art methods. There are many domain experts in the UC system in exactly this area, several of them at Berkeley (e.g., the Berkeley Culture Initiative).

Expanding Beyond the Core Campus

The promise of Moffett Field is to create a new, sustainable model for central campus support through a cutting-edge research and innovation community that marries the extraterrestrial aspirations of NASA, the entrepreneurship and ingenuity of UC Berkeley, and the commercialization abilities of the private sector. A Berkeley presence at Moffett Field will be located together with NASA and the U.S. Geological Survey (USGS), two federal agencies already present on the site. It will also be located together with Google, which just opened its new Bay View Campus at NASA Ames. Microsoft’s new Silicon Valley Campus and Google’s main campus are both within walking distance through the pedestrian bridge across Stevens Creek. The site is near most major companies in Silicon Valley and only a few minutes from downtown Mountain View.

An intersection of government, academia, and private industry, the Moffett Field project has the potential to deliver a new home for research and translational endeavors, while enabling the campus to fulfill its tripartite mission with little financial risk to the UC Berkeley balance sheet. UC Berkeley plans to assemble on the site an industry consortium that will operate within a collaborative innovation ecosystem focused on the most promising modern technologies. SkyDeck, the premier incubator on campus, will have a branch at Moffett Field to leverage the proximity to other startups and the venture capital world centered on nearby Sand Hill Road.

The Moffett Field site will also enable UC Berkeley faculty, staff, and students to access the numerous experimental facilities of NASA, in particular the wind tunnels, air traffic control facilities, supercomputing centers, and flight simulators. As USGS expands its presence on the site, similar opportunities will be explored with it. With Google and Microsoft, specific partnerships will be established, leveraging already existing institutional collaboration frameworks.

The alignment of interest between NASA Ames and the campus provides fertile ground for building new academic programs at Moffett Field. Unencumbered by the restraints of convention, UC

Berkeley intends to develop innovative programs that will not only keep pace with but lead 21st century aviation and space research that is aligned with the NASA Ames areas of growth. This includes:

- New frontiers in flight, focusing on the rise of electric automated aviation, with application to the urban space and to emergency response (fires, disasters) for both cargo and passengers.
- Extending the reach of humans in space, focusing on the development of safe and efficient spacecraft, the development and security of cislunar space, and contributing to national endeavors toward the exploration of and human habitation on Mars.
- Climate change and quantum computing. While applying computing technology to power aviation and space, UC Berkeley will also integrate this work with climate science with a sustainability and social justice focus.

UC Berkeley plans to develop a unique ecosystem in which members of the UC Berkeley academic community are located together with the NASA Ames staff and private sector partners and collaborators. UC Berkeley will host an industry consortium, potentially under the same terms, focused on aerospace and topics related to the Moffett Field presence. The campus envisions a variety of partnerships with them, which include research grants, co-development of IP and research, internships, and joint work on public funds.

Moffett Field also offers a unique financial opportunity for UC Berkeley to make an impact without unduly drawing on campus funds, which are needed elsewhere. The campus is developing a financial model that will utilize income generated by the site itself to make UC Berkeley's presence there self-sustaining, while creating additional revenue opportunities that can support the core campus, its colleges and activities.

UC Berkeley is establishing a joint venture with an operating partner, and UC's contribution to that joint venture is in kind. UC Berkeley is contributing the ground lease to the joint venture along with its valuable name and reputation, contributions that will attract private investors with capital and private industry with an interest to rent facilities on the site. The campus is ensuring that only a modest amount of campus funds and time are being expended so that the site will add value to the campus mission and bottom line.

UC Berkeley has been deliberate in engaging the campus community in ideation about the project's scope and future, including leading faculty from the colleges of environmental design, natural resources, engineering, law, and business to the departments of physics and biology. The campus also recently hosted the NASA Ames executive leadership team for a series of meetings with representatives of the colleges and research units. The relationship with NASA has been strengthened through the signing of a cooperative Space Act Agreement that will launch a series of symposia focused on aligning NASA's research activities with those of UC Berkeley, leaning on the expertise and unique assets that both institutions bring to the effort.

On the academic side, three colleges have taken the lead in the discussion to build academic infrastructure at Moffett Field. In 2021, the College of Engineering launched an undergraduate minor in aerospace and a Master of Engineering degree with an aerospace concentration. In 2022, UC Berkeley will host its first cohort (40 students) for the undergraduate major in aerospace. In parallel, the Division of Computing, Data Science, and Society is currently reviewing a proposal for an undergraduate major in data science with a domain emphasis on aerospace. In parallel, over 100 interested faculty members on campus have been engaged in the creation of joint thematic research clusters, to be teamed with NASA Ames researchers — in particular, in the Rausser College of Natural Resources (and also in the College of Engineering and the Division of Computing, Data Science, and Society). CITRIS Aviation was launched as a new initiative with multiple academic goals, including supporting the Airlink concept.

Building a Replicable Model for Expansion

The campus is evaluating the potential to employ a similar financial model to develop the Richmond Field Station (RFS) in ways that advance UC Berkeley’s mission. However, there are three important distinctions between the two sites. First, RFS is on University-owned land. This will eliminate the need to negotiate a market-based lease from the federal government. Second, the Richmond site is larger —100 acres, compared to Moffett Field’s 36 — and able to host more people and programs. Third, RFS is closer to the main campus and therefore can potentially have programs that are synchronized directly with those on campus. Like Moffett Field, however, RFS is poised for new opportunities. The site is capable of accommodating shared and flexible research and innovation environments, with room and resources for industry partners who bring financial support, use-inspired research perspectives, and more immediate monetization.

The RFS site also offers several opportunities for additional future uses and partnerships. It currently hosts several large-scale and highly desirable research facilities, including instrumented intersections used for self-driving vehicle research (cars, trucks, buses) and large-scale shake tables for earthquake engineering research.

These plans, programs and facilities can and will provide new and exciting opportunities for student instructional programs and student participation in research.

In Conclusion

UC Berkeley’s strengths, weaknesses, opportunities, and threats are as varied and as complex as the University itself. Yet, the campus is undaunted and determined to not just sustain, but enhance and expand its excellence and impact. UC Berkeley is honored and humbled by the amazing resolve, commitment, and perseverance of its campus community over the course of the last two years. The campus has witnessed a remarkable coming together, which will stand it in particularly good stead as it confronts its challenges and exploits its opportunities. While pressures and problems abound, UC Berkeley has the richest resource of all, and that is the support and faith of the extended campus community of staff, faculty, students, and alumni — the people who form the foundation of all that

UC Berkeley is and aspires to be. The campus looks forward to working in close concert with the Regents and UCOP as it puts the pieces in place for a new era of excellence in service to the greater good.