THE UNIVERSITY OF CALIFORNIA

SYSTEMWIDE ECONOMIC, FISCAL, AND SOCIAL IMPACT ANALYSIS

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Prepared By

BEACON ECONOMICS

BEACON ECONOMICS, LLC

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ACKNOWLEDGMENTS

PROJECT ADVISORS

Christopher Thornberg, Ph.D., Founding Partner
Adam Fowler, Director of Research

PROJECT TEAM

Mazen Bou Zeineddine, Practice Lead, Economic, Fiscal and Social Impact Analysis
Alissa Dubetz, Senior Research Associate, Economic, Fiscal, and Social Impact Analysis
Brian Vanderplas, Senior Research Associate
Steven Espinoza, Research Associate, Housing, Land Use, and Real Estate Advisory
Mark Schneider, Data Visualization and Marketing Assistant

Prepared by
Beacon Economics, LLC

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The Office of the President (UCOP) is the systemwide headquarters of the University of California, managing its operations across 10 campuses, six academic health centers, three affiliated national laboratories, and a statewide agriculture and natural resources program. UCOP provides strategic leadership and an array of centralized services — including academic preparation, outreach, investments, benefits, and retirement services — that enable UC's 10 campuses to function as a single university.

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KEY TERMS

Key Term	Definition
UC-Related Spending	University spending on construction and operations, and out-of-pocket UC student spending on regional goods and services. • **Construction:** UC spending on construction, including campus infrastructure and facility maintenance, improvements, and expansions. • **Operations:** UC spending on **employee compensation** (salaries and benefits), **retirement benefits** (medical benefits and pensions), and **other operations** (non-salary spending on goods and services to support ongoing operations, including supplies, utilities, etc.). • **Student Spending:** Non-tuition-related personal spending by UC students (undergraduates and graduates) on regional goods and services, including food, non-UC housing, retail, transportation, etc.
Direct Effect	The additional output of goods or services resulting from immediate UC-related spending. For example, if UC buys printers from an office supply store, the upfront cost UC pays is the direct effect, which is the increase in the office supply store's economic activity resulting from UC's business transaction.
Indirect Effect	The additional output of goods or services generated by the business-to-business interaction with suppliers of UC's direct purchases and the suppliers of the suppliers. For example, the upfront cost UC pays for printers (direct effect) supports the printer industry and the businesses that supply the raw materials needed to build printers to a printer manufacturing plant.
Induced Effect	As businesses increase productivity from the direct and indirect effects, their payroll expenditures grow through more hiring or increased salaries. As household incomes rise, people will spend more on additional goods and services, such as groceries and entertainment. The induced effect is these new personal market transactions, generating additional outputs of goods and/or services. For example, when UC buys printers, the resulting increase in revenue at the office supply store and the printer manufacturer leads to salary raises for employees at these businesses. With this new income, an employee spends more money on groceries, generating additional economic activity that supports the grocery store.
Ripple/Multiplier Effects	The indirect and induced effects. These are considered "ripple" or "multiplier" effects because initial direct expenditures generate sequential rounds of spending in the economy.
Total Impact	The sum of the direct, indirect, and induced effects.

Key Term	Definition
Employment (IMPLAN Output)[1]	The number (headcount) of part-time, full-time, and temporary jobs supported by UC-related spending, including UC payroll employees and employees supported by other non-UC-salary direct spending (other operations). Jobs "supported" is inclusive of jobs generated and existing jobs that have now been expanded in scope by UC-related spending, which helps maintain workers' employment. For example, a factory worker at a printer manufacturing plant continues to build printers as UC's printer purchases increased printer demand. It is not likely that the factory worker was hired specifically because of UC's printer purchases, and therefore the worker was not a new job generated. Instead, UC direct spending supported the job by increasing printer demand and subsequently increasing printer supply, which helps keep the factory worker employed. Alternatively, the 228,824 workers that UC directly employs represent jobs generated by UC; in the absence of the University system, these jobs would be nonexistent.
Labor Income (IMPLAN Output)	The value of all forms of employment income paid through UC-related spending, including fringe benefits such as health care and retirement.
Economic Output (IMPLAN Output)	The total value of production of goods and services generated through UC-related spending, including the value of intermediate inputs — the goods and services used in the production of equipment, raw materials, energy, and other production inputs.
Value Added (IMPLAN Output)	UC's contribution to Gross Domestic Product (GDP) or, at the California level, Gross State Product (see following term). Value added is equivalent to output minus the value of intermediate inputs, which represents the total market value of final goods and services produced.
Gross State Product (GSP)	GSP is the sum of income generated by production at the state level, which is equal to value added.
Tax Revenue (IMPLAN Output)	Money generated by all individuals and institutions involved or impacted by UC-related spending (through the direct, indirect, and induced effects) to support Federal, state, and local governments. Revenue is mostly generated by sales, property, income, and Social Security taxes.

Source: Beacon Economics

[1]IMPLAN is the input-output modeling software used in Section 3 (Economic and Fiscal Impact Analysis). The definition of "employment" described here pertains only to the use of the term in the context of evaluating IMPLAN results. "Employment" is used broadly throughout the report outside of the modeling context, however the form of which it takes is noted (i.e., full-time, part-time, temporary, full-time equivalent (FTE), or a combination thereof).

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ABOUT BEACON ECONOMICS

Founded in 2007, Beacon Economics, an LLC and certified Small Business Enterprise with the state of California, is an independent research and consulting firm dedicated to delivering accurate, insightful, and objective economic analysis. Leveraging unique proprietary models, vast databases, and sophisticated data processing, the company's specialized practice areas include sustainable growth and development, real estate market analysis, economic forecasting, industry analysis, economic policy analysis, and economic impact studies. Beacon Economics equips its clients with the data and analysis required to understand the significance of on-the-ground realities and to make informed business and policy decisions.

Practice Areas:

- Economic, Fiscal, and Social Impact Analysis
- Economic and Revenue Forecasting
- Sustainable Growth and Development
- Housing, Land Use, and Real Estate Advisory
- Litigation and Testimony
- Regional and Sub-Regional Analysis

EXPERTISE IN ECONOMIC IMPACT ANALYSIS

Since 2011, Beacon Economics has conducted multiple comprehensive analyses that have provided reliable and quantifiable data on the economic impact of various industries and organizations, including universities and higher education institutions such as USC, UCLA, Cal State Pomona, and Loyola Marymount. The analyses evaluate major economic impacts associated with these entities and their fiscal impact on national, state, and local governments. Incorporated into the analysis is a comprehensive assessment of the social and qualitative impacts associated with these institutions. By combining sampling methods, financial data, surveys, and other available economic resources with current frameworks for studying economic impacts, Beacon Economics estimates the amount of economic activity generated in the local and broader economy by calculating the spending of entities and other participants in the affected region.

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EXECUTIVE SUMMARY

The University of California (UC, or the University) is a world-class educational, research, and public service institution. UC comprises ten campuses, including one campus devoted to health sciences and nine general campuses which offer undergraduate, graduate, and professional academic education through the doctoral degree level; six academic health systems (University of California Health, or UCH), five of which own or operate hospitals that provide high-quality medical services to millions of Californians each year; a statewide agriculture and natural resources program with offices in nearly every California county; and three affiliated national laboratories.

UC contributes substantially to the vibrancy and strength of California's economy, the fifth largest in the world. The University is the state's third-largest employer (behind only the state and Federal governments),[1] directly employing about 228,824 full- and part-time faculty and staff as of April 2020. UC's budget, $37.2 billion in fiscal year 2018-19, supports its mission to uphold a gold standard in teaching, research, public service, and fostering economic growth throughout California. State funding is a key driver of UC's success, helping the University retain and recruit exceptional faculty and staff, offer high-quality academic instruction, increase education accessibility for low-income and historically underrepresented students, lead in innovation and discovery, and maintain and enhance state-of-the-art campus infrastructure.

[1] California Employment Development Department

The University's "core funds", which include revenues from State General Funds, UC General Funds, and student tuition and fees, provide permanent funding for the University's core mission activities, as well as the administrative and support services needed to perform them. In 2019-20, State funding represented 42% of these core funds.[2] Although total State funding has increased in nominal dollars over the last decade (returning to pre-recession levels by 2018-19), State support remains low by historic standards when inflation and UC's enrollment growth are taken into account. In 2019-20, core funds per student had declined by 33% relative to 2000-01. At the same time, UC's total full-time equivalent (FTE) enrollment in 2019-20 was 67% higher than that of 2000-01.[3] Declines in State support have not been fully offset by increases in student tuition and fees, partly because the University sets aside a substantial portion of the new tuition and fee revenue to expand its financial aid programs. Moreover, the University has increased California resident undergraduate tuition only once since 2011-12, by $282 (or 2.5%) in 2017-18.

On top of these increasing cost pressures, the COVID-19 (COVID) pandemic has financially strained the University. From March to October 2020, the latest data available at the time of this writing, lost revenue and new costs associated with COVID totaled $2.7 billion for UC campuses and academic health centers.[4] Despite these financial setbacks, University of California Health has been at the forefront of California's COVID care delivery, public health response, testing, treatment, and research.

This report quantifies UC's economic and fiscal contributions to California, revealing the high return on investment to California from State and

[2] 2020-21 Operating Budget Report, p. 17. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf
[3] 2021-22 Operating Budget Report, p. 186. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf
[4] UC Office of the President

Federal funding for UC. The analysis is conducted using expenditure data associated with 19 UC entities. Three UC-related expenditure categories for fiscal year 2018-19 are assessed: University spending on construction, University spending on operations (including employee and retiree compensation distributions and other general operating costs), and non-tuition-related personal student spending (non-University spending). UC employee and retiree spending are also captured by operational University spending on employee and retiree compensation. UC-related direct spending generates immediate impacts (direct effects) which produce additional impacts that ripple throughout the economy (indirect and induced effects).

Additional impacts are generated by other UC activities that are not measured in the previous impact analysis. These social impacts are difficult to quantify within an economic framework yet are perhaps the University's most significant. Social impacts include UC's role in enhancing human capital, research and innovation (such as how investment in UC research has leveraged the founding of 1,239 startups by UC alumni to date), fostering economic growth and community development, and improving health care outcomes for millions across the state. The final section of this report discusses these additional impacts in detail.

KEY FINDINGS

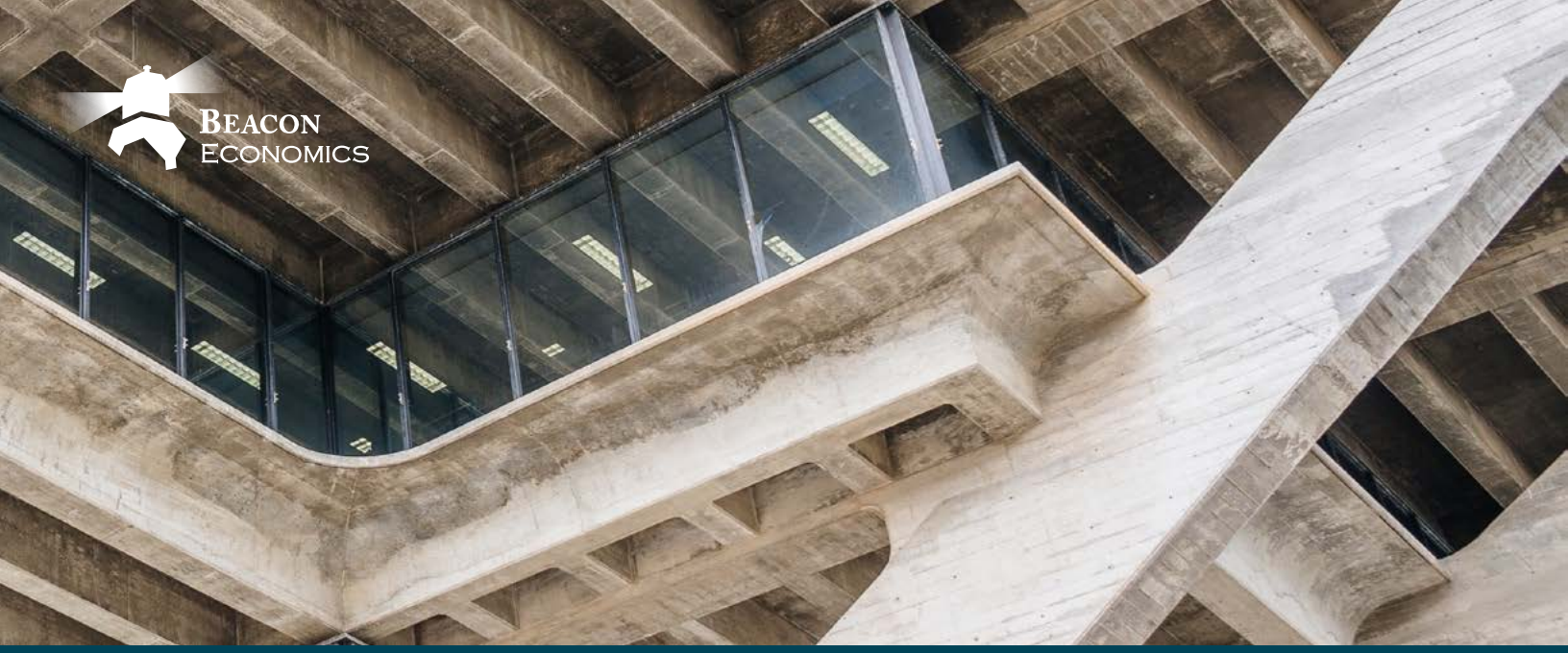
1. **In 2018-19, every $1 in State support leveraged $3.36 from other non-state-government sources for UC. The state's leverage in attracting other sources of funding magnifies UC's ability to deliver high-quality educational services that attract hundreds of thousands of students annually.**

State funding has helped develop UC as one of the most renowned public universities in the world. State funding for UC totaled $3.9 billion in 2018-19,[5] most of which ($3.7 billion) supports UC's core operations. State funds are also used to support UC research.

State funding for UC also helps attract support from other sources. In 2018-19, UC funding excluding income generated by self-supporting enterprises (such as UCH hospitals) totaled $17.0 billion.[6] Of this amount, the State's $3.9 billion attracted an additional $13.1 billion in non-state-government sources, including Federal support, student tuition and fees, and private/nonprofit research grants. In 2018-19, every $1 of State funding corresponded to $3.36 in non-state-government support. Strong investment enables UC to deliver high-quality educational programs and services that attract hundreds of thousands of students annually.

[5] 2018-19 State Budget, University of California. Department of Finance, California Budget. June 27, 2018. http://www.ebudget.ca.gov/budget/publication/#/e/2018-19/Agency/6013

[6] 2020-21 Operating Budget Report, p. 175. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf



2. **UC students spend their own money on goods and services outside of UC institutions in regions across California, and every $1 in State support corresponded to $1.33 in non-tuition-related personal student spending in 2018-19.**

   UC students are vital to the economies of each campus area; in 2018-19 UC undergraduate and graduate students spent $5.2 billion out-of-pocket on non-tuition-related regional goods and services throughout California.

3. **In 2018-19, including ripple effects (indirect and induced), UC-related spending supported 529,119 jobs (2% of total California jobs, or 1 in 45 jobs in the state), and generated $37.6 billion in labor income, $55.8 billion in value added (2% of GSP), and $82.1 billion in economic output in California. UC-related spending also produced $11.7 billion in tax revenue to support local, state, and Federal governments.[7]**

4. **The economic output generated by UC-related spending is $4.4 billion larger than the economic output of the entire state of Wyoming and $16.1 billion larger than that of Vermont.[8]**

[7] Analysis by Beacon Economics using the IMPLAN modeling system.
[8] Wyoming's statewide economic output totaled $77.7 billion and Vermont's was $65.9 billion in 2018-19 (IMPLAN).

5. **Impact results indicate that every $1 of State funding helps generate $21.04 in economic output, $9.65 in labor income, $14.32 in value added, and $3.01 in total tax revenue ($1.09 in state and local tax revenue). Additionally, every $7,371 in State funding supports one job.**

6. **University of California Health contributes to relatively high proportions of UC's systemwide impacts in California, accounting for about 37% of jobs supported, and about 49% of labor income, 46% of value added (UC's contribution to GSP), 45% of economic output, and 46% of tax revenue generated by UC-related spending.**

   Out of 19 entities evaluated, UCSF[9] generated the largest total economic impact across all indicators (employment, labor income, value added, and economic output). UCLA Health ranked second in labor income, value added, and economic output generated. UC Davis Health ranked fifth in total labor income generated and seventh in value added and economic output produced. UCI Health ranked tenth in labor income and value added generated. UC San Diego Health ranked fifth in total value added and economic output generated. Relatively large impacts at University of California Health are mostly driven by sizable employee headcounts at their associated UCH hospital, where considerable impacts are generated by direct spending on employee compensation, along with the subsequent ripple effect generated by employee spending on goods and services in the community.

7. **UC's impacts are felt in every corner of the state, even in regions without UC entities. UC has the largest absolute impacts in the San Francisco Bay Area, Los Angeles, and San Diego-Imperial regions. Adjusted for the size of regions' economies, however, UC has the most substantial impact in the Sacramento-Tahoe, Monterey Bay and Central Coast regions, serving as one of the largest employers in these areas.**

   UC Davis and UC Santa Barbara are the largest employers (in terms of full-time equivalent, or FTE), in Yolo[10] and Santa Barbara[11] counties, respectively.

[9] Includes UCSF health professional schools and UCSF's UCH hospital

[10] "Largest Yolo County Employers," Sacramento Business Journal, May 31, 2019, https://www.bizjournals.com/sacramento/subscriber-only/2019/05/31/employers-yolo-county.html

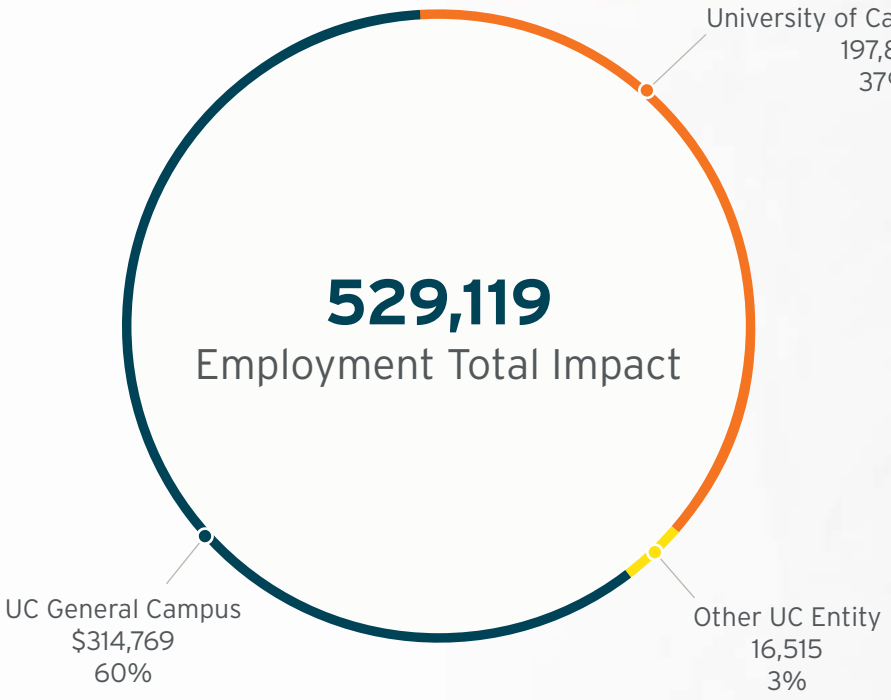
[11] "Major Employers," Santa Barbara South Coast Chamber of Commerce, n.d., https://goletachamber.com/community/community-profile/major-employers/

8. Students receive a high return on investment for attending UC; on average, UC undergraduate alumni earn $9,300 more annually than the average individual working in California holding a bachelor's degree, and UC graduate alumni earn $35,400 more annually than the average individual working in California with a graduate or professional degree.[12]

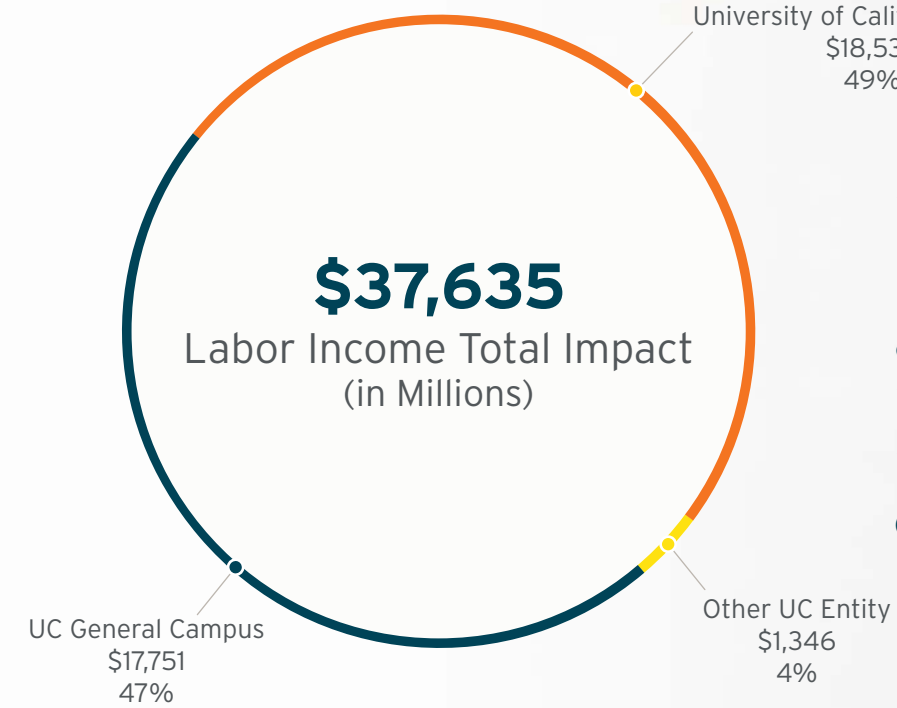
9. UC enhances social mobility for individuals from underrepresented or low-income groups: in California, first-generation college students earn about $52,800 more annually by obtaining a bachelor's degree from UC than if they had attained only a high school degree, on average.[13]

In 2020, Washington Monthly ranked five UC campuses among the top 20 institutions in the nation based on their contributions to the public good in social mobility, research, and promoting public service.[14] UC San Diego ranked highest among UC campuses, and seventh overall. Roughly 40% of UC undergraduate students are first in their family to attend college,[15] and 37% come from low-income families.[16] UC offers one of the strongest financial aid programs in the nation, awarding $4.3 billion to students in 2018-19. In 2018-19, 67.1% of students received some form of aid.[17] The State's contribution to financial aid is also critical. In 2018-19, approximately 90,000 UC students were awarded $993.7 million in State-sourced financial aid (including $956 million in funding for Cal Grants and $28.1 million for the Middle Class Scholarship program).[18] Roughly 46% of UC graduates who entered as California resident freshmen graduated without student debt.[19] In fact, roughly 57% of all California resident undergraduates received financial aid that fully covered their mandatory systemwide charges. Further, 72% of California undergraduates enrolled at UC receive a grant or scholarship that need not be repaid.[20] [21]

[12] See Section 4, Figure 4.1a, for more details on data and calculation.
[13] See Section 4, Figure 4.1a, for more details on data and calculation.
[14] "Our 2020 College Rankings Are Out: See How Your School Did," Washington Monthly, August 31, 2020, https://washingtonmonthly.com/2020/08/31/our-2020-college-rankings-are-out-see-how-your-school-did/
[15] "Fall Enrollment at a Glance," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/fall-enrollment-glance
[16] "The UC System," University of California, n.d., https://www.universityofcalifornia.edu/uc-system.
[17] "Student Financial Support Data Tables," University of California, 2018-19, https://www.universityofcalifornia.edu/infocenter/financial-support
[18] Ibid.
[19] UC Accountability Report 2020, p. 42. UCOP Instutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf
[20] "The Facts: Federal Financial Aid for UC Students," University of California, 2019, https://www.ucop.edu/Federal-governmental-relations//_files/Advocacy/Federal-Research/Fact_Sheet_Federal_Financial_Aid.pdf
[21] University of California, "Ready for Your next Challenge? The UC Application Is Now Open. ," University of California, n.d., https://admission.universityofcalifornia.edu/

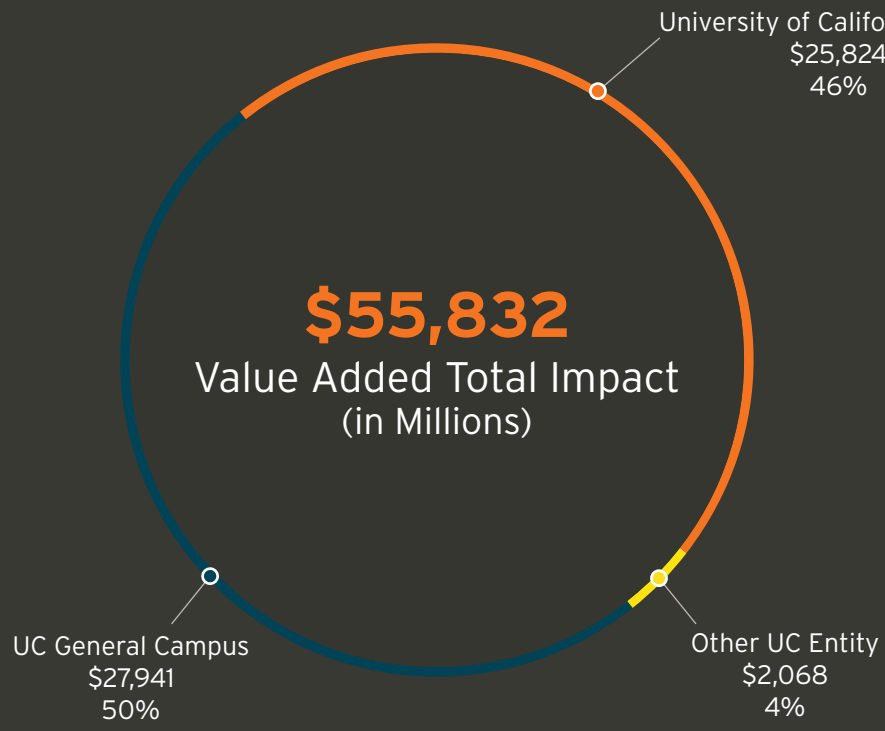


Every one job directly supported by UC-related spending supports roughly 0.7 indirect and induced jobs in California (an employment multiplier of about 1.7).



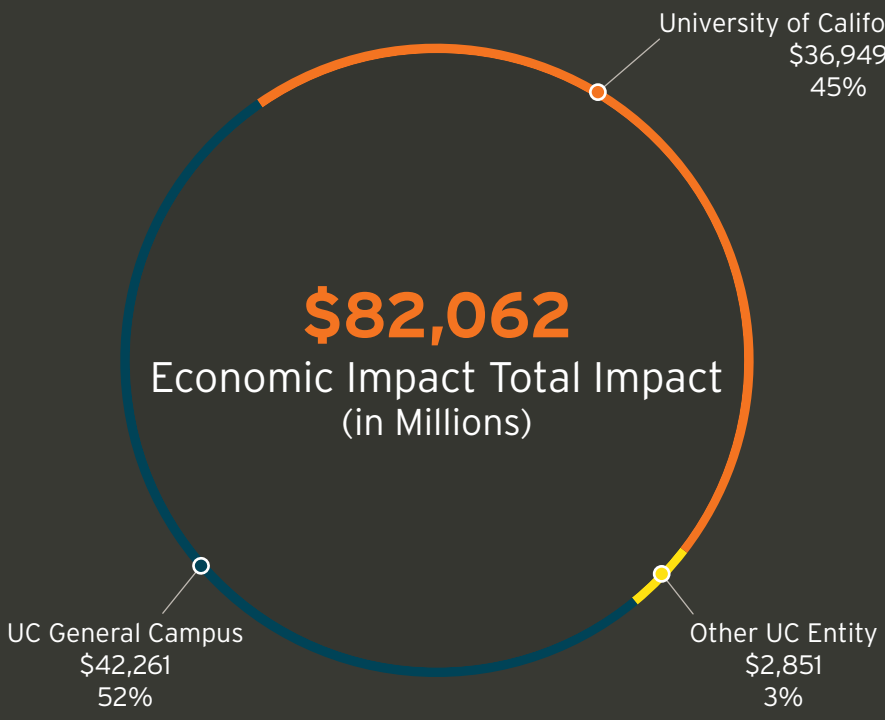
Every $1 of direct labor income produced by UC-related spending generates an additional $0.6 in indirect and induced labor income in California (a labor income multiplier of about 1.6).

Source: UCOP; IMPLAN; analysis by Beacon Economics



Every $1 in direct value added produced by UC-related spending generates an additional $0.8 in indirect and induced value added

(a value added multiplier of about 1.8).



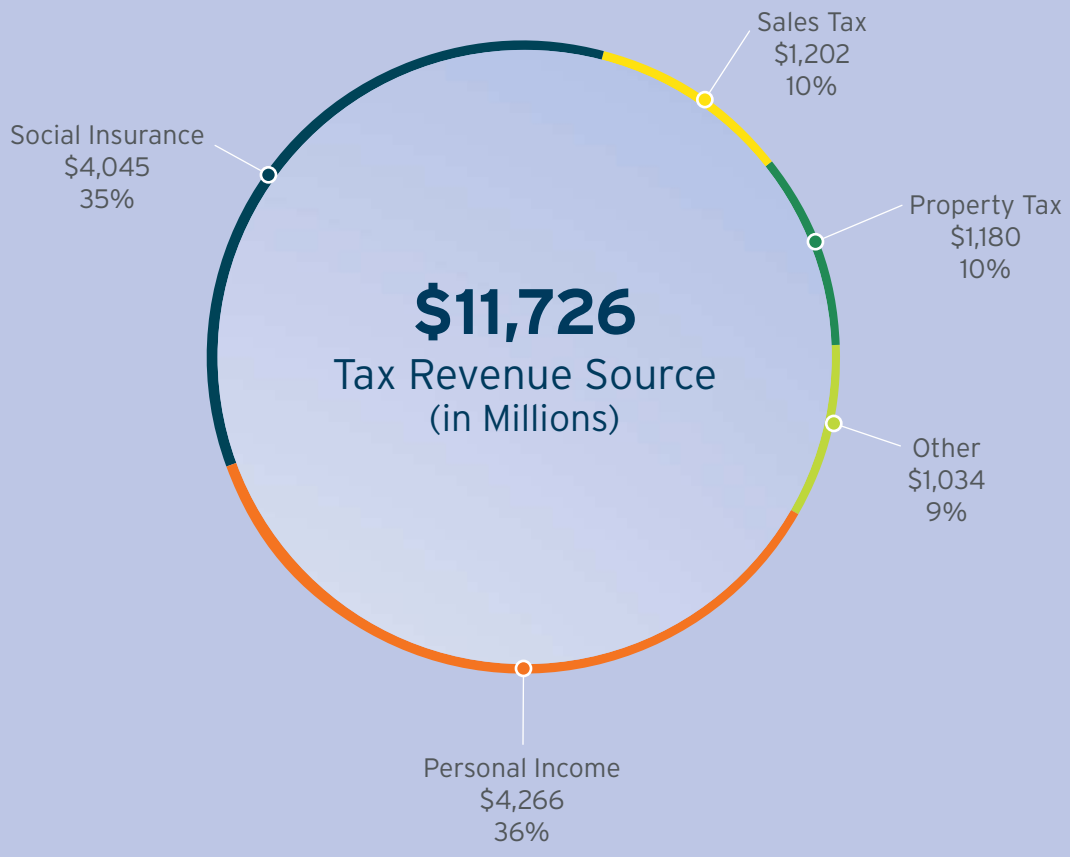
Every $1 in direct economic output produced by UC-related spending generates about $1.0 in additional indirect and induced economic output

(an economic output multiplier of about 2.0).

Source: UCOP; IMPLAN; analysis by Beacon Economics

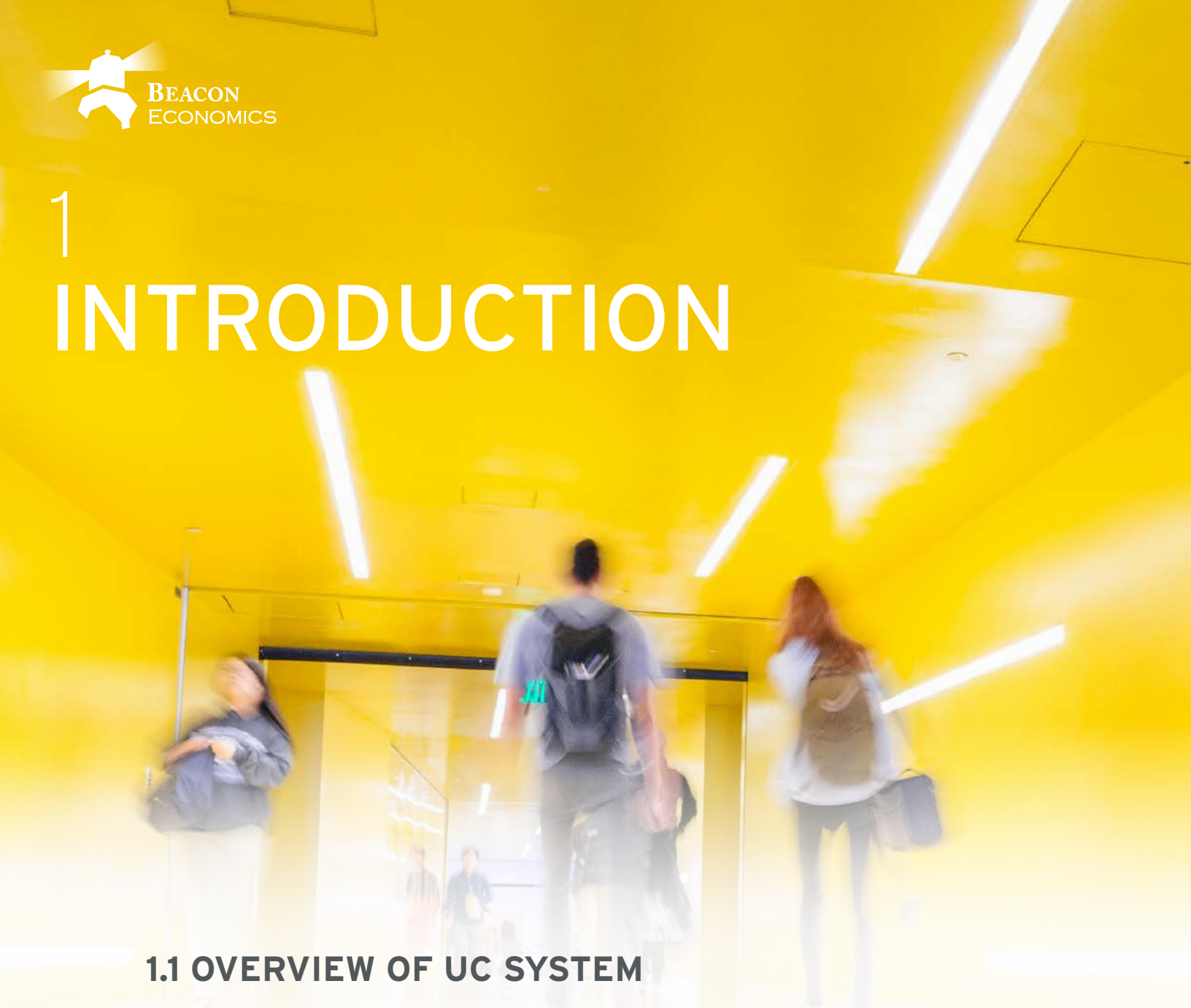
Source: UCOP; IMPLAN; analysis by Beacon Economics

UC's contribution to state and local tax revenue supports regional development, funding activities such as state and local public safety, criminal justice, education, health, and transportation services. Most revenue was generated through employee and retiree compensation in the form of personal income and social insurance taxes. Comparing the $4.3 billion in personal income tax revenue generated with UC's FY 2018-19 employee



compensation expenditures (totaling $19.5 billion) indicates that about one-quarter of UC employee compensation spending returns to the state and Federal governments. In other words, every $4 cut from UC employee compensation would cause the state and Federal governments to lose about $1 in personal income tax revenue.

1 INTRODUCTION



1.1 OVERVIEW OF UC SYSTEM

The University of California (UC, or the University) is a world-class educational, research, and public service institution. Founded in 1868 with just 40 students and ten faculty members, the system currently educates more than 285,000 FTE students[22] and employs over 170,030 FTE faculty and staff[23] (228,824 total employees including part-time[24]) as of academic year 2019-20. UC's many campuses – which feature more than 160 academic disciplines and approximately 850 degrees – consistently rank among the top in the nation for academic excellence, research and innovation, and other performance distinctions. With more than two million alumni, UC's impact extends across the globe.

[22] "Fall Enrollment at a Glance," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/fall-enrollment-glance
[23] "UC Employees, Full-Time Equivalent (FTE)," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/employee-fte
[24] UCOP

The UC Office of the President (UCOP) serves as the system's headquarters. UC comprises ten campuses, including nine general campuses which offer undergraduate, graduate, and professional academic education and one campus devoted to professional health sciences education (UCSF), part of University of California Health (UCH). UCH forms a $13.4 billion enterprise (based on FY 2019-20 figures) and includes 20 health professional schools and six academic health centers, five of which own and operate a UC hospital. UCH also provides clinical oversight of the University's student health and counseling centers, as well as its self- and flex-funded health plans offered to UC employees systemwide.

Figure 1 summarizes the operations at the 10 UC campuses. For purposes of this report, UCSF is categorized solely under UCH, which includes the operations of its health professional schools, academic health center, and hospitals. It is excluded from the General Campus category because it does not offer undergraduate education or graduate and professional education outside of health sciences. General Campus operations exclude activity from health professional schools and academic health centers, which are captured under UCH operations. Note that UC Riverside Health does not operate its own hospital and provides medical care through faculty and residents at clinics and community hospitals.

UC operates about 150 institutes, centers, bureaus, and research laboratories throughout the state. UC Agriculture and Natural Resources (ANR) is a network of UC researchers and educators promoting healthy communities through UC research in agriculture, natural resources, nutrition, and youth development. ANR serves every California county. UC manages the Lawrence Berkeley National Laboratory (LBNL), a top-level facility that conducts research on behalf of the U.S. Department of Energy. The University also partners with limited-liability corporations to oversee the Lawrence Livermore National Laboratory and Los Alamos National Laboratory. Additionally, Hastings College of the Law (Hastings) is a UC-affiliated public law school but is not governed by the UC Regents.

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Figure 1: UC Campus Operations

Campus	General Campus[1]	UCH[2]
UC Berkeley[3]	✓	
UC Davis	✓	✓*
UC Irvine	✓	
UCLA	✓	✓*
UC Merced	✓	
UC Riverside	✓	✓
UC San Diego	✓	
UCSF		✓*
UC Santa Barbara	✓	
UC Santa Cruz	✓	

[1] Includes undergraduate, graduate, and professional education, excluding health professional education and academic health centers.

[2] Includes health professional schools and academic health centers

[3] UC Berkeley has an Optometry School and Eye Clinic and a Public Health School that are part of University of California Health but are not included under UCH for purposes of this report.

* Owns and operates a UC hospital/medical center

UC'S COMMITMENT TO EXCELLENCE

UC's commitment to academic excellence and innovation is reflected in the many awards, distinctions, and honors received by its graduates, faculty, researchers, programs, and campuses. UC has 68 Nobel laureates, 63 National Medal of Science winners, 40 Pulitzer Prize winners, 646 members of the National Academy of Sciences, 231 members of the National Academy for Medicine, and 265 members of the National Academy of Engineering.[25] UC averages five inventions per day. To date, 1,239 startups have been founded based on UC patents.[26]

Seven campuses belong to the prestigious 63-member Association of American Universities[27], and six rank among the top ten American public universities in the 2020 edition of U.S. News & World Report's Best College rankings, with UCLA and UC Berkeley ranking first and second overall respectively.[28] UC graduate programs also top the U.S. News & World Report's 2020-21 rankings, offering among the best graduate programs in the nation in business, law, medicine, nursing, engineering, education, public health, pharmacy, and vet medicine.[29]

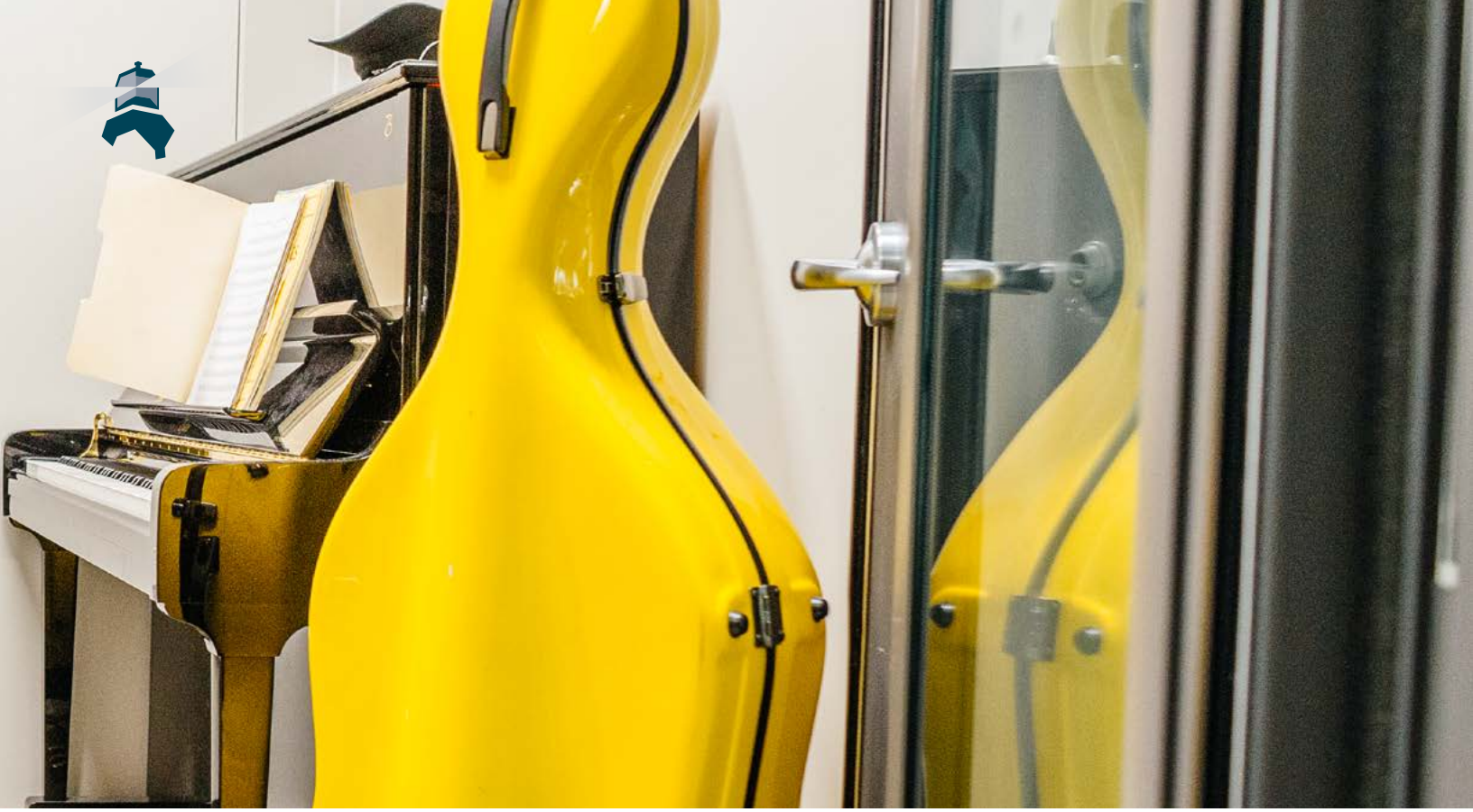
[25] 2020-21 Operating Budget Report, p. 12. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf

[26] "The University of California At A Glance," February 2020, https://ucop.edu/institutional-research-academic-planning/_files/uc-facts-at-a-glance.pdf

[27] 2020-21 Operating Budget Report, p. 62. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf

[28] UC Accountability Report 2020, p. 195. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

[29] "Thinking about Graduate School? UC Programs Top US News 2020 Rankings," University of California, March 13, 2019, https://www.universityofcalifornia.edu/news/thinking-about-graduate-school-uc-programs-top-us-news-2020-rankings



University of California Health has developed some of the highest-regarded academic health centers, with the five that own and operate hospitals ranked among California's top 11 hospitals by U.S. News & World Report's 2020-21 Best Hospital rankings. Across the nation, UCLA Health and UCSF ranked fourth and eighth respectively[30], and appear on the national honor roll of U.S. hospitals. UCSF ranked second in terms of best medical schools for primary care and best pharmacy schools.[31] UCH is the largest academic health system in the nation and forms the fourth-largest health care delivery system in California. In fiscal year 2019-20, UCH hospitals treated 162,300 inpatients and, in conjunction with UC Schools of Medicine and specialty clinics, 8.1 million outpatients. Of these patients served, 34% are insured by Medicare, 35% by Medi-Cal, and 1% are uninsured.[32]

[30] Harder, Ben. "2020-21 Best Hospitals Honor Roll and Medical Specialties Rankings," U.S. News & World Report, July 2020. https://health.usnews.com/health-care/best-hospitals/articles/best-hospitals-honor-roll-and-overview.

[31] UC Accountability Report 2020, p. 164-165. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

[32] UC Medical Centers Annual Financial Report, 2019-20, p. 29. University of California. https://finreports.universityofcalifornia.edu/index.php?file=/med_ctr/19-20/medical-center-reports-2020.pdf

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UC'S SIGNIFICANCE TO CALIFORNIA

UC contributes substantially to the vibrancy and strength of California's economy. Roughly 74% of UC graduates remain in California and work in high-demand fields including health care, education, technology, and business.[33] Approximately 72% of UCH science students and 61% of medical residents are expected to remain in the state after completing training or education. This high rate of retention makes UCH one of the principal sources for training of health professionals in California. The system serves as a pipeline for talent; its academic programs, innovative research, and commitment to public service help the state meet its diverse and growing workforce needs and foster community development.

With a tripartite mission centering on teaching, research, and public service, the University seeks to achieve diversity among its student body and faculty. UC is committed to enhancing students' economic mobility – roughly 40% of UC undergraduate students are first-generation

college students[34] and 37% come from low-income families – which is crucial for a high-performing economy. Underrepresented Groups (URGs) at UC include African American, American Indian, and Chicano(a)/Latino(a) students. About 33% of undergraduates were URGs in 2018-19, a 16-percentage-point increase from 1999. Increases in URGs at UC are driven by the increased diversity of California's high school graduating class, along with rises in domestic transfer student enrollment from California Community Colleges, which increased from 18% in fall 1999 to 36% in fall 2018.[35]

With over 228,824 full- and part-time jobs, UC is the state's third-largest employer,[36] behind only the state and Federal governments. UC places second in the U.S. in terms of female faculty (following Yale) and in terms of faculty from URGs (following University of Illinois at Urbana-Champaign).[37] UC has made substantial efforts to diversify its faculty, staff, and senior leadership and to build recognition for historically underrepresented populations. The California Budget Acts of 2016, 2017, and 2018 included allocations to UC of $2 million on a one-time basis each year to support best practices in equal employment opportunity. The allocation was raised to $2.5 million for 2019-20, with total funding over four years reaching $8.5 million. The funding has been used to establish UC's Advancing Faculty Diversity Program, awarding the campuses on a competitive basis to support new interventions in the faculty recruitment process, while being able to measure the interventions for their effectiveness in diversifying faculty. Starting in 2018-19, the UC Office of the President supplemented allocations from the State by funding projects on improved academic climate and faculty retention, committing over $400,000 to fund six projects in the first year and increasing that to $1 million in 2019-20. Investment in these initiatives helps UC hire and retain diverse and talented faculty that reflect the state's population.

[33] "UC Alumni at Work," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/uc-alumni-work
[34] "Fall Enrollment at a Glance," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/fall-enrollment-glance
[35] 2020-21 Operating Budget Report, p. 31. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf
[36] "The University of California At A Glance," February 2020, https://ucop.edu/institutional-research-academic-planning/_files/uc-facts-at-a-glance.pdf
[37] UC Accountability Report 2020, p. 92. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

UC'S DEDICATION TO GROWTH

Committed to continuing growth and development, the UC Regents adopted a multiyear framework in early 2019 called UC 2030: Advancing the California Dream. Its goals are as follows:

- To produce 200,000 degrees by 2030 on top of the currently projected 1 million undergraduate and graduate degrees;
- To raise the undergraduate four-year graduation rate to 76% and the six-year graduation rate to 90%;
- To eliminate gaps in timely graduation and graduate degree attainment for Pell Grant recipients, first-generation students, and underrepresented groups;
- To invest in the next generation of faculty and research by adding 1,100 ladder-rank faculty over four years.[38]

Meeting these goals would benefit California's economy substantially. Increased economic mobility would have ripple effects such as enabling employers to hire and grow, generating new businesses, raising household incomes, and increasing consumer spending and state tax revenue. Achieving a higher graduation rate or reducing time-to-degree would bring qualified individuals into the labor force sooner and reduce education costs associated with longer enrollment. Assuming that the median early-career salary is around $40,000[39], students graduating in four years rather than six could benefit from about $100,000 to $150,000 in lower costs and additional wages.[40]

The state's workforce faces an expected 1.1 million shortfall in college graduates by 2030.[41] UC's goals to support student success and confer an additional 200,000 degrees by 2030 would help California cope with this issue. State funding is a critical component of this plan's success; to that end, UC has requested $60 million in permanent State funding over each of the next four years that would enable it to enroll and graduate hundreds of thousands of additional degree holders to meet California's workforce needs, while investing in teaching capacity, reducing time to graduation, and closing opportunity gaps.[42]

[38] "UC 2030 Dashboard," University of California, n.d., https://www.universityofcalifornia.edu/infocenter/uc-2030-dashboard
[39] Based on the median earnings of UC undergraduate alumni two years after graduating.
[40] UC Accountability Report 2020, p. 47. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf
[41] Bohn, Sarah, Hans Johnson, and Marisol C. Meija. "Will California Run Out of College Graduates?" Public Policy Institute of California, October 2015. https://www.ppic.org/publication/will-california-run-out-of-college-graduates/
[42] "UC's ambitious plan to help more students earn a degree," UC, July 24, 2019. https://www.universityofcalifornia.edu/news/uc-s-ambitious-plan-help-more-students-earn-degree

1.2 STUDY FRAMEWORK

The report is organized as follows: Section 2 (UC Budget Overview) provides detailed information on UC's operating budget and revenue streams, the impact of State funding decisions for UC, and the effects of COVID-19 on the University to date. Section 3 (Economic and Fiscal Impact Analysis) measures UC's economic and fiscal impacts throughout California, demonstrating the high returns on investment for supporting the University. Section 4 (Social Impact) spotlights additional contributions made by the University beyond UC-related direct spending evaluated in Section 3, in the form of academic programs, research and innovation, community benefits, and health care.

2 UC BUDGET OVERVIEW

As a renowned educational, research, and public service institution, UC is part of what makes California the economic powerhouse it is today. The high quality of services and opportunities offered at UC's ten campuses and six health centers attracts and educates the brightest students, professionals, faculty, and researchers.

UC's budget supports its mission to uphold a gold standard in teaching, research, and public service, thereby fostering economic growth throughout California. In particular, UC's core funds – the State General Funds, UC General Funds, and student tuition and fees – represent crucial permanent support for UC's mission-related activities.[43]

UC's expenditures generate substantial economic activity throughout California, as quantified in Section 3 (Economic and Fiscal Impact Analysis) of this report. In 2018-19, UC-specific expenditures (less student spending and retirement benefits) totaled $37.2 billion, generating $73.5 billion in total economic output in California. Of this amount, half ($36.9 billion) was generated through multiplier or ripple effects, supporting supply-chain interaction and household incomes across California.

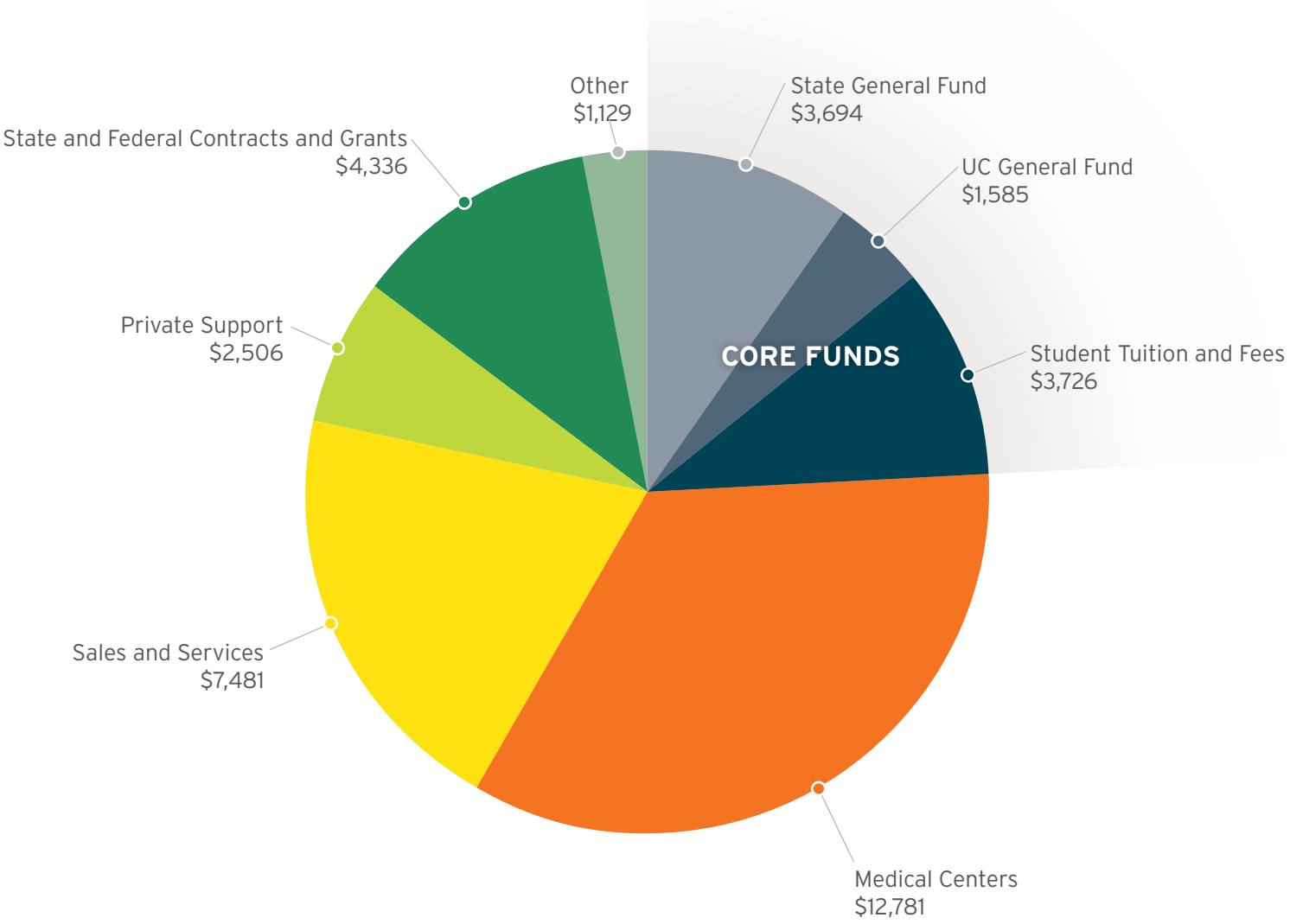
The following budget analysis outlines UC's sources of funding, State funding leverage for UC, and the impacts of COVID-19 on the University to date.

[43] Most budget information and data provided in this section (Section 2) are taken from UC's 2020-21 Budget for Current Operations. Information on UCH hospitals is based on FY 2018-19 UC Medical Report. Data and/or information provided by other sources are otherwise referenced.

2.1 UC FUNDING OVERVIEW

UC receives funding from a variety of public and private sources, as shown in Figure 2.1a. Its campus operations rely primarily on revenue from three sources: State General Funds; UC General Funds, including Nonresident Supplemental Tuition and Indirect Cost Recovery (ICR); and student tuition and fees, including the Student Service Fee and Professional Degree Supplemental Tuition. These three sources are referred to as UC's "core funds". Activities supported by core funds include faculty compensation, academic and administrative support, student services, capital improvements and maintenance, and financial aid. Most of UC's strategic systemwide budget planning and interaction with the State involves the allocation of these funds.

Figure 2.1a: Sources of Funding (in Millions), 2018-19



Source: UC 2020-21 Budget for Current Operations; Beacon Economics

State Funding

In 2018-19, State support for UC totaled $3.9 billion.44 Such support is crucial to UC's core operations; in 2018-19, State General Funds totaled $3.7 billion, representing 41% of total core funds.

- $993.7 million in financial aid, which includes $956.5 million in Cal Grants funding and $28.1 million for California's Middle Class Scholarship program.45 Additionally, the California DREAM Loan Program, jointly funded by the State and UC, provided $5 million in loans to eligible undocumented undergraduates. 46
-
- $353 million in contracts and grants from state agencies, which provided significant support for UC research.
-
- $223 million from direct research expenditures47 and $76.2 million from special State appropriations for mandated research programs.48 State funding provides seed money for many research projects vital to California, such as earthquake engineering and improved crop varieties. Additionally, State funds support research for statewide programs related to HIV/AIDS, tobacco-related disease and prevention, and breast cancer.

[44] 2018-19 State Budget, University of California. Department of Finance, California Budget. June 27, 2018. http://www.ebudget.ca.gov/budget/publication/#/e/2018-19/Agency/6013
[45] "Student Financial Support Data Tables," University of California, 2018-19, https://www.universityofcalifornia.edu/infocenter/financial-support
[46] Starting in 2020-21, undocumented graduate students will also be eligible for the California DREAM Loan Program.
[47] UC Financial Data Warehouse
[48] Agency Reconciliation Report for June 20, 2019

Federal Funding

Federal support totaled $8.5 billion[49] in 2018-19. Federal funding is UC's primary source of research support and student financial aid. In 2018-19, Federal funding accounted for 43% of UC research expenditures and 35% of financial aid.

Indirect Cost Recovery (ICR) generated by Federal research is crucial for campus operations. A portion of ICR is a component of UC General Funds and therefore supports core mission activities. ICR funding is also allocated to contract and grant administration and special programs.

Federal funding for UC in 2018-19 included:

- $4.2 billion for program support: $2.3 billion in research grants and projects, $829.2 million in ICR from Federal research, and $775.8 million designated to fully fund LBNL;
- $1.7 billion for financial aid, which included $1.1 billion in student loans and $411.8 million in Pell Grants for low income students;
- $4.7 billion for UCH hospitals for patient care reimbursements through Medicare ($2.6 billion), along with Medicaid ($2.1 billion, part of which is State-matched funding).

[49] Excludes Medicaid, which totaled $2.1 billion in 2018-19, part of which is State-matched funding. Data on the State's portion of Medicaid (Medi-Cal) was unavailable and therefore Medicaid is excluded from this figure.

University of California Health

University of California Health operates and owns twelve UCH hospitals and medical centers at the Davis, Irvine, Los Angeles, San Diego, and San Francisco campuses, which generated $12.8 million in FY 2018-19. These hospitals are almost entirely self-supporting, relying on reimbursements from governmental and commercial payors. Most revenue (62%) comes from patients with contracted health insurance. Patients on Medicare and Medi-Cal contribute 21% ($2.6 billion) and 17% ($2.1 billion) of UCH hospital revenue, respectively, though these patients represent 70% of the population served by UCH hospitals and clinics. Costs associated with Medicare and Medi-Cal patients are not fully covered; it is estimated that Medi-Cal reimbursement covers between 50% and 60% of the cost of services per patient. In 2018-19, UCH had a total net loss of approximately $1.7 billion in caring for government payor and uninsured inpatients and outpatients.[50]

Other Funding Sources

Other sources of funding include revenue from sales and services, such as auxiliary enterprises (housing and dining services, parking facilities, bookstores, etc.), University Extension and summer sessions, and other self-supporting instructional programs; private support, such as gifts and grants from alumni and foundations; and other sources, including National Laboratory management fee revenue and intellectual property royalty income. Over 80% of funds for the University's operating budget are restricted for specific uses. This includes endowments and private scholarship funding designed for specific purposes, sponsored research funding, and revenue from self-supporting enterprises such as UC's hospitals and services in the sales and services funding category like University Extension and auxiliaries.

[50] UCH Hospital Impact Data for FY 2018-19

2.2 STATE FUNDING LEVERAGE

As noted, some UC enterprises are self-supporting, such as UC medical centers and hospitals, auxiliary enterprises, and University Extension. By contrast, UC's core operations and its ability to grow rely heavily on external sources, particularly the State. The relationship between California and UC is symbiotic; UC benefits from State investment, which enables the system to provide high-quality services and activities, and the state benefits from an optimally performing University system. UC's instruction, research, and public service efforts help California meet its workforce needs, by supplying both workers and jobs, and foster community development by increasing degree production, addressing opportunity gaps, and investing in faculty and research. Sustainable core revenue is essential to maintain and advance these objectives. State funds – representing 41% of UC's core operating budget – are not only a major source of support for the University's mission activities, but also help attract funding from other sources.

In 2018-19, excluding income generated by self-supporting enterprises (such as UCH hospitals and clinics, and other auxiliaries falling under the sales and services category in Figure 2.1a), UC operating income totaled $17.0 billion, of which the State's $3.9 billion was supplemented by an additional $13.1 billion in non-state-government sources, including Federal support, student tuition and fees, and private/nonprofit research grants. In other words, every $1 of State funding corresponded to $3.36 in non-state government support in 2018-19.

Strong investment enables UC to deliver high-quality educational programs and services that attract hundreds of thousands of students to UC institutions annually. UC students are vital to their campus-area economies, spending $5.2 billion in out-of-pocket money on non-tuition-related regional goods and services in 2018-19 across California. This activity suggests that every $1 of State funding also corresponded to $1.33 in non-tuition-related student expenditures in 2018-19.

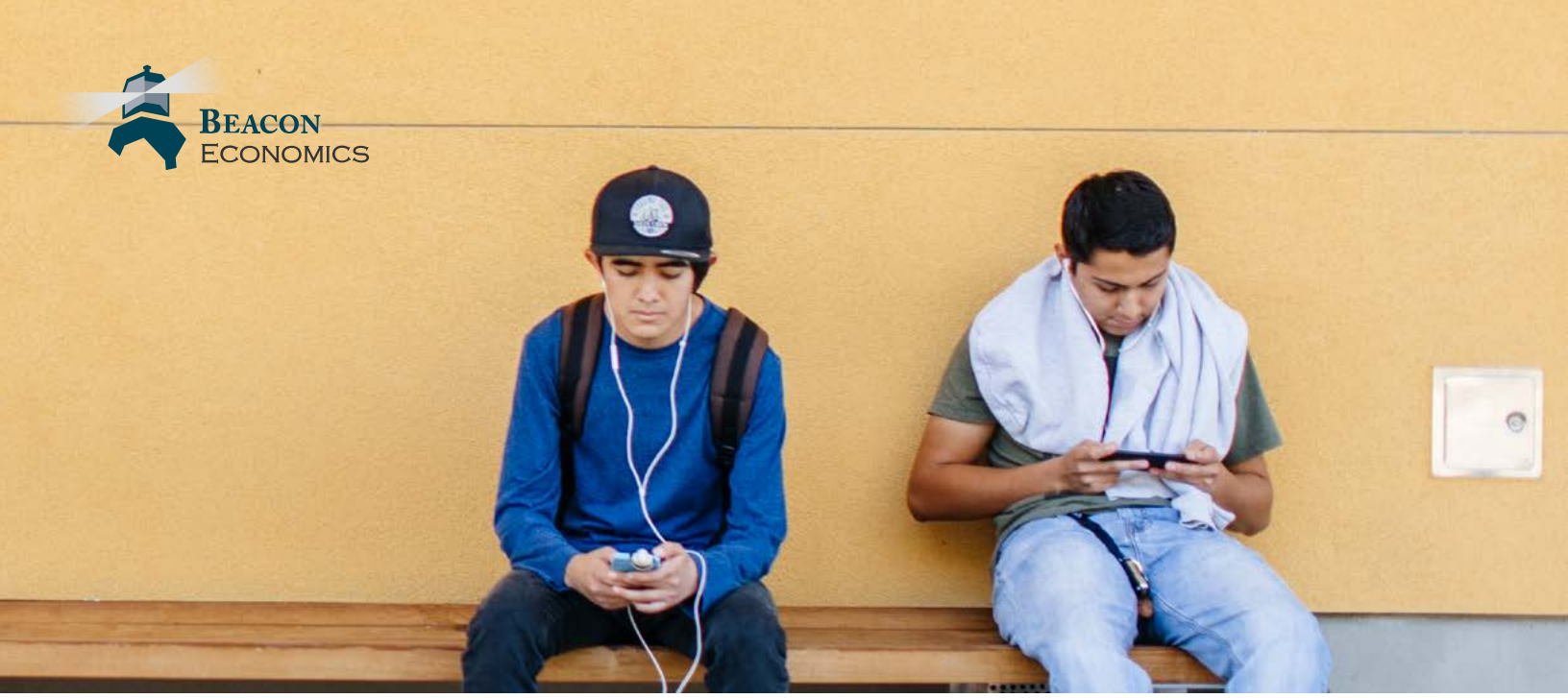
Ultimately, there is high return on investment from State funding for UC, which leverages non-state-government support and non-tuition-related student spending on regional goods and services. Results of Beacon Economics' economic and fiscal impact analysis in Section 3 reveal that State funding for UC and its leverage contributed $82.1 billion in economic output, $55.8 billion in value added, $37.6 billion in labor income, 529,119 in employment (the number of full-time, part-time, and temporary positions), and $11.7 billion in Federal, state, and local tax revenue in California in 2018-19.

As detailed in Section 3, UC-related spending includes UC operations and construction spending, along with out-of-pocket spending by UC students, employees, and retirees. In 2018-19, UC-related

expenditures totaled $44.9 billion, of which State funding accounted for roughly 9%. Every $1 of State funding generated roughly $21.04 in economic output, $9.65 in labor income, $14.32 in value added, and $3.01 in Federal, state, and local tax revenue in 2018-19. Additionally, every $7,371 in State funding supported one job.

Amid a deteriorating State budget resulting from the COVID-19 pandemic, the 2020-21 State Budget reduces funding for UC by $543.6 million, or 13%, relative to the State Budget proposed by the Governor in January 2020. This reduction includes a $428.4 million decline for UC core operational costs and eliminates all new augmentations proposed in the January 2020 Governor's Budget, including $50 million to develop a UC Davis grant program for animal shelters, $4 million for degree and certificate completion programs through University Extension, and $1.3 million to develop a UC Subject Matter Project in computer science. [51]

[51] 2020-21 State Budget, University of California. Department of Finance, California Budget. June 26, 2020. http://www.ebudget.ca.gov/budget/2020-21/#/Department/6440



2.3 IMPACT OF COVID-19

The pandemic and resulting reduction in global economic activity have devastated universities nationwide. By mid-March 2020, all UC campuses had transitioned to remote instruction, most students had moved off-campus, and UCH hospitals and clinics had halted many nonessential surgeries. Initiating remote instruction, refunding student housing and dining contracts, canceling elective surgeries, pausing sporting events and study abroad programs, and other expenses cost $2.7 billion for March through October 2020.

Losses at UC's campuses (excluding UCH hospitals) accounted for roughly 53% ($1.4 billion) of the $2.7 billion, which included $1.2 billion in lost revenue and $159 million in additional costs. Most lost revenue was in housing and dining contracts, where losses totaled $563 million at UC general campuses. Reductions in housing and dining revenue severely strain the system because housing and dining generate roughly 67% of auxiliary enterprise income.

UCH hospital losses totaled $1.3 billion. They included $989 million in lost revenue and $272 million in costs such as emergency medical services, deep cleaning of facilities, and telemedicine. Roughly $533 million in losses resulted from canceled surgeries deemed nonessential during the early phase of the pandemic. Additionally, by mid-April 2020, UCH's hospitals had treated more than 1,000 COVID-19 patients at tremendous cost. In the early stages of the pandemic, costs to prepare facilities for COVID critical care ranged from $1 million to $10 million per patient.[52] Furthermore, the pandemic has cost many Californians their jobs, which has led to more people losing employer-sponsored health insurance. This may affect the

[52] Watanabe, Teresa. "UC reels under staggering coronavirus costs; 'the worst impacts…all at once.'" L.A. Times. April 16, 2020. https://www.latimes.com/california/story/2020-04-16/uc-reeling-under-staggering-coronavirus-costs-the-worst-impacts-all-at-once

payor distribution for UCH clinical care services such that more people transition to Medi-Cal or become uninsured. With $2.3 billion provided in charity care by UCH hospitals in 2018-19, this payor mix disruption would further reduce revenue to UCH hospitals and clinics.[53]

As of September 2020, UC received about $796 million in Federal support as part of the CARES Act, which designated approximately $14 billion in aid to higher-education institutions nationwide. Of this total support, $137.4 million was for campuses and $130 million to support financial aid, such as grants and scholarships.[54] UCH hospitals received about $516 million of the CARES Act funding, which included $14.7 million for the UCSF Benioff Children's Hospital and $9.8 million for "COVID hotspot" funding.

Although the University has experienced great economic loss resulting from the pandemic, its hospitals and health professional schools have been at the forefront of California's COVID care delivery, public health response, testing, treatment, and prevention. Beginning with six COVID patients at the end of February 2020, UC hospitals have tested almost 400,000 individuals and treated more than 15,000 COVID positive patients, including more than 3,300 inpatients by December 1, 2020.

After the Food and Drug Administration (FDA) allowed sophisticated non-Federal labs to independently develop COVID tests in response to a national testing shortage in late February 2020, UCH hospitals began in-house testing, and by mid-March 2020, UCH hospitals had the capacity to conduct in-house laboratory-developed tests with a faster turnaround than was possible through tests shipped by the Centers for Disease Control and Prevention. About one month later, more than 35,000 COVID tests had

[53] UC Accountability Report 2020, p. 167. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf
[54] "COVID-19: An Overview of Federal Higher Education Relief." LAO. April 28, 2020. https://lao.ca.gov/Publications/Report/4225

been performed on UCH patients.[55] As mentioned, UCH has tested nearly 400,000 patients to date, which excludes additional tests administered to community stakeholders for public health, other health systems, and special populations such as agricultural workers and the homeless. Major clinical trials of COVID treatments and vaccines are underway at all UCH facilities, including vaccines nearing the final stages of FDA review.

UCH hospitals were among the first in the state to implement emergency operations plans, increasing bed capacity (surge beds) by 40% (1,481 beds). Additionally, UCH accelerated research initiatives. By early April 2020, more than 300 research projects, proposals, and clinical trials related to SARS-CoV-2, the virus, and COVID-19, the disease, were underway.[56] UCH labs developed new diagnostic technology (such as SwabSeg at UCLA Health which has received FDA Emergency Use Authorizations and CRISPR testing at UCSF in collaboration with Mammoth BioSciences), and potential new therapeutics (such as AeroNabs at UCSF). Important work on health disparities across populations and communities has also been conducted at UCH.

[55] UC Accountability Report 2020, p. 166. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf
[56] Ibid.

3 ECONOMIC AND FISCAL IMPACT ANALYSIS

This section evaluates UC's systemwide economic and fiscal impact throughout California. The analysis considers 19 UC entities – 10 campuses, six academic health centers including the five teaching hospitals, Lawrence Berkeley National Lab (LBNL), UC Office of the President (UCOP), Hastings College of the Law, and UC's statewide division of Agriculture and Natural Resources (ANR). Impacts are evaluated within 14 regions outlined in Figure 3a, which cover the state. The regions selected for this analysis align with those used by the California Postsecondary Education Commission (CPEC) for various planning and statistical analyses. Figure 3b lists the UC entities analyzed in this study, and the county and CPEC region of each entity. Note that only ANR headquarters (HQ) are detailed in Figure 3a, but the division has cooperative extension offices in virtually every California county.

BEACON ECONOMICS

Figure 3a: Map of UC Entities

Sources: Beacon Economics, UCOP, California Postsecondary Education Commission

BEACON ECONOMICS

Figure 3b: UC Entities by County and Region

Entity	County	Region[1]
General Campuses[2]		
UC Berkeley	Alameda	San Francisco Bay Area
UC Davis	Yolo	Sacramento-Tahoe
UC Irvine	Orange	Orange County
UCLA	Los Angeles	Los Angeles County
UC Merced	Merced	North San Joaquin Valley (SJV)
UC Riverside	Riverside	Inland Empire
UC San Diego	San Diego	San Diego-Imperial
UC Santa Barbara	Santa Barbara	Central Coast
UC Santa Cruz	Santa Cruz	Monterey Bay
UCH[3]		
UC Davis Health	Sacramento	Sacramento-Tahoe
UCI Health	Orange	Orange
UCLA Health	Los Angeles	Los Angeles County
UC Riverside Health[4]	Riverside	Inland Empire
UC San Diego Health	San Diego	San Diego-Imperial
UCSF	San Francisco	San Francisco Bay Area
Other UC Entities		
Lawrence Berkeley National Laboratory	Alameda	San Francisco Bay Area
UC Office of the President	Alameda	San Francisco Bay Area
Hastings College of the Law	San Francisco	San Francisco Bay Area
UC Agriculture and Natural Resources[5]	Multiple Counties	Statewide

Sources: California Postsecondary Education Commission, UCOP
[1] "Region" represents the entity's location and does not imply limits to where the entity's impacts are generated. Entity impacts are multi-regional, with spillover effects occurring beyond an entity's home region.
[2] General Campuses include entities that offer undergraduate, graduate, and professional education, excluding health professional education.
[3] UCH includes the 20 health professional schools, six academic health centers, and five UCH hospitals.
[4] Impacts for UC Riverside Health are combined with UC Riverside general campus because most data were not disaggregated from the general campus. Note that UC Riverside Health does not have its own hospital and provides medical care through faculty and residents at clinics and community hospitals.
[5] Impacts for UC ANR are combined with UCOP because most data were not disaggregated.

Given UC's many functions, this economic and fiscal impact analysis does not capture the breadth of the system's contributions. For example, this analysis excludes the impact of UC alumni spending and spending by visitors attending University events, as these assessments are beyond the project scope. Many of UC's impacts go beyond its direct spending, including its role in enhancing human capital, fostering breakthrough research and innovation, and promoting business creation. These impacts are difficult to measure within an economic framework, yet they are perhaps the system's most significant. Section 4 of this report, UC's Social Impact, discusses the magnitude of these impacts.

3.1 DATA SOURCES AND METHODOLOGY

The objective of this section is to measure UC's economic and fiscal impacts to California. Impact analyses use expenditure data to estimate an entity's contributions to an economy. For example, UC spending $100 million on a construction project would support a certain number of jobs and generate additional economic activity that would have otherwise not been produced in the absence of UC's project.

UC's contribution stems not only from its own institutional spending but also from spending by individuals associated with the University, including its employees, retirees, and students. For example, a student moving to Los Angeles to attend UCLA spends his or her own money at businesses in the region, such as restaurants and grocery stores. These purchases support the regional economy and are considered part of UC's impact.

To conduct UC's systemwide economic and fiscal impact analysis, Beacon Economics assessed three UC-related expenditure categories for fiscal year 2018-19: University spending on construction, University spending on operations (employee and retiree compensation, other operating costs), and non-tuition-related personal student spending (non-University spending). Employee and retiree spending are captured by University spending on employee and retiree compensation. Figure 3.1a defines the three UC-related expenditure categories.

Figure 3.1a: UC Expenditure Categories

Expenditure Category	Description
Construction	UC's 2018-19 spending on construction, including campus infrastructure and facility maintenance, improvements, and expansions.
Operations	UC's 2018-19 spending on employee compensation, retirement benefits, and other operations • **Employee Compensation:** UC employee salaries and benefits. Employee Compensation also captures employee spending. • **Retirement Benefits:** Distributions of UC retiree medical benefits and pensions. Retirement Benefits also captures retiree spending. • **Other Operations:** Non-salary spending on goods and services to support ongoing operations, including supplies and materials, utilities, scholarships and fellowships, and other miscellaneous operating expenses.
Student Spending	Personal non-tuition-related spending in 2018-19 by undergraduate and graduate students on regional goods and services, including food, non-UC housing, transportation, health care, and other personal expenses such as retail and recreation. These are students' personal expenditures, as opposed to those of the University.

Sources: UCOP, Beacon Economics

UCOP provided detailed expenditure data for the impact analysis, including UC operating and construction spending, employee payroll information, and retiree medical benefits and pension distributions. UCOP also provided detailed student budget information, which broke down average student spending by campus and living status (on-campus, off-campus, or commuter) on various goods and services, such as books and supplies, transportation, personal expenses, housing, and health care. Beacon Economics used this information with undergraduate and graduate student enrollment to estimate total student spending by campus.

Because this impact analysis assesses the University's contribution to California, this analysis evaluates only expenditure data for spending in California and does not account for out-of-state spending. UC generates additional impacts outside California that are beyond the scope of this study.

EXPENDITURES

Systemwide UC expenditures (excluding student spending) totaled $39.9 billion in 2018-19, including retirement benefits. As a people-driven institution, employee compensation represents the single largest category of expenses for the University, accounting for 49% of total UC spending (construction and operations). UC salary requirements are largely driven by the need to hire and retain high-quality faculty and staff at competitive rates. The quality and performance of UC are founded on its distinguished faculty, who deliver exceptional instructional programs, professional leadership, public service, research, and creative work that make the University invaluable.

Section 4 of this report (UC's Social Impact) highlights UC's role in enhancing human capital and social mobility by providing its students access to high-quality instruction. UC instruction ensures student preparedness for careers after graduation, providing the state with a talented workforce that will continue to generate additional economic activity over time. In addition, students generate impacts during their time enrolled at UC by spending their own money on goods and services in the region, such as on groceries, entertainment, and retail. In 2018-19 UC student spending totaled $5.2 billion throughout California. Figure 3.1b summarizes University spending on construction and operations, along with UC student spending, all of which is considered UC-related spending.

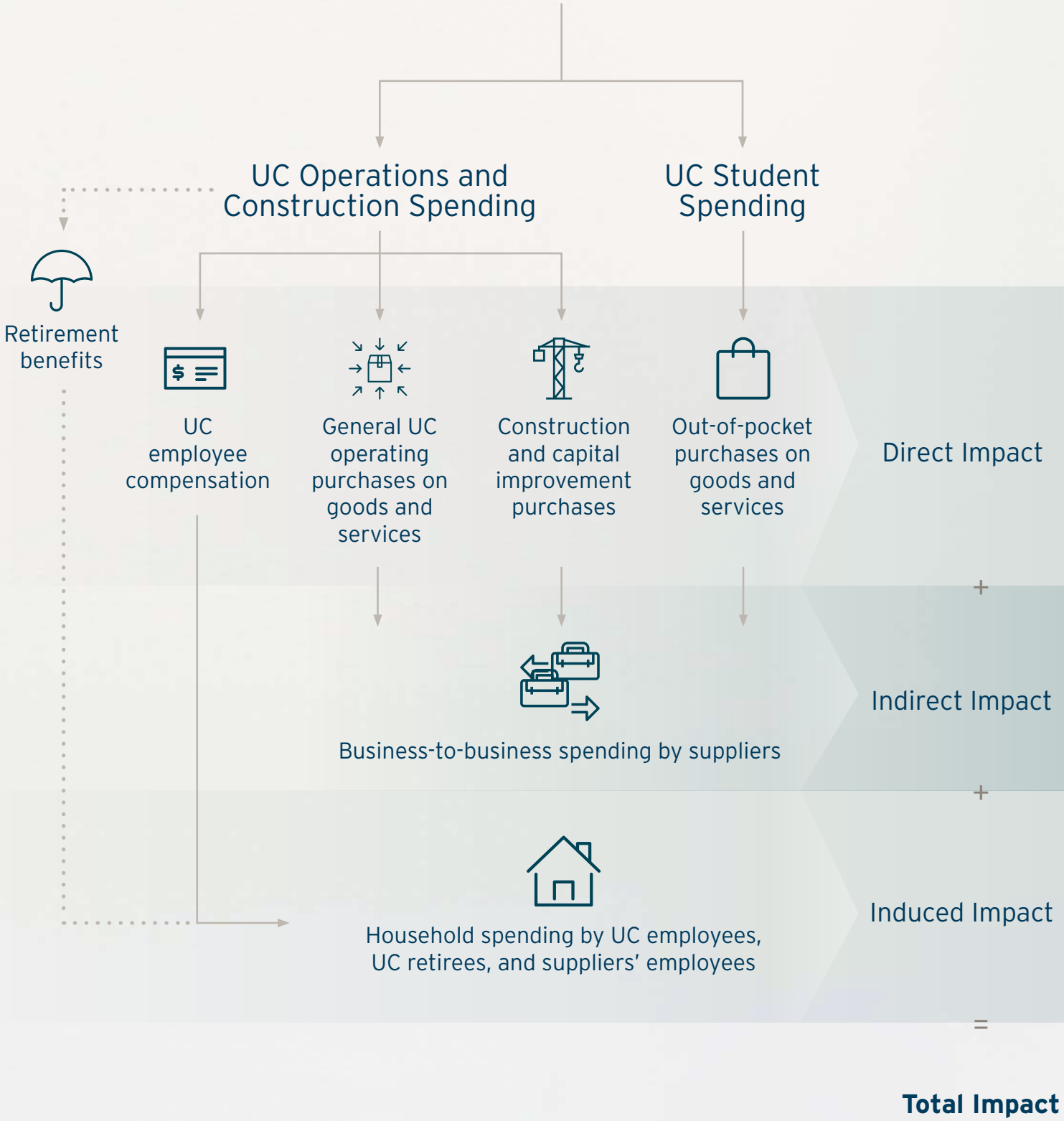
Figure 3.1b: Systemwide UC-Related Expenditures 2018-19, in Millions

Expenditure	UC General Campuses	UCH	Other UC Entities[2]	Systemwide Total
Construction[1]	$2,818.52	$1,138.68	$214.89	$4,172.09
Operations	$16,283.21	$17,214.14	$2,098.75	$35,596.10
Employee Compensation	$7,631.38	$10,990.08	$920.28	$19,541.74
Other Operations	$7,016.31	$5,551.45	$776.81	$13,344.57
Retirement Benefits	$1,635.52	$672.61	$401.66	$2,709.79
Student Spending	$4,907.72	$247.82	n/a	$5,155.54
Total	**$24,009.45**	**$18,600.64**	**$2,313.63**	**$44,923.73**

Sources: UCOP, Beacon Economics
Note: Totals may not be exact because of rounding.
[1] UCH construction pertains only to projects at UCH hospitals.
[2] Includes LBNL, UCOP, ANR, and select expenditure categories for Hastings, Associated Students UCLA, and Lawrence Livermore National Lab.

BEACON ECONOMICS

UC Related Spending



Source: Beacon Economics

BEACON ECONOMICS

MODELING THE DATA

Beacon Economics estimates the economic and fiscal impacts of UC's general campuses, academic health centers and teaching hospitals, and other entities in California using the IMPLAN modeling system.[57] Impact studies assume that any increase in spending has a direct effect, an indirect effect, and an induced effect.

The indirect and induced effects are also known as "ripple" or "multiplier" effects, as initial direct expenditures generate sequential rounds of spending in the economy. The sum of the direct, indirect, and induced effects is the total impact. This study measures economic impacts through four common economic indicators: employment, labor income, output, and value added, defined in Key Terms at the beginning of this report.

[57] For details on the IMPLAN modeling system, see Appendix B.

3.2 ECONOMIC IMPACT

This section provides comprehensive quantitative estimates of the state-level economic impacts generated by UC-related spending. As defined in Section 3.1, direct economic impacts are the effects resulting from immediate UC-related spending, and the indirect and induced impacts are ripple effects in the economy (supply-chain interaction and increased household spending). Impacts are indicated by effects on employment, labor income, value added, and output.

EMPLOYMENT IMPACTS

In 2018-19, employment supported by University direct spending (construction and operations) included about 230,600 total UC employees (the April 2019 count of the 228,824 UC employees in April 2020, mentioned previously) and 30,300 employees supported by non-UC-salary University spending on other operating costs and construction. Employment includes full-time, part-time, and temporary jobs. An additional 49,500 jobs are directly supported by out-of-pocket spending by UC students, meaning almost 310,400 jobs in California are directly attributable to UC. Including ripple effects (indirect and induced impacts), 529,119 jobs are supported by UC-related spending, which is one in every 45 jobs in California.[58] Every job directly supported by UC-related spending supports 0.7 indirect and induced jobs in California (an employment multiplier of about 1.7). In terms of entity type, every one job directly supported by General Campuses supports an additional 0.5 indirect and induced jobs, and every one job directly supported by UCH supports an additional 1.1 indirect and induced jobs.

[58] Based on IMPLAN's California total employment

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Figure 3.2a: Summary of Employment[1] Economic Impacts

	UC General Campuses[2]	UCH[3]	Other UC Entities[4]	Systemwide Total
Construction				
Direct	18,687	5,980	1,202	25,870
Indirect and Induced	11,995	3,979	677	16,652
Total	30,682	9,959	1,880	42,521
Operations				
Direct	140,261	86,168	8,616	235,044
Indirect and Induced	76,390	98,422	6,020	180,832
Total	216,651	184,590	14,635	415,879
Student Spending				
Direct	47,171	2,301	n/a	49,472
Indirect and Induced	20,356	985	n/a	21,341
Total	67,433	3,286	n/a	70,719
Total				
Direct	**206,119**	**94,449**	**9,818**	**310,386**
Indirect and Induced	**108,741**	**103,386**	**6,697**	**218,824**
Total	**314,769**	**197,835**	**16,515**	**529,119**

Source: IMPLAN; analysis by Beacon Economics
Note: Totals may not be exact because of rounding.
[1] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.
[2] Includes activity associated with entities that offer undergraduate, graduate, and professional education (excluding health professional education), including UCLA, UC Davis, UC Irvine, UC Riverside, UC San Diego, UC Santa Cruz, UC Merced, UC Berkeley, and UC Santa Barbara. Includes activity associated with UC Riverside Health as most data were not disaggregated from the general campus.
[3] Includes activity associated with health professional schools, academic health centers, and UCH hospitals at UCSF, UCLA Health, UC San Diego Health, UC Davis Health, UCI Health. Does not include activity associated with UC Riverside Health as most data were not disaggregated from the general campus.
[4] Includes activity associated with LBNL, UCOP, Hastings, and UC ANR.

LABOR INCOME IMPACTS

UC employees and non-UC-salary employees supported by University direct spending (operations and construction) earned about $21.6 billion in labor income (all forms of employment income, including fringe benefits) across California in 2018-19. Student spending generated an additional $2.3 billion in labor income. As such, over $23.8 billion in labor income (1.3% of the state's total) is directly attributable to UC in California. With the addition of ripple effects, UC-related spending supports $37.6 billion in labor income, meaning every $1 of direct labor income produced by UC-related spending generates an additional $0.6 in indirect and induced labor income in California (a labor income multiplier of about 1.6). By entity type, every $1 in labor income directly generated by General Campuses produces an additional $0.5 in indirect and induced labor income, and every $1 in labor income directly generated by UCH produces an additional $0.6 in indirect and induced labor income.

BEACON ECONOMICS

Figure 3.2b: Summary of Labor Income Economic Impacts, in Millions

	UC General Campuses[1]	UCH[2]	Other UC Entities[3]	Systemwide Total
Construction				
Direct	$1,377.01	$515.41	$114.29	$2,006.71
Indirect and Induced	$734.39	$284.11	$52.43	$1,070.94
Total	$2,111.40	$799.52	$166.72	$3,077.64
Operations				
Direct	$7,725.48	$11,143.96	$706.41	$19,575.85
Indirect and Induced	$4,485.72	$6,419.20	$472.66	$11,377.58
Total	$12,211.20	$17,563.15	$1,179.07	$30,953.43
Student Spending				
Direct	$2,155.64	$110.45	n/a	$2,266.09
Indirect and Induced	$1,278.70	$64.75	n/a	$1,343.45
Total	$3,434.34	$175.20	n/a	$3,609.54
Total				
Direct	**$11,258.13**	**$11,769.81**	**$820.70**	**$23,848.65**
Indirect and Induced	**$6,498.81**	**$6,768.06**	**$525.09**	**$13,792.96**
Total	**$17,750.83**	**$18,537.88**	**$1,345.80**	**$37,634.51**

Source: IMPLAN; analysis by Beacon Economics
Note: Totals may not be exact because of rounding.
[1] Includes activity associated with entities that offer undergraduate, graduate, and professional education (excluding health professional education), including UCLA, UC Davis, UC Irvine, UC Riverside, UC San Diego, UC Santa Cruz, UC Merced, UC Berkeley, and UC Santa Barbara. Includes activity associated with UC Riverside Health as most data were not disaggregated from the general campus.
[2] Includes activity associated with health professional schools, academic health centers, and UCH hospitals at UCSF, UCLA Health, UC San Diego Health, UC Davis Health, UCI Health. Does not include activity associated with UC Riverside Health as most data were not disaggregated from the general campus.
[3] Includes activity associated with LBNL, UCOP, Hastings, and UC ANR.

VALUE ADDED IMPACTS

UC spending contributes directly to $27.6 billion in value added to California. UC student spending generated an additional $3.8 billion in direct value added, bringing UC's direct contribution to GSP to $31.5 billion, over 1% of total GSP, which is valued at $2.9 trillion.[59] When indirect and induced effects are considered, over $55.8 billion in value added is attributable to UC, accounting for about 2% of GSP. For every $1 in direct value added produced by UC-related spending, an additional $0.8 in indirect and induced value added is generated (a value added multiplier of about 1.8). Every $1 in direct value added generated by General Campuses produces an additional $0.7 in indirect and induced value added, and every $1 in value added generated by UCH produces an additional $0.8 in indirect and induced value added.

[59] IMPLAN

BEACON ECONOMICS

Figure 3.2c: Summary of Value Added Economic Impacts, in Millions

	UC General Campuses[1]	UCH[2]	Other UC Entities[3]	Systemwide Total
Construction				
Direct	$1,863.52	$763.28	$153.44	$2,780.24
Indirect and Induced	$1,291.38	$492.10	$91.23	$1,874.71
Total	$3,154.90	$1,253.77	$244.67	$4,653.34
Operations				
Direct	$10,667.60	$13,224.06	$976.49	$24,868.16
Indirect and Induced	$8,293.66	$11,048.40	$846.75	$20,188.81
Total	$18,961.26	$24,272.46	$1,823.25	$45,056.97
Student Spending				
Direct	$3,656.17	$186.84	n/a	$3,843.02
Indirect and Induced	$2,178.64	$110.57	n/a	$2,289.21
Total	$5,834.81	$297.41	n/a	$6,132.23
Total				
Direct	**$16,187.30**	**$14,174.18**	**$1,129.93**	**$31,491.41**
Indirect and Induced	**$11,763.67**	**$11,651.07**	**$937.93**	**$24,352.72**
Total	**$27,940.54**	**$25,823.67**	**$2,067.91**	**$55,832.12**

Source: IMPLAN; analysis by Beacon Economics
Note: Totals may not be exact because of rounding.
[1] Includes activity associated with entities that offer undergraduate, graduate, and professional education (excluding health professional education), including UCLA, UC Davis, UC Irvine, UC Riverside, UC San Diego, UC Santa Cruz, UC Merced, UC Berkeley, and UC Santa Barbara. Includes activity associated with UC Riverside Health as most data were not disaggregated from the general campus.
[2] Includes activity associated with health professional schools, academic health centers, and UCH hospitals at UCSF, UCLA Health, UC San Diego Health, UC Davis Health, UCI Health. Does not include activity associated with UC Riverside Health as most data were not disaggregated from the general campus.
[3] Includes activity associated with LBNL, UCOP, Hastings, and UC ANR.

ECONOMIC OUTPUT IMPACTS

UC spending generates $36.6 billion in direct economic output in California, and an additional $5.2 billion is produced by direct out-of-pocket UC student spending. Factoring in ripple effects, over $82.1 billion in economic output in California is attributable to UC, effectively doubling the return on investment. UC-related spending in California generated more economic output than was generated by the entire states of Wyoming ($77.7 billion) and Vermont ($65.9 billion) in 2018-19.[60] Every $1 in direct economic output produced by UC-related spending generates roughly $1.0 in additional indirect and induced economic output (an economic output multiplier of about 2.0). In terms of entity type, $1 in economic output generated by General Campuses produces an additional $0.9 in indirect and induced economic output, and every $1 in economic output generated by UCH produces an additional $1.1 in indirect and induced economic output.

[60] IMPLAN

BEACON ECONOMICS

Figure 3.2d: Summary of Economic Output Impacts, in Millions

	UC General Campuses[1]	UCH[2]	Other UC Entities[3]	Systemwide Total
Construction				
Direct	$2,818.52	$1,138.68	$214.89	$4,172.09
Indirect and Induced	$2,250.52	$823.28	$147.43	$3,221.22
Total	$5,069.04	$1,961.96	$362.31	$7,393.31
Operations				
Direct	$14,663.55	$16,548.05	$1,210.48	$32,422.08
Indirect and Induced	$13,997.54	$18,010.26	$1,278.55	$33,286.34
Total	$28,661.09	$34,558.31	$2,489.03	$65,708.42
Student Spending				
Direct	$4,907.72	$247.82	n/a	$5,155.54
Indirect and Induced	$3,641.02	$181.18	n/a	$3,822.20
Total	$8,548.74	$429.00	n/a	$8,977.74
Total				
Direct	**$22,389.79**	**$17,934.56**	**$1,425.36**	**$41,749.71**
Indirect and Induced	**$19,871.38**	**$19,014.71**	**$1,425.97**	**$40,312.10**
Total	**$42,261.21**	**$36,949.31**	**$2,851.34**	**$82,061.86**

Source: IMPLAN; analysis by Beacon Economics
Note: Totals may not be exact because of rounding.
[1] Includes activity associated with entities that offer undergraduate, graduate, and professional education (excluding health professional education), including UCLA, UC Davis, UC Irvine, UC Riverside, UC San Diego, UC Santa Cruz, UC Merced, UC Berkeley, and UC Santa Barbara. Includes activity associated with UC Riverside Health as most data were not disaggregated from the general campus.
[2] Includes activity associated with health professional schools, academic health centers, and UCH hospitals at UCSF, UCLA Health, UC San Diego Health, UC Davis Health, UCI Health. Does not include activity associated with UC Riverside Health as most data were not disaggregated from the general campus.
[3] Includes activity associated with LBNL, UCOP, Hastings, and UC ANR.

TOTAL ECONOMIC IMPACTS BY REGION

The economic activity stemming from UC is felt in every region in California, even in those where UC does not have a campus or entity. Impact analysis was evaluated within the 14 CPEC regions, which cover the entire state (defined in Section 3 in Figure 3a). As shown in Figure 3.2e, systemwide UC-related spending has the largest absolute impacts across all indicators in the San Francisco Bay, Los Angeles, and San Diego-Imperial regions. This outcome is expected given the large concentration of UC operations there compared with other regions.

Adjusted for the size of each regions' economies, however, UC has the largest impacts in Sacramento-Tahoe (UC Davis and UC Davis Health), Monterey Bay (UC Santa Cruz), and Central Coast (UC Santa Barbara). For example, UC Davis employs over 10,000 FTE workers, making it the largest full-time employer in Yolo County – where it is located – ahead of the State of California, Cache Creek Casino Resort, and the U.S. Government.[61] With over 13,500 FTE employees, UC Davis Health employs more full-time workers than Dignity Health, Intel Corp., and Raley's Inc. in the Greater Sacramento region (comprising Sacramento, El Dorado, Placer, and Yolo counties).[62] Similarly, UC Santa Barbara is the largest employer in Santa Barbara County, with about 7,000 FTE employees, ahead of Raytheon, Sansum Clinic, and the Goleta Union School District.[63] In total, UC supported 2.2% of the state's employment and generated 1.5% of its total labor income, 1.9% of GSP, and 1.7% of economic output.

[61] "Largest Yolo County Employers," Sacramento Business Journal, May 31, 2019, https://www.bizjournals.com/sacramento/subscriber-only/2019/05/31/employers-yolo-county.html

[62] "Largest Sacramento Area Private-Sector Employers," Sacramento Business Journal, July 8, 2019, https://www.bizjournals.com/sacramento/subscriber-only/2019/07/05/employers-private-sector.html

[63] "Major Employers," Santa Barbara South Coast Chamber of Commerce, n.d., https://goletachamber.com/community/community-profile/major-employers/

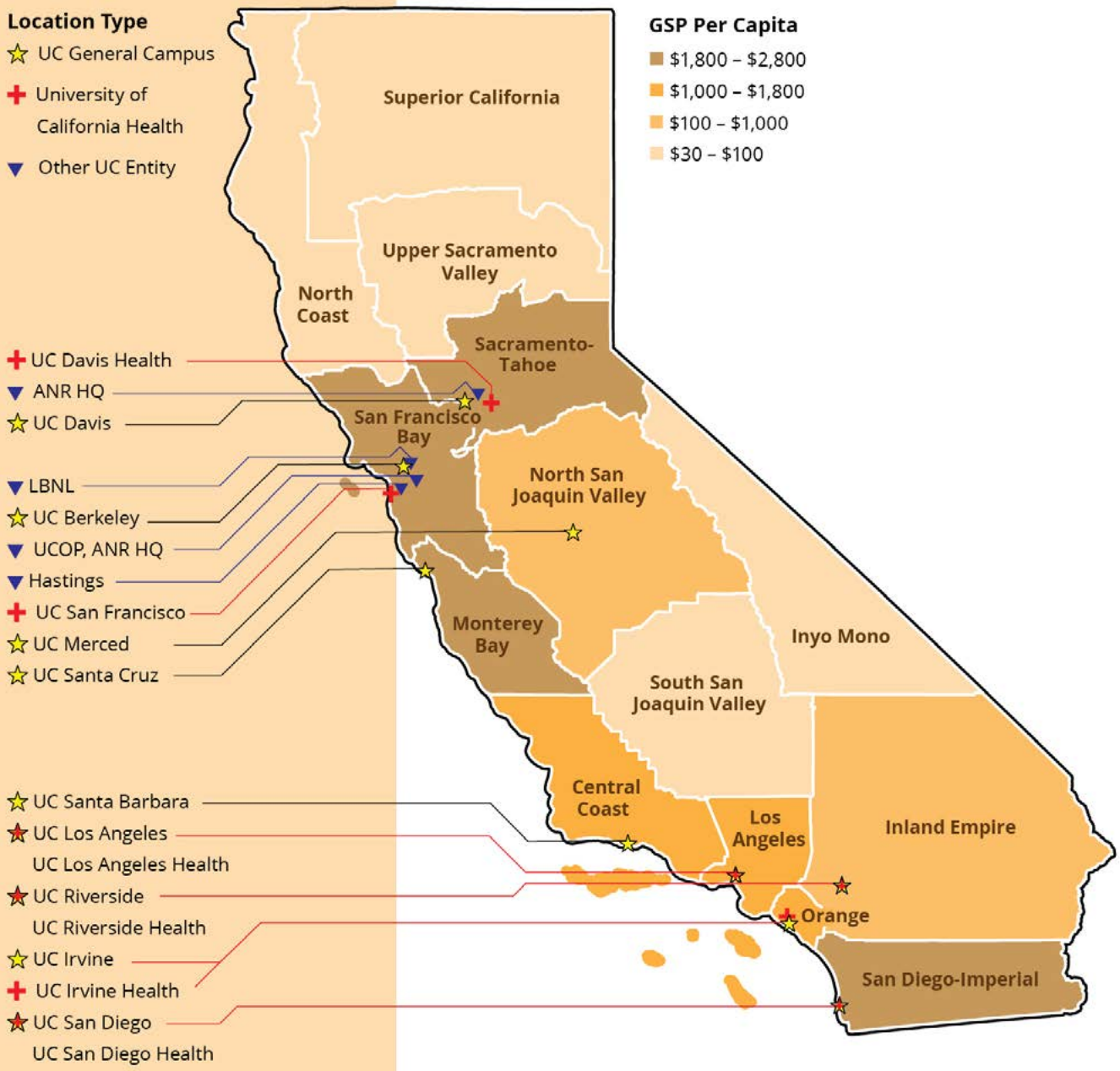
Figure 3.2e: UC Total Economic Impacts[1] and as a Share of Region Total

	Employment[2]		Labor Income		Value Added		Output	
	UC Impact	% of Region Total	UC Impact ($, Mil.)	% of Region Total	UC Impact ($, Mil.)	% of Region Total	UC Impact ($, Mil.)	% of Region Total
Central Coast	33,155	3.6%	$1,436.85	1.4%	$2,202.71	2.4%	$3,381.80	2.2%
Inland Empire	25,577	1.2%	$1,282.49	0.7%	$2,022.26	1.1%	$3,191.56	1.0%
Inyo Mono	13	0.1%	$0.83	0.0%	$1.37	0.1%	$2.33	0.1%
Los Angeles	109,338	1.7%	$7,829.03	1.2%	$11,951.99	1.6%	$17,090.22	1.4%
Monterey Bay	18,734	4.3%	$931.04	1.9%	$1,417.22	3.5%	$2,131.25	3.2%
North Coast	140	0.1%	$6.59	0.0%	$13.60	0.1%	$27.62	0.1%
North SJV	14,802	1.1%	$771.16	0.6%	$1,200.14	1.0%	$2,052.55	0.9%
Orange County	54,211	2.4%	$3,686.28	1.6%	$5,461.22	2.1%	$8,060.85	1.9%
Sacramento-Tahoe	77,911	5.2%	$5,204.98	3.5%	$7,476.13	4.9%	$11,162.91	4.6%
San Diego-Imperial	82,494	3.7%	$5,588.29	2.5%	$8,203.69	3.2%	$12,274.01	3.0%
San Francisco Bay	111,618	2.0%	$10,830.57	1.4%	$15,758.07	1.6%	$22,407.54	1.5%
South SJV	758	0.1%	$47.70	0.1%	$88.58	0.1%	$204.89	0.2%
Superior California	92	0.1%	$4.64	0.0%	$8.60	0.1%	$17.10	0.1%
Upper Sacramento Valley	275	0.1%	$14.07	0.1%	$26.55	0.2%	$57.22	0.2%
Total California	**529,119**	**2.2%**	**$37,634.51**	**1.5%**	**$55,832.12**	**1.9%**	**82,061.86**	**1.7%**

Source: IMPLAN; analysis by Beacon Economics
Note: Totals may not be exact because of rounding.
[1] Impacts are direct, indirect, and induced.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

Figure 3.2f displays UC's systemwide impact on GSP per capita. Impacts on a GSP per capita basis are most pronounced in the San Francisco Bay, Sacramento-Tahoe, Monterey Bay, and San Diego-Imperial regions, where UC represents a greater share of the economy.

Figure 3.2f: UC Systemwide Impact on Gross State Product (Value Added) Per Capita



Sources: Beacon Economics, IMPLAN

TOTAL ECONOMIC IMPACTS BY ENTITY

Figure 3.2g shows the University's total economic impact by UC entity. The entities with the largest total economic impacts across all indicators (employment, labor income, value added, and output) were UCSF, UCLA Health, and UCLA. Although student enrollment at UCH health professional schools is substantially lower than enrollment at General Campuses (all of UCH health professional schools' student enrollment ranked bottom-five in relation to General Campuses), spending by or associated with many of UCH entities generated greater impact than General Campuses (see UCSF, UCLA Health, and UC San Diego Health in Figure 3.2g). Such results are largely driven by these entities' full- and part-time employee headcounts; of the 19 UC entities evaluated, UCSF ranked first in terms of employee headcount (28,300 full- and part-time employees in April 2019), UCLA Health ranked second (26,900), and UC San Diego Health ranked seventh (18,100).[64] The sizable impacts generated by direct employment are twofold: first, as revealed in the expenditures section of this report (Section 3.1), employee compensation accounts for most operations spending (55%); and second, more employees lead to more employee spending in the economy, which enhances the induced effect (increased household spending). Furthermore, UCSF's top rank in terms of total impact generated is also due to its high construction spending, $754.4 billion in 2018-19. By comparison, UCLA and UCLA Health spent $408.2 billion and $107.7 billion respectively on construction in the period.

[64] "UC Employee Headcount," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/uc-employee-headcount

Figure 3.2g: Total Economic Impacts[1] by UC Entity

Entity	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
General Campus				
UC Berkeley	37,314	$2,952.46	$4,587.23	$6,311.15
UC Davis	48,342	$2,451.70	$3,827.20	$5,862.41
UC Irvine	34,980	$1,990.80	$3,137.45	$4,639.05
UCLA	55,890	$3,324.45	$5,381.12	$8,448.65
UC Merced	13,302	$721.63	$1,110.25	$1,781.69
UC Riverside[3]	21,635	$1,133.41	$1,778.18	$2,681.30
UC San Diego	50,509	$2,689.60	$4,304.50	$6,680.24
UC Santa Barbara	33,558	$1,487.24	$2,282.33	$3,537.95
UC Santa Cruz	19,239	$999.54	$1,532.26	$2,318.73
UCH				
UC Davis Health	32,977	$3,085.12	$4,209.79	$6,261.22
UCI Health	19,250	$1,679.66	$2,316.42	$3,498.54
UCLA Health	52,160	$4,337.51	$6,304.67	$8,105.85
UC San Diego Health	36,078	$3,196.08	$4,375.85	$6,454.75
UCSF	57,371	$6,239.51	$8,616.93	$12,628.94
Other UC Entities				
LBNL	7,836	$572.96	$901.38	$1,298.70
Other[4]	2,717	$292.74	$429.57	$499.66
Hastings[5]	301	$25.52	$39.16	$53.66
UCOP[6]	5,660	$454.57	$697.81	$999.31
Total	**529,119**	**$37,634.51**	**$55,832.12**	**$82,061.86**

Source: IMPLAN; Analysis by Beacon Economics
Note: Totals may not be exact because of rounding.
[1] Impacts are direct, indirect, and induced.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.
[3] Includes UC Riverside Health impacts because most data were not disaggregated from the general campus.
[4] Includes impacts from employee compensation and retirement benefits spending for Associated Students UCLA and Lawrence Livermore National Laboratory.
[5] Employee compensation data for Hastings College of the Law were unavailable, accounting for its relatively low impact values.
[6] Includes other operations spending from Systemwide programs, UCOP, ANR, a limited number of specific state-funded research programs, and other administrative functions.

3.3 FISCAL IMPACT

In addition to economic impacts, UC generated significant fiscal impacts through substantial tax revenue that supported Federal, state, and local governments. In 2018-19, UC-related spending generated $11.7 billion in Federal, state, and local tax revenue. Federal taxes represented about 64% of tax revenue, with state and local taxes accounting for the rest.

Figure 3.3a: Tax Revenue Generated by Entity Type, Dollars in Millions

	UC General Campuses	UCH	Other UC Entities	Systemwide Total
Federal	$3,596.81	$3,637.21	$260.05	**$7,494.07**
State and Local	$2,302.52	$1,796.63	$133.09	**$4,232.24**
Total	**$5,899.33**	**$5,433.84**	**$393.15**	**$11,726.31**

Source: IMPLAN; analysis by Beacon Economics
Note: Totals may not be exact because of rounding.

Most revenue (71%) was generated through employee and retiree compensation in the form of personal income and social insurance taxes. About 10% of revenue was generated by sales tax (collected at the state and local level) through spending by any individual or institution associated with UC, including UC general campuses and UCH, vendors within UC's supply chain, UC students, UC employees and retirees, and all other households impacted through the induced effect. Additional revenue was generated through property taxes, corporate profits tax, licenses, and fees.

Figure 3.3b: Tax Revenue Generated by Source, Dollars in Millions

Source	Federal	State and Local	Total
Personal Income	$3,090.99	$1,174.88	**$4,265.87**
Social Insurance	$3,857.84	$186.68	**$4,044.52**
Sales	-	$1,201.92	**$1,201.92**
Property	-	$1,180.40	**$1,180.40**
Other[1]	$545.24	$488.36	**$1,033.60**
Total	**$7,494.07**	**$4,232.24**	**$11,726.31**

Source: IMPLAN; analysis by Beacon Economics
Note: Totals may not be exact because of rounding.
[1] Includes corporate profits tax, licenses, and fees

The $4.2 billion generated by UC-related spending in state and local tax revenue — mostly generated by sales, property, and personal income tax — helps support regional development. Every $1 in State support for UC generates $1.08 in tax revenue that returns to the State. Revenue collected by sales tax ($1.20 billion) is used to support the State General Fund (California's main operating account), state and local public safety services and criminal justice activities, local health and social service programs, local transportation development, and other local programs. Revenue generated by property taxes ($1.18 billion) is used by cities, counties, and special districts to support municipal services such as police, fire, and parks. Revenue generated by personal income tax ($1.17 billion) is a critical revenue source for the State General Fund[65], supporting K-12 education, higher education, health and human services, corrections and rehabilitations, and natural resources.[66] Comparing the total $4.3 billion generated in Federal and state personal income tax revenue with the $19.5 billion UC spent on employee compensation in FY 2018-19 (see Fig. 3.1b) suggests that every $4 cut from UC employee compensation would result in about a $1 loss in Federal and state government income tax revenue. Figure 3.3c shows tax revenue generated by region — the regions where the most state and local tax revenue was generated by UC-related spending were San Francisco Bay, Los Angeles, San Diego-Imperial, Sacramento-Tahoe, and Orange County.

[65] "California's Tax System," Legislative Analyst's Office, n.d., https://lao.ca.gov/reports/2018/3805/ca-tax-system-041218.pdf

[66] Radhika Melhotra and Patrick Murphy, "California's State Budget: The Governor's Proposal," Public Policy Institute of California, January 2019, https://www.ppic.org/publication/californias-state-budget/

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Figure 3.3c: Tax Revenue Generated by Region, Dollars in Millions

Region	Federal	State and Local	Total
Central Coast	$295.81	$216.07	**$511.88**
Inland Empire	$269.90	$189.23	**$459.13**
Inyo Mono	$0.17	$0.30	**$0.47**
Los Angeles	$1,569.83	$873.63	**$2,443.46**
Monterey Bay	$189.96	$131.42	**$321.38**
North Coast	$1.69	$3.03	**$4.72**
North SJV	$165.21	$111.32	**$276.54**
Orange County	$724.08	$413.36	**$1,137.44**
Sacramento-Tahoe	$1,061.86	$626.19	**$1,688.05**
San Diego-Imperial	$1,130.24	$633.11	**$1,763.34**
San Francisco Bay	$2,070.76	$1,020.00	**$3,090.75**
South SJV	$10.26	$9.36	**$19.62**
Superior California	$1.11	$1.42	**$2.53**
Upper Sacramento Valley	$3.20	$3.81	**$7.01**
Total	**$7,494.07**	**$4,232.24**	**$11,726.31**

Source: IMPLAN; analysis by Beacon Economics
Note: Totals may not be exact because of rounding.

4 SOCIAL IMPACT

BEACON ECONOMICS

4.1 EDUCATION, RESEARCH, AND INNOVATION

ACADEMIC AND PROFESSIONAL PROGRAMS

UC provides undergraduate, graduate professional, and graduate academic education through the doctoral level, offering more than 160 academic disciplines and about 850 degree programs. UC operates the largest health sciences instructional program in the nation, with nearly 15,000 students and trainees in 20 professional schools at seven campuses.[67]

The University attracts many of the world's sharpest students to its outstanding academic and professional programs. Seven UC campuses are members of the prestigious Association of American Universities (AAU), chosen for their academic and research excellence. UC's strong curriculum helps meet California's evolving workforce needs by supplying highly educated and skilled individuals. In 2019-20, a little over 285,000 FTE students were enrolled in the UC system.[68]

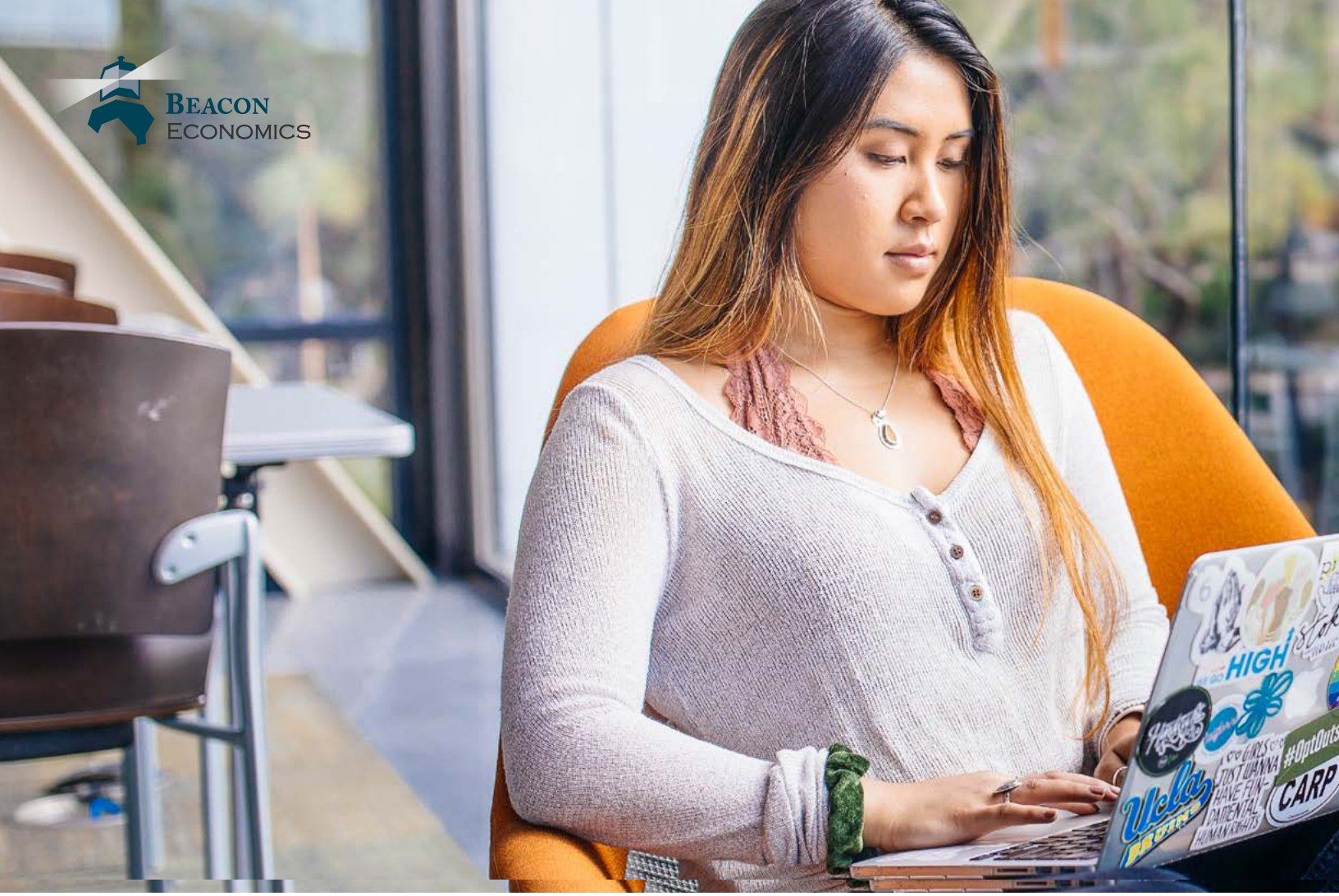
[67] UC Accountability Report 2020, p. 70. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

[68] "Fall Enrollment at a Glance," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/fall-enrollment-glance

SPOTLIGHT:

The Nexus of Research and Learning

Part of what sets UC's instruction apart is its exceptional, diverse faculty, which includes world-class researchers on the cutting edge of their disciplines. As a research institution, UC gives students opportunities to engage in research and contribute to scholarly works. In UC's Undergraduate Experience Survey, 84% of students said attending a university with world-class researchers is important. The survey also revealed that 73% of senior undergraduates had completed or were in the process of completing a research project or paper for a class. Furthermore, only 27% of students said their ability to engage in research was good when they arrived on campus, but by the time they took the survey, that share had risen to 65%.



UC DOCTORAL PROGRAMS

UC offers nearly 500 doctoral programs in all major fields of study including education, life sciences, business, architecture, arts, and humanities.[69] UC awarded 62% of all doctoral degrees in California.[70] UC's doctoral programs rank among the best in the world as recognized by many major publications, including U.S. News & World Report. These programs enroll a diverse student body that goes on to affect regions throughout California and across the globe. In 2018-19, of UC's 26,836 doctoral students, 31% were international.[71] Based on results of the Survey of Earned Doctorates (an annual survey of all individuals receiving a research doctorate from an accredited U.S. university conducted by several Federal agencies[72]), more than half (53%) of UC international doctoral degree recipients intend to stay in California after graduation.[73]

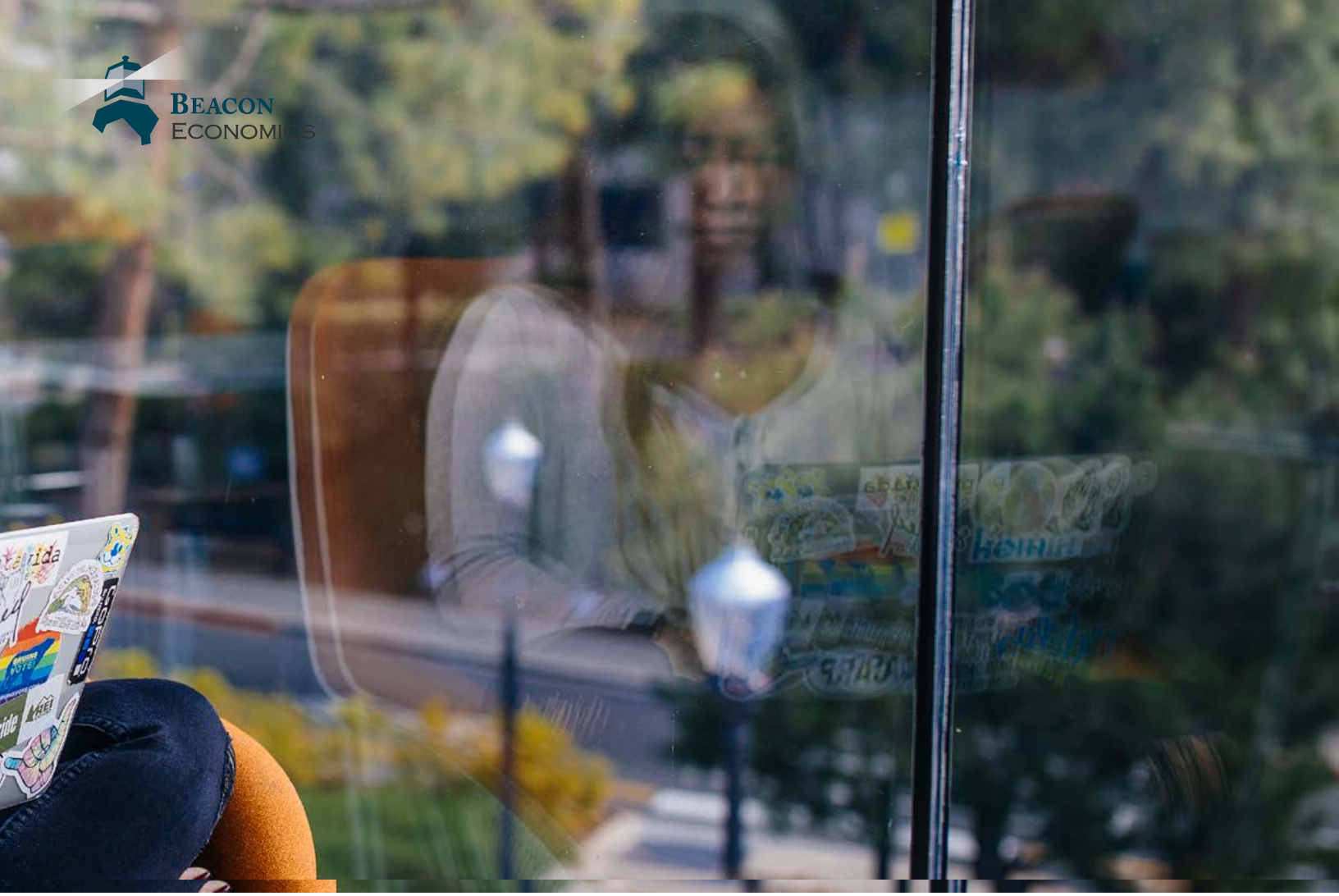
[69] "UC Doctoral Experience Survey," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/doctoral-experience-survey

[70] UC Accountability Report 2020, p. 70. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

[71] "Doctoral Program Data," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/doctoral-program

[72] "Survey of Earned Doctorates," National Science Foundation, n.d., https://www.nsf.gov/statistics/srvydoctorates/

[73] UC Accountability Report 2020, p. 78. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/doScuments/pdfs/acct-2020.pdf



UC EXTENSION AND SUMMER SESSIONS

With over 430,000 registrations annually, UC Extension is the nation's largest continuing education program, helping students reach professional goals. Extension students are typically working professionals who hold bachelor's degrees but continue their education to help advance their careers. UC's campuses offer nearly 27,000 extension courses, programs, seminars, conferences, and field studies in California and several countries. UC offers professional development programs in the education, legal, and medical fields and provides certificates in many areas, including computing and information technology, environmental management, graphics and digital arts, and health and behavioral sciences.[74]

In addition to instruction during the regular academic year, UC offers summer sessions for UC and non-UC students on all ten campuses. In 2018-19, of the 94,726 students enrolled in summer sessions, roughly 10% were enrolled at California State University, California Community Colleges, or other institutions.[75]

[74] 2020-21 Operating Budget Report, p. 59. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf

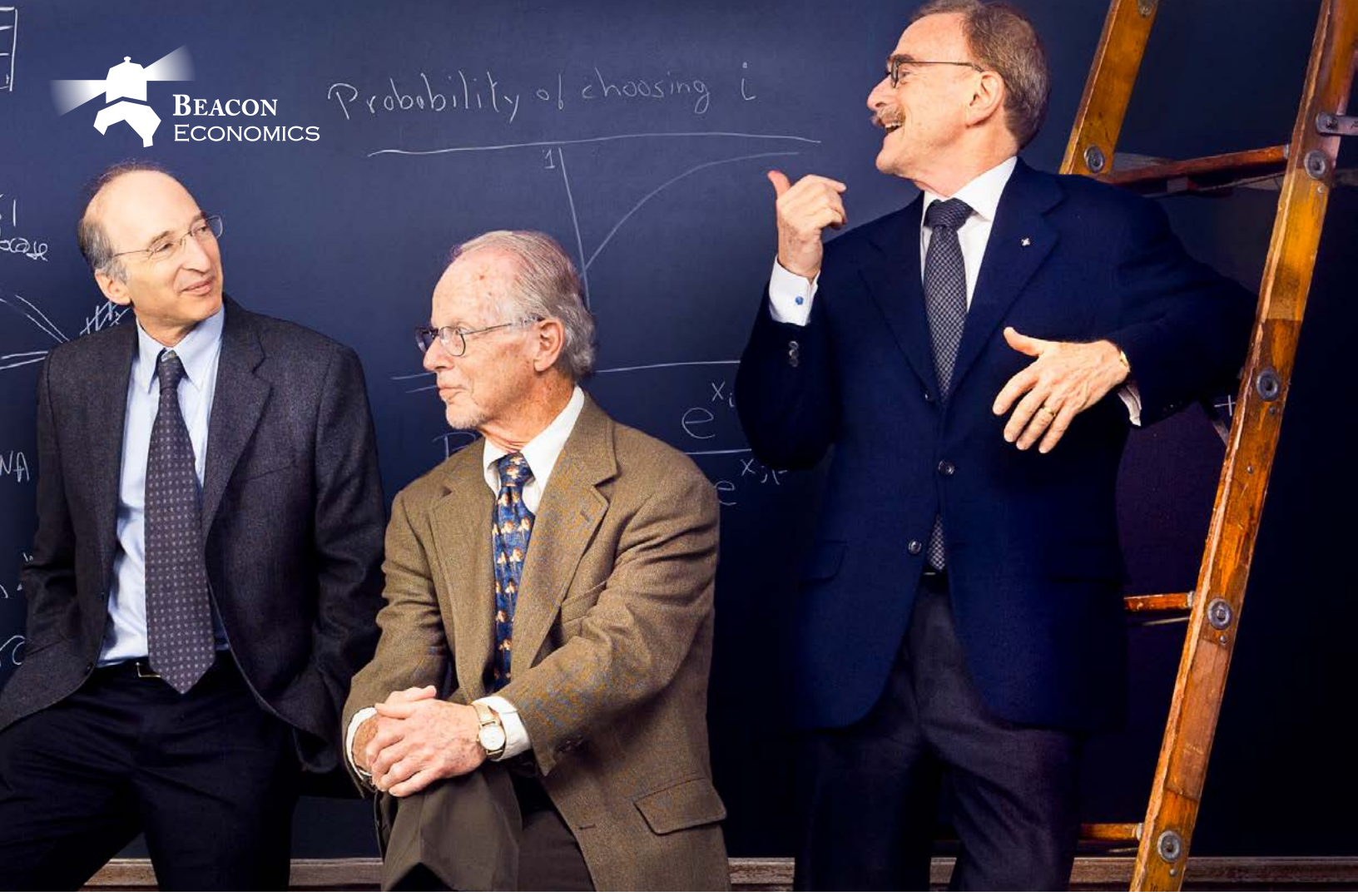
[75] 2020-21 Operating Budget Report, p. 60. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf

RESEARCH AND INNOVATION

The UC system is internationally renowned as a leading research institution, with over 800 research centers, institutes, laboratories, and programs spread across its ten campuses, six academic health centers, three national laboratories, and other entities. Established as California's primary academic research institution in the 1960s by the Master Plan of Higher Education, UC has honored its commitment to develop world-class research universities that serve as the state's primary source of groundbreaking innovations and discoveries.

UC's excellence in research is evident through numerous achievements and honored personnel, including Nobel laureates, Pulitzer Prize winners, and inductees of the National Academies of Science. As of 2020, UC has 68 Nobel laureates, winning 69 prizes: 23 in chemistry, 20 in physics, 14 in physiology or medicine, ten in economics, one in literature, and one in peace. UC Berkeley has the most laureates at 25, followed by UC San Diego (16), Santa Barbara (7), UCLA (7), UCSF (5), and UC Irvine (3). UC Santa Cruz, UC Riverside, and Lawrence Livermore National Laboratory each have one Nobel laureate.[76]

[76] UC Accountability Report 2020, p. 194. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf



UC researchers have tackled some of the world's most urgent problems. UC research spans disciplines including hydrology, agriculture, and food security; carbon neutrality and energy sustainability; health care; manufacturing and industrial technology; transportation and urban infrastructure; and artificial intelligence. Almost every industry in which California is a world leader – including agriculture, biotechnology, computers, digital media, entertainment, environmental technologies, semiconductors, and telecommunications – has benefited from UC research.

In 2018-19, UC received over $5.8 billion in research awards. Of this amount, $3.4 billion (60%) came from Federal agencies; UC is awarded more National Institutes of Health and National Science Foundation funding than any institution in the United States. Other 2018-19 Federal funding came from the Department of Defense, NASA, and the Department of Energy.[77]

[77] 2020-21 Operating Budget Report, p. 70. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf

UC AGRICULTURE AND NATURAL RESOURCES

Serving California for over 100 years, ANR is a partnership between Federal, state, and local governments that delivers University resources to Californians in every corner of the state. ANR's statewide partnership of researchers and educators work to protect and enhance California's agriculture, natural resources, and health issues. UC's network of local Cooperative Extension sites and Research and Extension Centers connects regions across California with innovations in agriculture and natural resources, and works with county and community partners to increase science literacy and youth development. In 2018-19, ANR had several significant achievements, including:

- 887,000 direct contacts and/or educational exchanges with adults and youth;
- 24 ideas that led to patents;
- 965 policy engagement activities with political decision makers;
- 2,100 audience-driven educational materials published;
- 41,000 community-based short courses, classes, workshops, demonstrations, and field days across the state.

ANR has become integral to the scientific and economic community of California, providing research and education on climate change, drought, invasive species, and working to develop solutions for communities across the state to better manage them.[78]

[78] 2019 UC UNR Annual Report, p. 2. UC Agriculture and Natural Resources, 2019. https://ucanr.edu/files/326596.pdf

UC STARTUPS

At the time of this writing, UC has 5,079 active U.S. patents, 513 of which were issued in 2018-19. UC's research impact has global scale; UC has 5,988 active foreign patents – increasing by roughly two-thirds over the last decade – 935 of which were issued in 2018-19. UC researchers have come up with more than 12,658 active inventions[79], with 1,825 disclosed in 2018-19.[80] Notable UC patents include the nicotine patch, the hepatitis-B vaccine, drugs to treat prostate cancer, and market-leading varieties of strawberries and citrus.

[79] LBNL not included

[80] UC Technology Commercialization Reports and NSF Higher Education Research and Development Surveys

SPOTLIGHT:

UC's Venture Capital Contributions

Several UC alumni have founded well-known corporations, attracting billions of dollars in venture capital. In 2020, Pitchbook ranked five UC campuses in its Top 50 Undergraduate Programs Producing Startup Founders: UC Berkeley (#2), UCLA (#14), UC San Diego (#27), UC Santa Barbara (#40), and UC Davis (#43). In total, entrepreneurs from these campuses raised roughly $74.4 billion in venture capital from 2006 to 2020. UC Berkeley alumni accounted for 48.8% of the total, and UCLA graduates accounted for 20.1%.[81]

UC is also notable for producing female-founded startups. Under Pitchbook's Top 25 Undergraduate Programs Producing Female Founded/Co-Founded Startups, UC Berkeley placed second and UCLA placed 14th. In the ranking of MBA programs, UC Berkeley placed 9th and UCLA 12th.

[81] "Pitchbook Universities: 2020." Pitchbook, Sept. 22, 2020. https://pitchbook.com/news/articles/pitchbook-universities-2020?utm_medium=nl-na-premium&utm_source=reports&utm_campaign=PitchBook-Universities-2020&sourceType=NEWSLETTER

UC is a world leader in innovation, averaging five inventions a day. Many of these discoveries have led to startups, companies created to commercialize inventions. Startups not only contribute significantly through the innovations they represent in their respective fields, but also have significant economic value. In 2018-19, royalty and fee income from UC startups totaled $103.8 million[82], which further cascades through the economy by consumer spending. Since 1980, 1,218 startups have stemmed from UC inventions[83]. Among undergraduate schools globally, UC Berkeley was second only to Stanford in producing venture capital-funded startups as of June 2020.[84]

From 2016 to 2018, the global startup economy generated $2.8 trillion.[85] UC startups are integral to maintaining California as an economic powerhouse, by generating state tax revenue, supporting new jobs, driving investment, and paving the way for future innovation. In 2017-18, 93 startups were founded by UC researchers. Inventions from research at UC San Diego accounted for the most (26), and 20 were formed by research from UCLA, 15 from UC Berkeley, 12 from UC Davis, and eight from UCSF in the period.[86]

[82] "UC Inventions at a Glance," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/uc-inventions-glance

[83] Technology Commercialization Report, FY 2018. https://www.ucop.edu/knowledge-transfer-office/_files/ott/genresources/documents/fy2018_techcomm_anlrpt.pdf

[84] Tai, Jack. "Which Colleges Produce the Most Startups?," Forbes, June 9, 2020. https://www.forbes.com/sites/theyec/2020/06/09/which-colleges-produce-the-most-startups/#5a0807e21ad8

[85] "Global Startup Ecosystem Report 2019," Startup Genome, May 9, 2019. https://startupgenome.com/reports/global-startup-ecosystem-report-2019

[86] Technology Commercialization Report, FY 2018, p. 3. https://www.ucop.edu/knowledge-transfer-office/_files/ott/genresources/documents/fy2018_techcomm_anlrpt.pdf

RETURNS TO EDUCATION

The role education plays in the economic outcomes of individuals is extensively documented.[87] College graduates are more likely to obtain better jobs, earn higher salaries, and be less prone to unemployment than those without degrees.

The economic outcomes of UC graduates support these findings. UC alumni are consistently successful across an array of industries, including high-tech occupations such as engineering and science; professional and managerial jobs such as business management, law, public health and policy, and social work; and creative industries including entertainment, performing arts, and digital media.

Most UC alumni (about 74%) stay in California.[88] In 2018, more than 429,700 undergraduate alumni and 125,900 graduate alumni lived and worked in California, earning over $37.8 billion and $19.1 billion respectively.[89] As shown in Figure 4.1a, average 2018 earnings of UC undergraduate and graduate alumni were $88,066 and $151,656 respectively, which are both substantially higher than the California average earnings of those without four-year college degrees. Average undergraduate and graduate UC alumni earnings also surpass the California average earnings for individuals with bachelor's or graduate degrees.

[87] Whitemore Schanzenbach, Boddy, Mumford, and Nantz. "Fourteen Economic Facts on Education and Economic Opportunity." The Hamilton Project, March 2016. https://www.brookings.edu/wp-content/uploads/2016/07/education_facts.pdf

[88] "UC Alumni at Work," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/uc-alumni-work

[89] UC Office of the President

Figure 4.1a lists the average earnings of individuals working in California and UC degree holders working in California by educational attainment, and the increase in earnings attributable to holding a UC degree (UC Degree Increased Average Annual Earnings). UC undergraduates earn roughly $9,300 more in average annual earnings compared to the average undergraduate degree holder working in California. Furthermore, UC undergraduate alumni make roughly $45,000 more in average annual earnings than the average individual working in California with some college or an associate degree. UC graduate alumni earn substantially more than the average graduate or professional degree holder working in California, with UC graduates earning $35,400 more on average.

UC alumni work in a variety of industries, as shown in Figure 4.1b. Within ten years of graduating, for example, 13% of undergraduate alumni work in Health Care, 10% in Retail and Wholesale Trade, 9% in Manufacturing, and 9% in K-12 Education.[90]

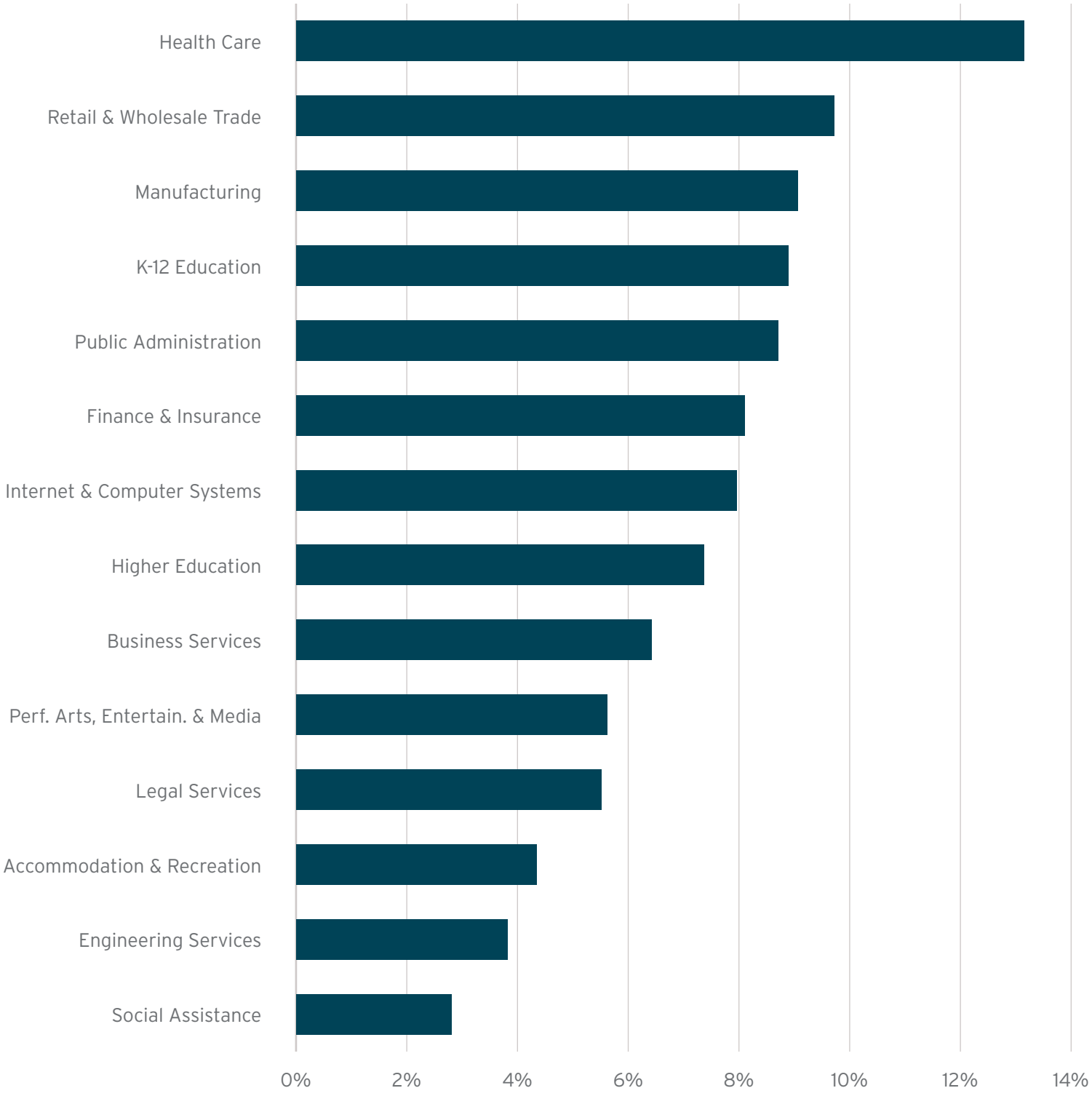
Figure 4.1a: Average Earnings and UC Degree Increased Earnings, 2018

Degree Level	CA Average Annual Earnings[1]	UC Average Annual Earnings[2]	UC Degree Increased Average Annual Earnings (in Billions)	
			Undergraduate	Graduate
High School Degree	$35,221	n/a	$52,845	$116,435
Some College or Associate Degree	$42,983	n/a	$45,083	$108,673
Bachelor's Degree	$78,733	$88,066	$9,333	$72,923
Graduate or Professional Degree	$116,227	$151,656	n/a	$35,429

Sources: UCOP; 1-Year American Community Survey Public Use Microdata Sample; analysis by Beacon Economics
[1] Includes all individuals working in California who hold a specified degree from any institution, including UC for Bachelor's and Graduate/Professional degree levels. Includes individuals working in California who received degrees from out-of-state institutions.
[2] Includes UC degree holders who are working in California and graduated between 1999 and 2018. Data provided by UCOP.

[90] "UC Undergraduate Alumni Outcomes," University of California, 2018, https://www.universityofcalifornia.edu/infocenter/uc-undergraduate-alumni-outcomes

Figure 4.1b: Industry Employment of UC Undergraduate Alumni, 10 Years Post-Grad



Sources: UC Corporate Student System, California Employment Development Department, Beacon Economics

FIRST-GENERATION AND LOW-INCOME STUDENTS

UC gives low-income and first-generation college students the tools to achieve intergenerational economic and social mobility. The University is devoted to educating students from underserved communities; roughly 40% of UC undergraduates are first-generation, more than the average at other selective public institutions (27%), selective private institutions (18%), and the national average of all four-year institutions (36%).[91]

On average, annual earnings of first-generation students who obtain a bachelor's degree from UC are at least $52,800 higher than if they had not attended college.[92] Within six years of earning a degree, most first-generation UC graduates earn a higher median income than their parents, and graduates from low-income families earn more than their parents within five years.[93]

UC first-generation students have a substantially higher graduation rate than first-generation students nationwide. For example, 81% of UC first-generation students graduate within six years of admission, as opposed to 60% for all students and fewer than 50% nationwide.[94]

First-generation UC alumni take career paths in a variety of industries, including Health Care (13%), K-12 Education (10%), and Public Administration (9%). First-generation alumni also work in Retail and Wholesale Trade (9%), Finance and Insurance (8%), and Manufacturing (7%).[95]

[91] "First-Generation Student Success at the University of California." UC, August 2017. https://www.universityofcalifornia.edu/sites/default/files/First-Generation%20Student%20Success%20at%20UC%208-2017.pdf

[92] Based on the average earnings of UC graduates with a bachelor's degree and the California average earnings of individuals with a high school degree, shown in Figure 4a.1.

[93] Carolyn McMillan, "UC's Ambitious Plan to Help More Students Earn a Degree," University of California, July 24, 2019, https://www.universityofcalifornia.edu/news/uc-s-ambitious-plan-help-more-students-earn-degree

[94] "First-Generation Student Success at the University of California." UC, August 2017. https://www.universityofcalifornia.edu/sites/default/files/First-Generation%20Student%20Success%20at%20UC%208-2017.pdf

[95] Ibid.

4.2 COMMUNITY BENEFITS

DIVERSITY AND INCLUSION

UC seeks to enroll students and employ faculty and staff that reflect the rich diversity of the state. About half of UC's academic workforce and two-thirds of UC's non-academic staff are non-white.[96] About 26% of UC undergraduate and graduate students are from underrepresented groups (29% of undergraduate students), and about 40% are first-generation college students.[97] An estimated 4,000 undocumented students are enrolled at UC.[98]

DOMESTIC ENROLLMENT

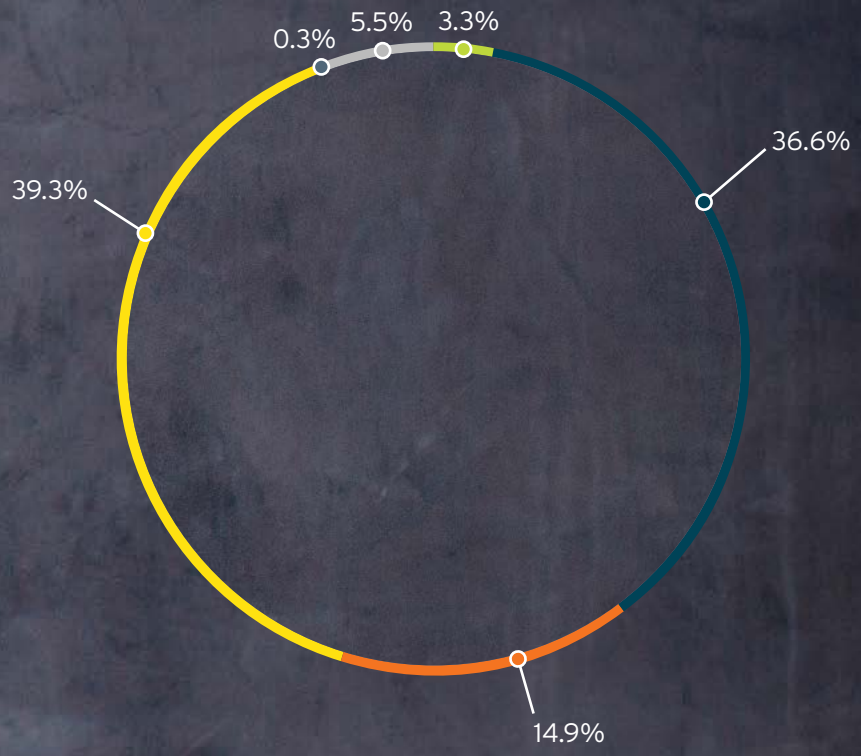
In fall 2019, total (undergraduate and graduate) domestic enrollment reached 216,000. Domestically, 36.4% identified as Asian American, 28.2% identified as white, 26.1% identified as Hispanic/Latino(a), 4.9% as African American, 3.8% were Unknown/Other, and 0.6% identified as Native American.[99]

Over the past few years, UC enrollment has grown considerably. Enrollment in fall 2019 was 12.1% higher than in fall 2009's and 40.5% higher than in fall 1999. Underrepresented groups' shares of total enrollment have increased over the past 20 years, though there remains room for progress. The share of Latino(a)/Chicano(a) students in fall 1999 was roughly 13.7%, which increased to 26.1% in fall 2019. The share of African American students was 2.8% in fall 1999 and 4.9% in fall 2019. The share of American Indian students at UC declined from 0.7% in 1999 to 0.5% in fall 2019.[100]

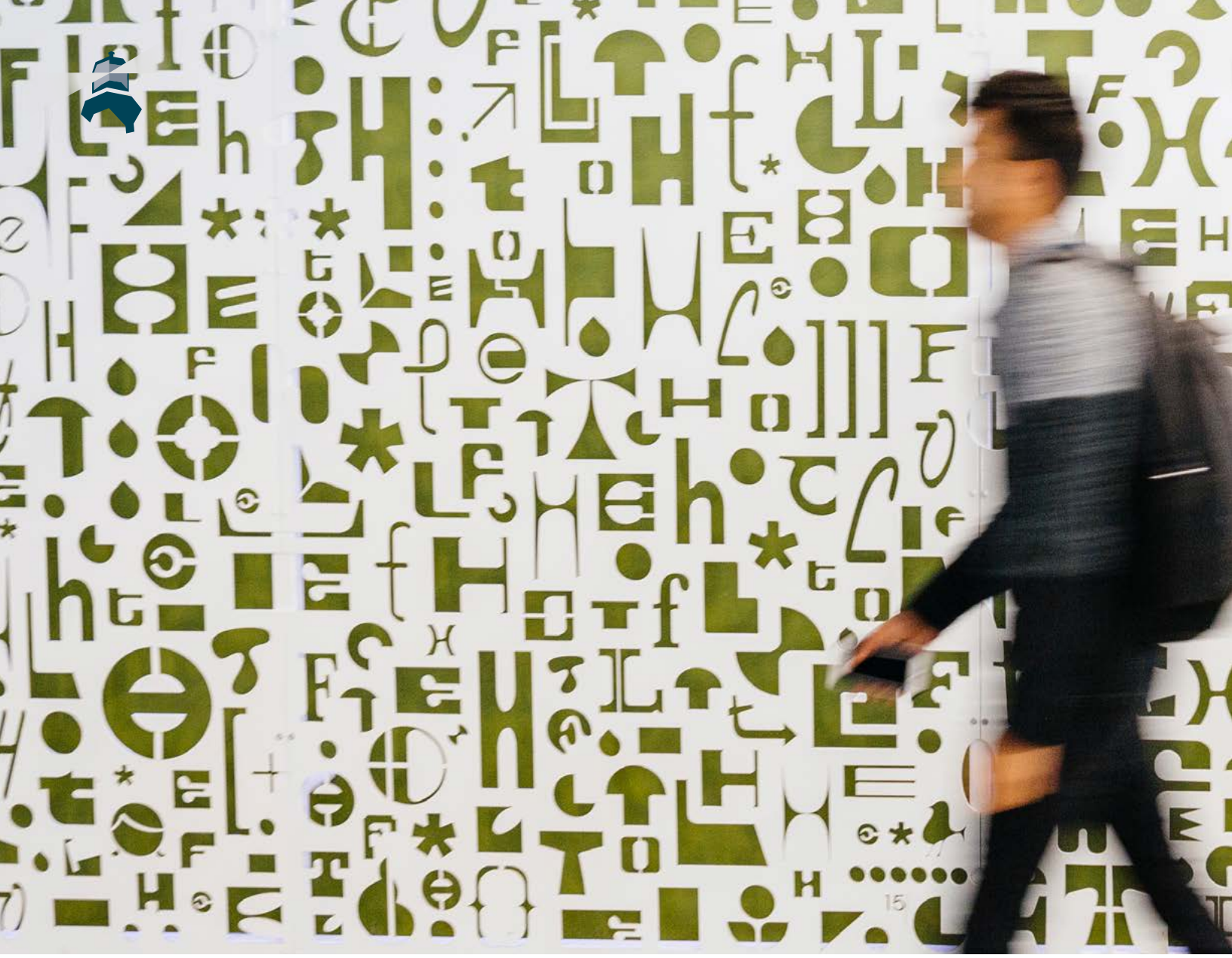
[96] "UC Workforce Diversity," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/uc-workforce-diversity
[97] "Fall Enrollment at a Glance," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/fall-enrollment-glance
[98] Stavely, Zaidee. "University of California will support undocumented students, even if DACA ends." EdSource. Nov. 12, 2019. https://edsource.org/2019/university-of-california-will-support-undocumented-students-even-if-daca-ends/619844
[99] "Fall Enrollment at a Glance," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/fall-enrollment-glance
[100] Ibid.

Figure 4.2a: UC Student Body Racial/Ethnic Composition

Figure 4.2b: California Population Racial/Ethnic Composition



Sources: UCOP; 2018 1-Year American Community Survey; analysis by Beacon Economics



INTERNATIONAL STUDENTS

As a leading platform for higher education, the UC system attracts students from throughout the world. International students constituted 16.3% of total enrollment (undergraduate and graduate) in fall 2019. Most come from China (26,912), India (4,039), and South Korea (2,098); these countries account for roughly 70% of international students. In total, 161 countries were represented in the UC student pool in fall 2019.[101] Nonresident students are vital not only in expanding the cultural vibrancy of UC campuses but also in assisting Californian students in need. Part of the revenue from NRST is used in the University Student Aid Program, which helps provide financial support to roughly 100,000 California students in need of funds.[102]

[101] Ibid.

[102] "Reduction of Nonresident Freshman Enrollment at the University of California and Options for Replacing Revenues from Nonresident Students." UCOP, March 2019. https://www.ucop.edu/operating-budget/_files/legreports/18-19/reductionofnonresidentffreshmanenrollmentatuclegrpt-3-27-19.pdf

The number of foreign students enrolled at UC has increased substantially over the last decade. In 2009, roughly 16,153 students from 142 countries were enrolled. Ten years later, the number of international students had increased to roughly 45,000 from 161 countries. The increase in enrollment from abroad testifies to UC's strong educational reputation and its commitment to welcoming students from across backgrounds and nationalities.

FACULTY

UC seeks to achieve a diverse workforce, and several efforts have been made over the last decade to achieve this. Most recently, using State funds first appropriated in 2016-17 to support best practices in equal employment opportunity and transform the faculty recruitment process, UC established the Advancing Faculty Diversity Program. Since established, this program has enabled UC to increase the diversity of its ladder-rank faculty. Starting in 2018-19, UCOP supplemented allocations from the State to fund projects aimed at improving academic climate and faculty retention, committing over $400,000 that funded six projects in the first year, and increasing that to $1 million in 2019-20. To date, sixteen pilot projects have been funded by the State, and since 2018-19, fifteen awards have been funded by UCOP. Successful adjustments to the recruitment process that have increased faculty diversity include the use of contributions to diversity statements early in the evaluation process; targeting potential faculty earlier in their careers through support for postdoctoral work; outreach by faculty to actively recruit candidates; revised evaluation practices, including the use of rubrics to guide decision-making; strong leadership and sustained and strategic involvement from unit leaders; and introducing new voices, including students, in the recruitment and evaluation process.[103]

UC's academic workforce provides high-quality education to its students and is a global leader in innovation, discovery, and research. Ladder-rank faculty (faculty that can advance to tenure or equivalent status) are central players in advancing UC's mission of teaching, research, and public service. UC's academic job workforce has been increasing in racial/ethnic diversity; white employees represented 71% of the workforce in 2011, and 62% in 2020.[104] Diversity in ladder-rank faculty, however, has changed the slowest, driven by long tenures and a competitive market.[105]

Non-academic staff members, who organize and facilitate all University activities, represent over 70% of UC's workforce. Non-academic employees provide health services, student services, instruction and research support, compliance, and general administration. Additionally, about 65% of UC non-academic employees are women.[106] The diversity breakdown of UC's academic and non-academic workforce is shown in Figure 4.2c.

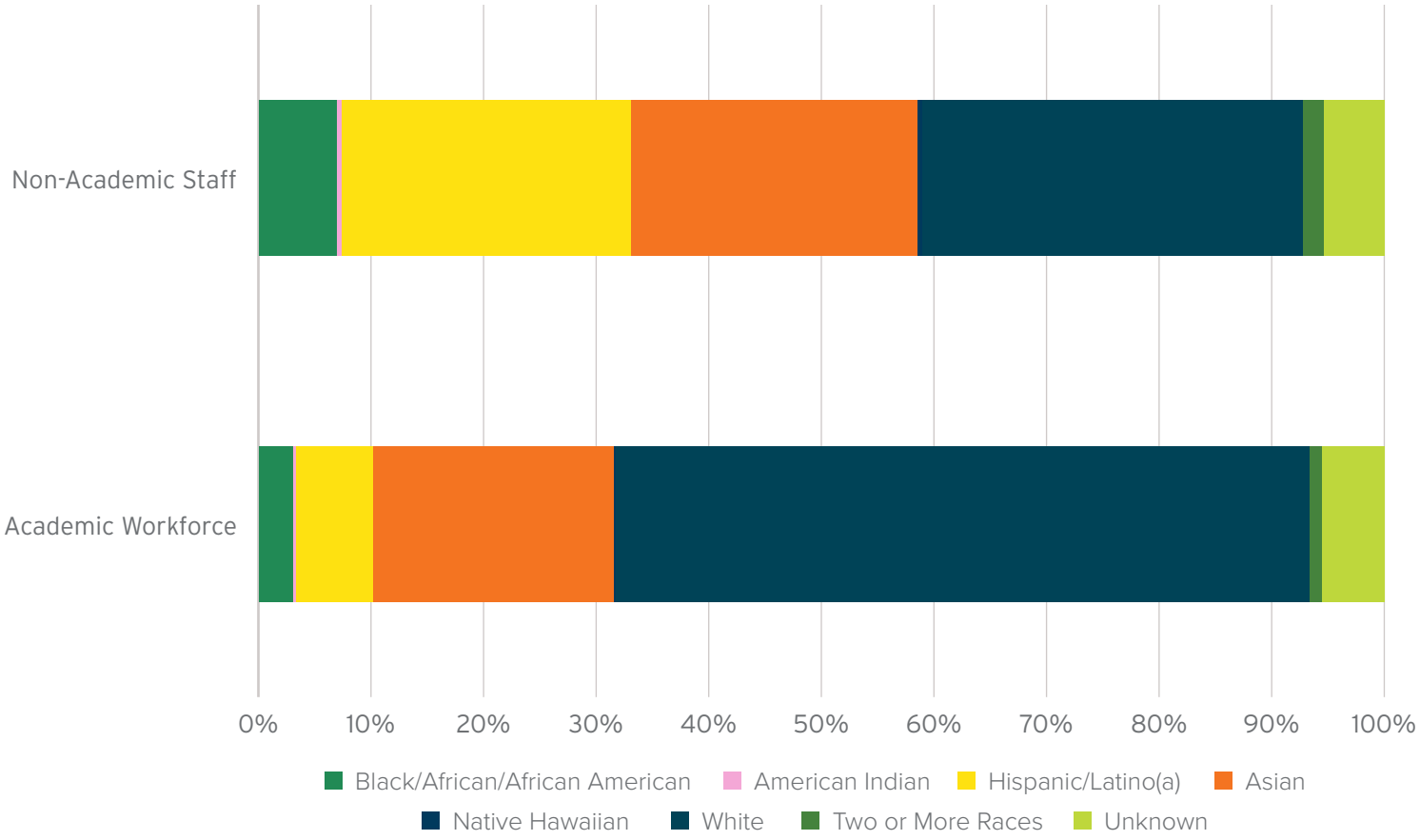
[103] UC Accountability Report 2020, p. 84. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

[104] "UC Workforce Diversity," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/uc-workforce-diversity

[105] UC Accountability Report 2020, p. 90. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

[106] "UC Workforce Diversity," University of California, 2019, https://www.universityofcalifornia.edu/infocenter/uc-workforce-diversity

Figure 4.2c: UC Workforce Diversity, April 2020



Sources: UCOP, Beacon Economics

AFFORDABILITY

The University of California provides a robust financial aid program, enabling students from all socioeconomic backgrounds to attend. The programs vary, with funding coming from Federal, State, and private donors. Prominent grant programs include:

Pell Grant Program (Federal)

Offered usually to undergraduate students, with amounts based on cost of attendance and expected family contribution (amount of untaxed and taxed income, assets, and benefits a student's family has).

Cal Grant Program (State)

Program gives aid that does not need to be repaid. Qualification is based on various factors including family income, cost of attendance, and whether the student has a previous degree.

Blue and Gold Opportunity Plan (UC)

Ensures that qualifiers do not have to pay for tuition and fees out of pocket if they are a resident of California coming from a family whose total income is less than $80,000. Students can qualify for even further aid aside from tuition and fees if deemed eligible.

Middle Class Scholarship Program (State)

Offers UC students from middle-class backgrounds financial aid based on total family income, with coverage of 10% to 40% of systemwide tuition and fees.

In the 2018-19 academic year, roughly $4.7 billion was awarded in financial aid across all UC campuses, including $1.7 billion from the Federal government in the form of Pell Grants ($406 million), student loans ($1.1 billion), and scholarships and work-study programs ($122 million); $984 million from the State, mostly in the form of Cal Grants ($957 million); and $756 million from tuition as return to aid.[107] In 2018-19, 67.1% of undergraduate and graduate students received aid, with approximately $15,997 in financial support awarded per FTE student.[108] UC enrolls a higher percentage of Pell Grant recipients than its public and private peers; in 2017-18, 36% of UC undergraduate students received a Pell Grant, compared with 21% at non-UC AAU public universities and 16% at AAU private universities.[109]

As shown in Figure 4.2d, most support was in the form of grants, at $2.2 billion in 2018-19, followed by loans, at $1.2 billion. A total of 122,262 FTE students received grants in 2018-19, and over 86,700 took on loans. More than 79,000 FTE students received fellowships or scholarships, which totaled almost $900 million in 2018-19.[110]

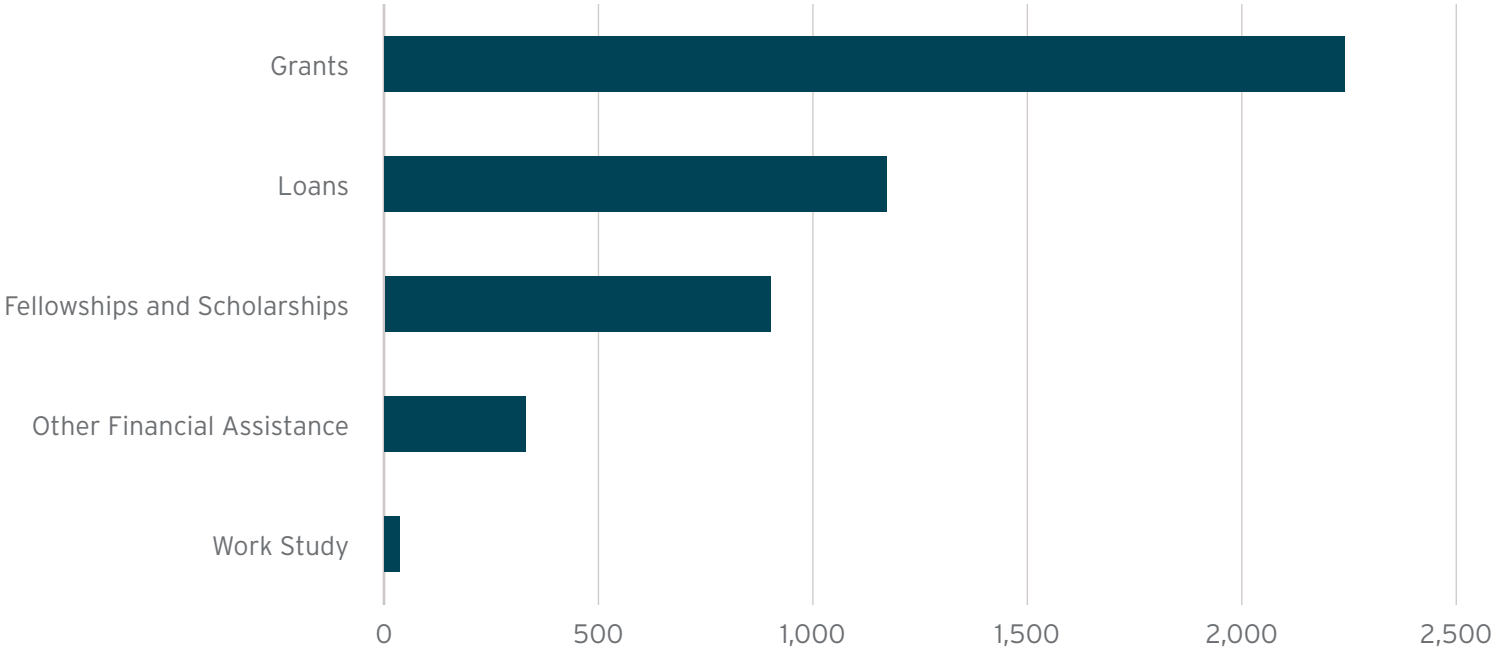
[107] "Student financial support data tables". UC Infocenter. https://www.universityofcalifornia.edu/infocenter/financial-support

[108] Ibid.

[109] UC Accountability Report 2020, p. 38. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

[110] "Student financial support data tables". UC Infocenter. https://www.universityofcalifornia.edu/infocenter/financial-support

Figure 4.2d: Total UC Systemwide Financial Support by Program, 2018-19, Dollars in Millions



Source: UCOP; analysis by Beacon Economics

UC students graduate with less college debt than their peers at other institutions. The average inflation-adjusted debt at graduation of student borrowers has remained generally flat at $20,000 over the past 17 years, while the percentage of graduates with no debt has increased. Roughly 46% of UC graduates who entered as California resident freshmen graduated without student debt.[111] For those who borrow, the average debt of $20,000 has a monthly repayment of about $213 for ten years at 5% interest. This level of debt is considered manageable, because a typical graduate who takes out loans earns about $3,300 per month within two years of graduating. Comparison data from 2017-18 show cumulative debt for UC undergraduates was about $7,000 less than for public four-year institutions, and $12,000 less than private nonprofit four-year institutions.[112]

The many financial aid options relieve a significant portion of students' obligations. In fact, roughly 57% of UC undergraduates from California do not pay tuition as a result of financial aid. In addition, 72% of California UC undergraduates receive some form of grant or scholarship that need not be repaid.[113] [114]

[111] UC Accountability Report 2020, p. 42. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

[112] "Ibid.

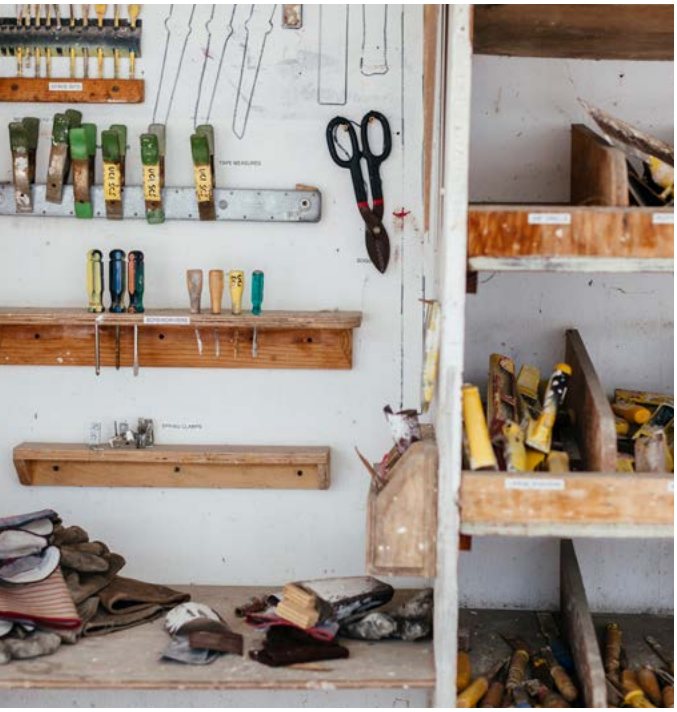
[113] "The Facts: Federal Financial Aid for UC Students," University of California, 2019, https://www.ucop.edu/Federal-governmental-relations//_files/Advocacy/Federal-Research/Fact_Sheet_Federal_Financial_Aid.pdf

[114] University of California, "Ready for Your next Challenge? The UC Application Is Now Open. ," University of California, n.d., https://admission.universityofcalifornia.edu/

PUBLIC SERVICE

UC administers over 20,000 programs throughout the state. UC's public service activities and programs improve the quality of life in communities throughout California. Programs and services address a variety of topics, including agriculture, the environment, and natural resources; health services and nutrition; K-12 and community college student services; teacher preparation and professional development; community and social services; cultural resources and the arts; business and economic development; and public policy.

UC's outreach programs impact many youth and individuals across the state. For example, UC partners with K-12 schools and community colleges statewide to support student and teacher development, and in 2017-18, the latest recorded year of data, these programs provided support for about 205,000 K-12 and community college students.[115] Notable outreach programs include:



Student Academic Preparation and Education Partnerships (SAPEP) programs raise overall student achievement levels and close opportunity gaps for targeted groups across California from pre-K to postgraduate study. They particularly serve under-resourced populations, reaching students at more than 1,400 K-12 public schools and all 114 community colleges in California in 2017-18. SAPEP has closed opportunity gaps by raising college eligibility rates, increasing transfers from community colleges to four-year institutions, and preparing undergraduates for postsecondary education. SAPEP programs include the Early Academic Outreach Program; the Mathematics, Engineering, Science Achievement program; the Puente Project; California Gaining Early Awareness and Readiness for Undergraduate Programs; and Community College Transfer programs.[116]

[115] 2020-21 Operating Budget Report, p. 33. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf

[116] 2020-21 Operating Budget Report, p. 85. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf

The California Subject Matter Project supports teachers and other educators in providing high-quality education. The network comprises nine subject-based projects that provide professional training through workshops, leadership institutes, and in-service programs. In 2017-18, it provided more than 1,900 professional learning programs to more than 27,000 educators from over 4,000 schools.[117]

The California State Summer School for Mathematics and Science is an intensive four-week program for high school students who have demonstrated excellence in science, technology, engineering, and mathematics (STEM) fields. Students dive into advanced STEM topics with celebrated researchers and scientists in state-of-the-art facilities. In summer 2019, 876 students out of 4,833 applicants were selected to participate.[118]

ANR's UC Master Gardener Program provides the public with research-based information about food gardening and sustainable landscaping, including how to reduce green waste, manage pests, conserve water, and produce pollinator-friendly gardens. Over 5,900 UC Master Gardeners volunteer in 50 California counties. In 2019, volunteers worked close to 500,000 public service hours with an estimated value of $14.8 million. Participants reported adopting and improving gardening practices that protect natural resources and promote healthful lifestyles on over 1.3 million square feet of home, school, and community gardens.[119]

ANR manages two statewide nutrition education programs: the California Expanded Food and Nutrition Program (EFNEP) in 24 counties, and the CalFresh Health Living, University of California (CFHL,UC) Program in 31 counties. EFNEP teaches limited-resource families and young children about nutrition and ways to improve healthy lifestyle choices. In 2019, EFNEP reached almost 41,000 adults and youth. CFHL,UC collaborates with the United States Department of Agriculture, California Department of Social Services, and UC Cooperative Extension to serve individuals eligible for the Federal Supplemental Nutrition Assistance Program. In 2019, face-to-face education was provided to over 97,000 participants. CFHL,UC policy, systems, and environmental interventions were adopted by 397 partner sites, indirectly reaching over 176,000 people.[120]

The University of California Health is a part of two statewide COVID Task Forces: COVID-19 Testing (UC Davis and UC San Diego) and Reopening Schools.

University of California Health contributed $1.4 billion in community benefits in 2018-19, including $920 million in uncompensated costs for treating Medi-Cal patients. More on UCH's contributions are described in the following section, 4.3 University of California Health.

[117] 2020-21 Operating Budget Report, p. 89. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf

[118] 2020-21 Operating Budget Report, p. 90. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf

[119] UC Accountability Report 2020, p. 148. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

[120] Ibid.

4.3 UNIVERSITY OF CALIFORNIA HEALTH

The University of California Health (UCH) is the largest academic health system in the U.S., the fourth-largest health care delivery system in California, and operates the largest health sciences instructional program in the nation, annually enrolling nearly 15,000 students and trainees, more than 70% of whom remain in California after graduation or residency.[121] UCH is an invaluable asset to the state.

UCH comprises six academic health centers, five with UC-owned-or-operated hospitals (two of which are in the top 10 in the U.S., according to U.S. News & World Report), 12 hospitals (with over 3,900 licensed beds), and 20 health professional schools in dentistry, medicine, nursing, pharmacy, public health, veterinary medicine, and optometry. UCH hospitals specialize in complex care, providing half of all transplants and one-fourth of extensive burn care in California. UCH operates or staffs five Level 1 trauma centers, which often deliver the only trauma care in their regions. UCH hospitals had roughly 162,300 inpatient admissions and provided 5.2 million hospital outpatient clinic visits in FY 2019-20.[122] Accounting for outpatient services of the health professional schools and specialty clinics, UCH provided more than 8.1 million outpatient visits.[123] These included 349,000 emergency room visits.[124]

In 2018-19, UCH hospitals contributed $1.4 billion in net community benefits throughout California, as shown in Figure 4.3a. Community benefits are programs or activities that provide treatment or promote health for identified community needs. Community benefits include free health services, unreimbursed costs for care to Medi-Cal recipients, and health professions education.

[121] UC Accountability Report 2020, p. 2. UCOP Institutional Research and Academic Planning Unit. 2020. https://accountability.universityofcalifornia.edu/2020/documents/pdfs/acct-2020.pdf

[122] UC Medical Centers Annual Financial Report, 2019-20, p. 29. University of California. https://finreports.universityofcalifornia.edu/index.php?file=/med_ctr/19-20/medical-center-reports-2020.pdf

[123] 2021-22 Operating Budget Report, p. 101. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2021-22-budget-detail.pdf

[124] UC Medical Centers Annual Financial Report, 2019-20, p. 29. University of California. https://finreports.universityofcalifornia.edu/index.php?file=/med_ctr/19-20/medical-center-reports-2020.pdf

SPOTLIGHT:

UCH Addresses Disparities in California Health Care Accessibility

As the most populous and culturally diverse U.S. state, California faces unique challenges in health care accessibility. In response to the state's health disparities, UCH prepares its graduates for the cultural and socioeconomic factors that affect health outcomes, including through its Programs in Medical Education (PRIME). PRIME's goal is to meet the health needs of historically underserved populations in California. PRIME programs include:

- PRIME-Latino Community at Irvine, which focuses on Latino health issues, including increasing medical proficiency in Spanish and Latino culture.
- PRIME San Joaquin Valley, which recruits and prepares students for future careers in medicine in the San Joaquin Valley, addressing physician shortages in the region.
- PRIME-Urban Underserved at San Francisco, which provides care for the homeless and other underserved populations in urban communities.
- Rural PRIME at Davis, which improves access to specialty care in rural areas using UC Davis' internationally recognized telemedicine program.
- PRIME-Leadership and Advocacy at Los Angeles, which trains future physicians and improves healthcare delivery systems in disadvantaged communities.
- PRIME-Health Equity at San Diego, which aims to reduce health delivery disparities.[125]

[125] 2020-21 Operating Budget Report, p. 56. UCOP Budget Analysis and Planning, 2020. https://www.ucop.edu/operating-budget/_files/rbudget/2020-21-budget-detail.pdf

Community benefit activities are informed by the Community Health Needs Assessment (CHNA), which is completed every three years by regional hospitals and health systems. In addition to each hospital completing a CHNA, UCH hospitals develop a Community Benefit Report annually to ensure regional health needs are addressed while also providing transparency about its spending and activities in the communities UC serves. The 2018-19 Community Benefits Report presents data gathered by the hospitals operated by UC Davis Health, UCI Health, UCLA Health, UC San Diego Health, and UCSF Health (including the private nonprofit Children's Hospital and Research Center at Oakland), and supplements the materials included in the audited financial report for the UCH hospitals for fiscal year 2018-19 that was approved by the Regents in November 2019. Additionally, UC's 20 health professional schools provide substantive benefits to communities throughout the state and beyond. In the future, UCH plans to include data regarding the community benefits provided through the health professional schools in the annual Community Benefits Report.

In 2018-19, UC spent $1.4 billion on community benefits, of which the largest share, $920 million, was uncompensated costs for treating Medi-Cal patients. UCH hospitals community benefit expenses also included $2.8 million in Medicare uncompensated costs. Net community benefits expenses in fiscal year 2018-19 reached 9.9% of operating expenses across UCH hospitals, in some cases as high as 12% (UCI Health and UCSF Health).[126]

[126] "Community Benefit and Impact, University of California Health," University of California, 2020, https://regents.universityofcalifornia.edu/regmeet/april20/h2.pdf

BEACON ECONOMICS

Figure 4.3a: UCH Hospitals Community Benefits 2018-19

Community Benefits ($ 000s)	UC Davis	UC Irvine	UC San Diego	UCLA	UCSF	Total UCH Hospitals
Net community benefit expenses						
Financial Assistance (charity care)[1]	3,988	9,590	23,127	5,830	17,033	59,568
Medicaid (Medi-Cal)[2]	40,808	109,145	139,873	185,653	444,774	920,254
Other means tested government programs[3]	(181)	382	(14)	-	-	187
Community health improvement services[4]	6,553	56	217	3,071	13,702	23,598
Health professions education[5]	56,898	36,149	43,054	76,364	67,665	280,130
Subsidized health services[6]	-	2,600	1,997	7,364	5,214	17,180
Research[7]	28,622	-	-	8,000	47,875	84,496
Cash and in-kind contributions[8]	6,269	-	178	2,649	-	9,097
Net community benefit expenses	142,957	157,922	208,432	288,936	596,264	1,394,511
Medicare	165,197	106,280	269,293	277,242	596,227	1,414,238
Community benefits with Medicare	308,154	264,202	477,725	566,177	1,192,491	2,808,749
Total operating expenses	2,411,433	1,339,874	2,332,809	2,942,691	5,059,118	14,085,925
Community benefits as % of expenses						
Net community benefit expenses	5.9%	11.8%	8.9%	9.8%	11.8%	9.9%
Medicare	6.9%	7.9%	11.5%	9.4%	11.8%	10.0%
Community benefits with Medicare	12.8%	19.7%	20.5%	19.2%	23.6%	19.9%

Source: UCH, Beacon Economics

[1] Free or discounted health services provided to patients who meet the organization's criteria for financial assistance and are thereby deemed unable to pay for all or a portion of the services. Financial assistance does not include self-pay discounts, prompt pay discounts, contractual allowances, and bad debt. Financial assistance is reported based on cost, not the amount of gross patient charges forgiven.

[2] Medicaid (Medi-Cal) community benefits are reported as the difference between the cost of care and reimbursement. Net community benefits thus are the loss incurred by the UC Health Centers in caring for Medi-Cal patients.

[3] Government-sponsored health programs in which eligibility is determined by income and/or assets (e.g., county indigent care programs).

[4] Activities or programs carried out or supported to improve public health and that are subsidized by the health care organization (e.g., community health education, community-based clinical services, healthcare support services for lower-income persons, and social and environmental activities known to improve health).

[5] Educational programs that result in a degree, certificate, or training necessary to be licensed as a health professional, as required by state law; or continuing education necessary to retain state license or certification by a board in the individual's health profession specialty. Expenses incurred by the UC Health Centers in educating interns and residents, medical students, and allied health professionals are reported in this category.

[6] Clinical services provided despite a financial loss to the organization because they are needed to ensure access to care for members of the community. The financial loss is measured net of any financial assistance and Medicaid losses to avoid double counting.

[7] Any study or investigation that receives funding from a tax-exempt or governmental entity whose goal is to generate generalizable knowledge that is made available to the public.

[8] Contributions made by the organization to support community benefits provided by other organizations.

UCH HOSPITALS GOVERNMENT PAYOR AND UNINSURED CASE VOLUME

UCH hospitals see thousands of inpatient admissions and millions of outpatient visits annually. Roughly 70% of patients have Medicare, Medi-Cal, or do not have health insurance. As such, UCH hospitals and hospital-based clinics care for some of the most underprivileged communities and patients, providing access to world-class care regardless of their ability to pay. Figures 4.3b - 4.3c detail the inpatient and outpatient case volume by payor type and zip code for this subset of patients. Figures 4.3d - 4.3f map the total patient volume (inpatient plus outpatient) by UCH hospital and government or uninsured payor type.

Figure 4.3b: UCH Hospital Government Payor and Uninsured Inpatient Admissions, 2018-19

Campus	Visits	Medi-Cal	Medicare	Uninsured
UC Davis Health	21,869	52.2%	47.2%	0.6%
UCI Health	16,459	53.4%	44.1%	2.5%
UCLA Health	23,285	33.5%	66.4%	1.1%
UCSF	28,220	58.9%	40.3%	0.8%
UC San Diego	22,149	50.9%	47.0%	2.0%
Total	**111,982**	**49.7%**	**49.0%**	**1.3%**

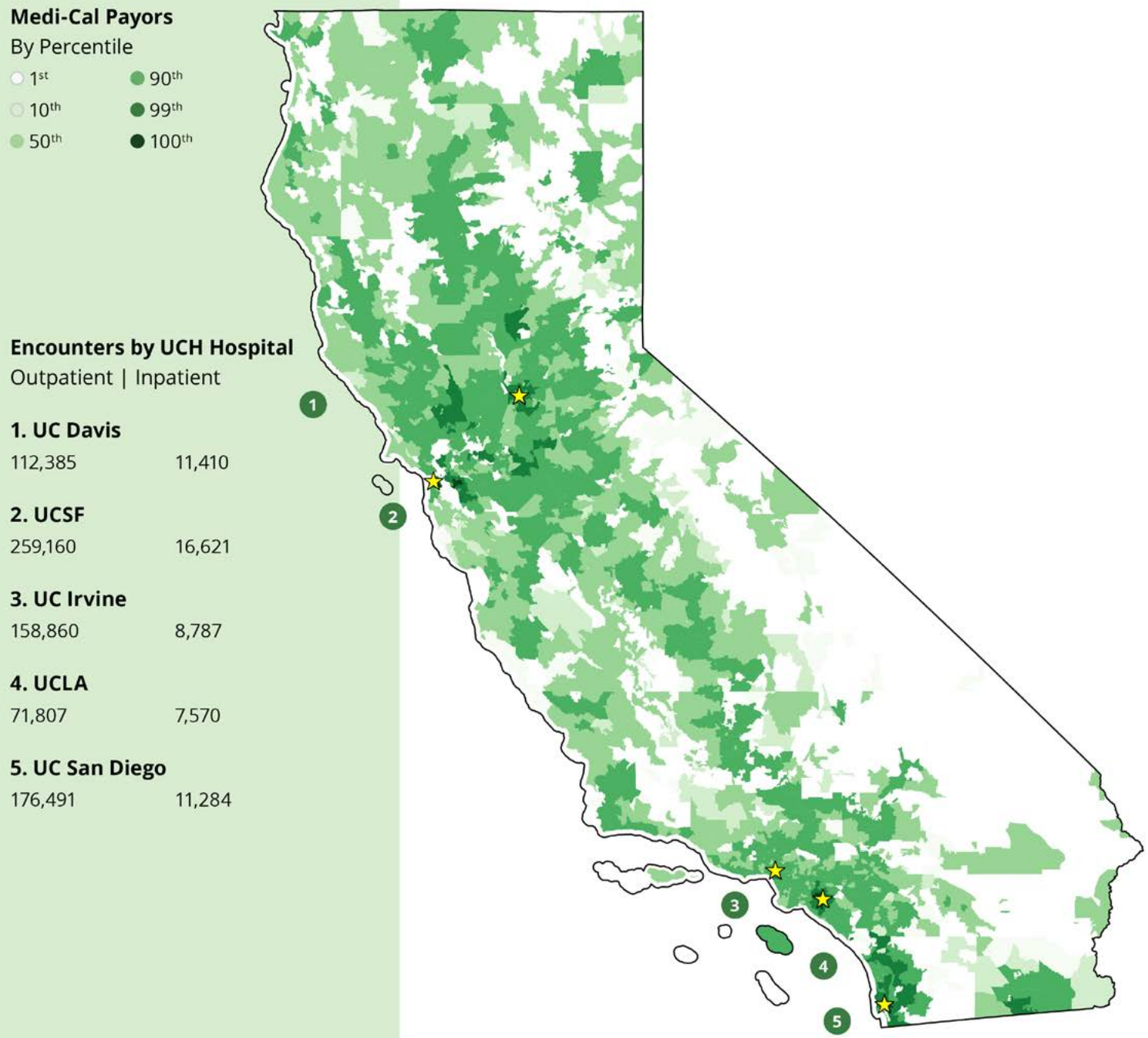
Source: UCH; analysis by Beacon Economics

Figure 4.3c: UCH Hospital Government Payor and Uninsured Outpatient Visits, 2018-19

Campus	Visits	Medi-Cal	Medicare	Uninsured
UC Davis Health	454,209	24.7%	74.2%	1.1%
UCI Health	418,077	38.0%	57.5%	4.5%
UCLA Health	321,280	22.4%	75.7%	2.0%
UCSF	461,157	56.2%	41.2%	2.6%
UC San Diego	445,758	39.6%	58.4%	2.1%
Total	**2,100,481**	**37.1%**	**60.5%**	**2.5%**

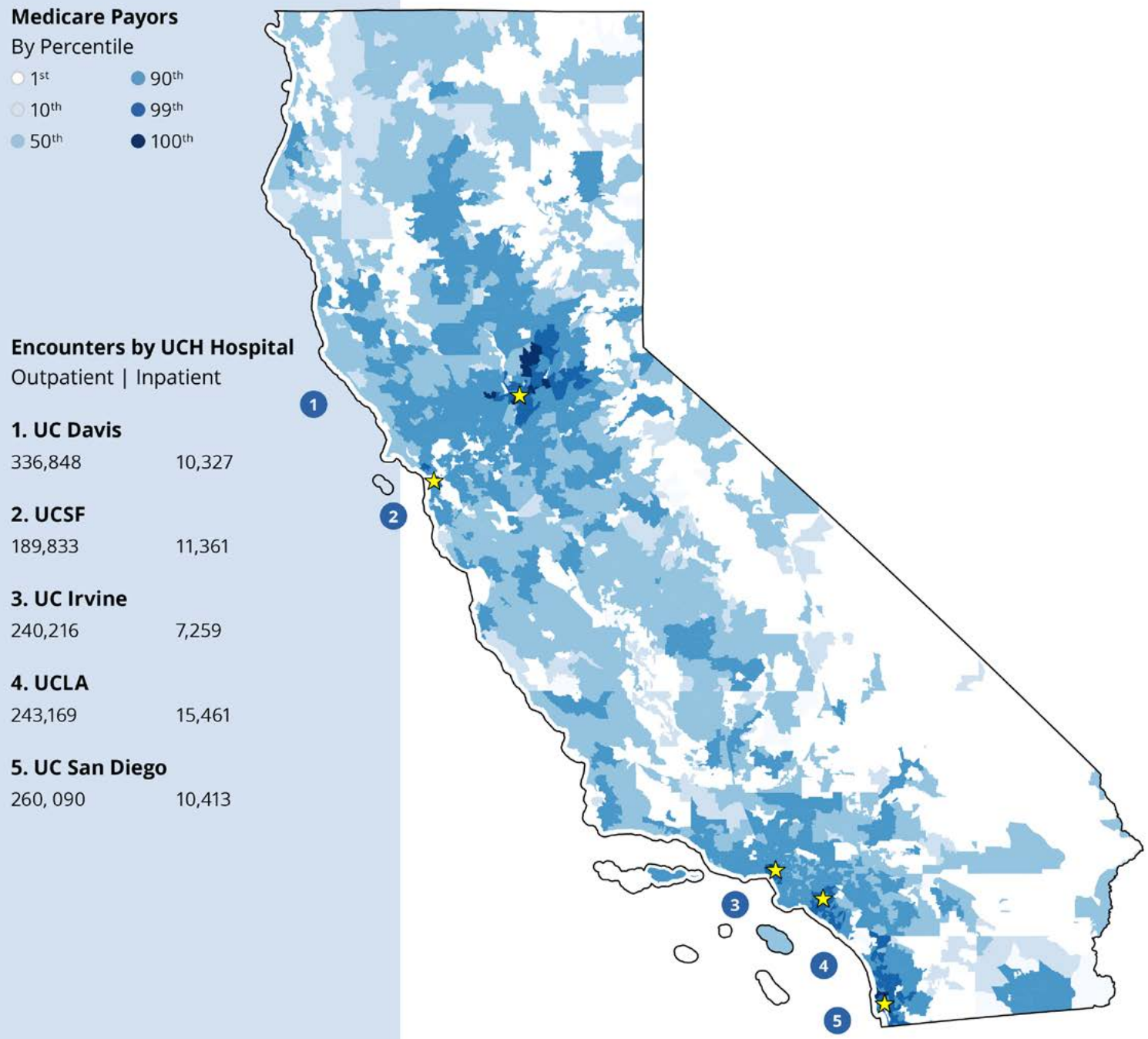
Source: UCH; analysis by Beacon Economics

Figure 4.3d: Medi-Cal Inpatient/Outpatient Case Volume by UCH Hospital



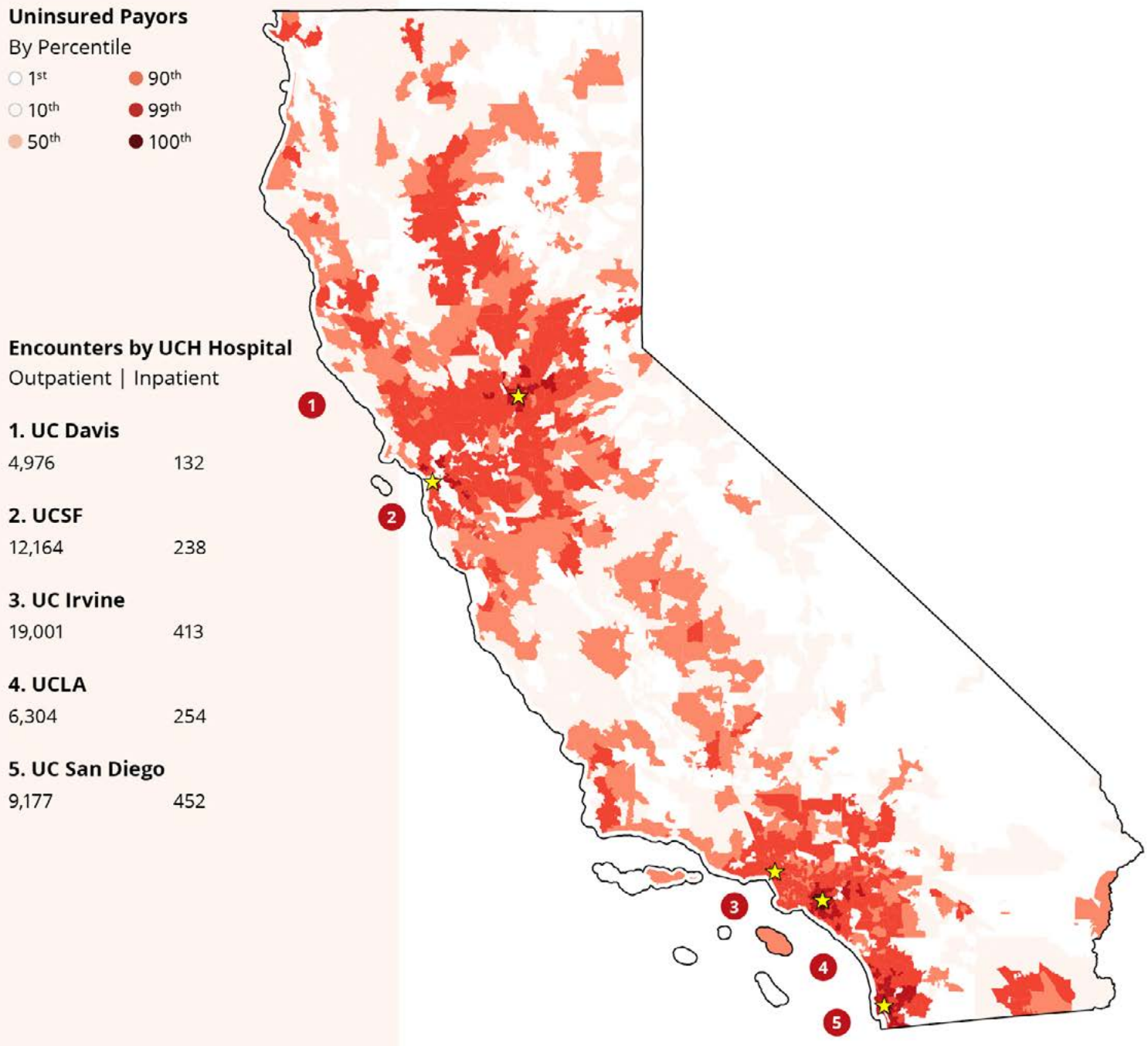
Source: UCH; analysis by Beacon Economics

Figure 4.3e: Medicare Inpatient/Outpatient Case Volume by UCH Hospital



Source: UCH; analysis by Beacon Economics

Figure 4.3f: Uninsured Inpatient/Outpatient Case Volume by UCH Hospital



Source: UCH; analysis by Beacon Economics

UCH HOSPITALS INPATIENT/OUTPATIENT NET LOSS

UCH hospitals contributed approximately $1.7 billion to serve Medicare, Medi-Cal, and uninsured patients in 2018-19. Figure 4.3g shows the inpatient and outpatient net loss (expected net revenue and supplemental funds offset by direct and indirect costs). The data show UCH hospital contributions and their role in serving the most vulnerable populations, illustrating UCH's mission and commitment to offering service to every community regardless of their ability to pay.

Figure 4.3g: Government Payor and Uninsured Outpatient and Inpatient Net Loss, 2018-19 (Millions of Dollars)

Campus	Outpatient			Inpatient			Total
	Medi-Cal	Medicare	Uninsured	Medi-Cal	Medicare	Uninsured	
UC Davis Health	28.00	96.51	2.34	19.81	88.59	0.32	**235.57**
UCI Health	51.67	54.35	10.17	70.37	22.96	3.49	**213.01**
UCLA Health	15.84	73.77	4.21	65.59	30.22	5.42	**195.05**
UCSF Health	112.07	133.78	3.97	172.83	169.24	1.89	**593.77**
UC San Diego	65.92	100.04	4.69	139.12	102.76	5.44	**417.98**
Total	**273.50**	**458.46**	**25.37**	**467.72**	**413.78**	**16.56**	**1,655.38**

Source: UCH; analysis by Beacon Economics

BEACON ECONOMICS

5 CONCLUSION

UC plays a critical role in bolstering California's economy, contributing significantly to the state's vibrancy and economic strength. UC-related spending delivers substantial economic and fiscal impacts annually to the state, generating $82.1 billion in economic output, $55.8 billion in value added (2% of GSP), $37.6 billion in labor income, and $4.2 billion in state and local tax revenue. In addition, UC supports 529,119 jobs in California (2% of the state's jobs, or one in every 45 jobs).

In 2018-19, State funding for UC totaled $3.9 billion. Every $1 of State funding helps generate or support:

$21.04
in economic output

$14.32
in value added

$9.65
in labor income

$3.01
in Federal, state, and local tax revenue

Every **$7,371** in State funding supports roughly one job.

UC's sizable contributions to California reveal how State funding decisions for the University influence the performance of California's economy. UC's commitment to excellence, its significance to California, and its devotion to growth make the system the world-class institution it is today. As an epicenter of research and innovation, a leading driver of social mobility, and a nationally-ranked provider of medical services, UC transforms lives and shapes futures for the better.

BEACON ECONOMICS

APPENDIX A: DETAILED IMPACT ESTIMATES

Figure A.1: UC Share of Total Employment Impacts to California[1]

Region	UC Total Economic Impact		California		UC Share of Total
	Employment[2]	% of Total	Employment	% of Total	
Central Coast	33,155	6.3%	932,601	3.9%	**3.6%**
Inland Empire	25,577	4.8%	2,080,984	8.6%	**1.2%**
Inyo Mono	13	0.0%	20,719	0.1%	**0.1%**
Los Angeles	109,338	20.7%	6,515,599	27.1%	**1.7%**
Monterey Bay	18,734	3.5%	437,281	1.8%	**4.3%**
North Coast	140	0.0%	161,093	0.7%	**0.1%**
North SJV	14,802	2.8%	1,349,159	5.6%	**1.1%**
Orange County	54,211	10.2%	2,279,487	9.5%	**2.4%**
Sacramento-Tahoe	77,911	14.7%	1,506,658	6.3%	**5.2%**
San Diego-Imperial	82,494	15.6%	2,230,016	9.3%	**3.7%**
San Francisco Bay	111,618	21.1%	5,525,168	23.0%	**2.0%**
South SJV	758	0.1%	706,281	2.9%	**0.1%**
Superior California	92	0.0%	134,847	0.6%	**0.1%**
Upper Sacramento Valley	275	0.1%	184,673	0.8%	**0.1%**
Total	**529,119**	**100.0%**	**24,064,566**	**100.0%**	**2.2%**

Source: IMPLAN; analysis by Beacon Economics

[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.

[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

BEACON ECONOMICS

Figure A.2: UC Share of Total Labor Income Impacts to California[1], Dollars in Millions

	UC Total Economic Impact		California		
Region	Labor Income	% of Total	Labor Income	% of Total	**UC Share of Total**
Central Coast	$1,436.85	3.8%	$99,341.23	3.85%	**1.4%**
Inland Empire	$1,282.49	3.4%	$196,520.47	7.61%	**0.7%**
Inyo Mono	$0.83	0.0%	$1,840.33	0.07%	**0.0%**
Los Angeles	$7,829.03	20.8%	$638,495.05	24.73%	**1.2%**
Monterey Bay	$931.04	2.5%	$48,459.46	1.88%	**1.9%**
North Coast	$6.59	0.0%	$15,063.18	0.58%	**0.0%**
North SJV	$771.16	2.0%	$130,244.40	5.05%	**0.6%**
Orange County	$3,686.28	9.8%	$224,100.63	8.68%	**1.6%**
Sacramento-Tahoe	$5,204.98	13.8%	$150,278.70	5.82%	**3.5%**
San Diego-Imperial	$5,588.29	14.8%	$219,356.99	8.50%	**2.5%**
San Francisco Bay	$10,830.57	28.8%	$762,234.00	29.53%	**1.4%**
South SJV	$47.70	0.1%	$65,181.82	2.52%	**0.1%**
Superior California	$4.64	0.0%	$12,976.71	0.50%	**0.0%**
Upper Sacramento Valley	$14.07	0.0%	$17,532.09	0.68%	**0.1%**
Total	**$37,634.51**	**100.0%**	**$2,581,625.04**	**100.00%**	**1.5%**

Source: IMPLAN; analysis by Beacon Economics
[1]Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.

BEACON ECONOMICS

Figure A.3: UC Share of Total Value Added Impacts to California[1], Dollars in Millions

Region	UC Economic Impact		California		UC Share of Total
	Value Added	% of Total	Value Added	% of Total	
Central Coast	$2,202.71	3.9%	$91,897.99	3.12%	**2.4%**
Inland Empire	$2,022.26	3.6%	$176,855.75	6.00%	**1.1%**
Inyo Mono	$1.37	0.0%	$1,998.29	0.07%	**0.1%**
Los Angeles	$11,951.99	21.4%	$753,044.09	25.54%	**1.6%**
Monterey Bay	$1,417.22	2.5%	$40,802.16	1.38%	**3.5%**
North Coast	$13.60	0.0%	$13,113.55	0.44%	**0.1%**
North SJV	$1,200.14	2.1%	$119,844.31	4.06%	**1.0%**
Orange County	$5,461.22	9.8%	$260,078.42	8.82%	**2.1%**
Sacramento-Tahoe	$7,476.13	13.4%	$151,191.56	5.13%	**4.9%**
San Diego-Imperial	$8,203.69	14.7%	$258,671.96	8.77%	**3.2%**
San Francisco Bay	$15,758.07	28.2%	$986,676.29	33.46%	**1.6%**
South SJV	$88.58	0.2%	$67,408.21	2.29%	**0.1%**
Superior California	$8.60	0.0%	$11,446.02	0.39%	**0.1%**
Upper Sacramento Valley	$26.55	0.0%	$16,003.67	0.54%	**0.2%**
Total	**$55,832.12**	**100.0%**	**$2,949,032.27**	**100.00%**	**1.9%**

Source: IMPLAN; analysis by Beacon Economics
Note: Totals may not be exact because of rounding.
[1]Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.

Figure A.4: UC Share of Total Output Impacts to California[1], Dollars in Millions

Region	UC Total Economic Impact		California		UC Share of Total
	Output	% of Total	Output	% of Total	
Central Coast	$3,381.80	4.1%	$153,381.93	3.19%	**2.2%**
Inland Empire	$3,191.56	3.9%	$315,238.58	6.57%	**1.0%**
Inyo Mono	$3.33	0.0%	$3,274.80	0.07%	**0.1%**
Los Angeles	$17,090.22	20.8%	$1,246,149.75	25.95%	**1.4%**
Monterey Bay	$2,131.25	2.6%	$66,415.86	1.38%	**3.2%**
North Coast	$27.62	0.0%	$22,487.01	0.47%	**0.1%**
North SJV	$2,052.55	2.5%	$220,638.93	4.60%	**0.9%**
Orange County	$8,060.85	9.8%	$430,282.10	8.96%	**1.9%**
Sacramento-Tahoe	$11,162.91	13.6%	$244,089.27	5.08%	**4.6%**
San Diego-Imperial	$12,274.01	15.0%	$409,138.97	8.52%	**3.0%**
San Francisco Bay	$22,407.54	27.3%	$1,522,484.16	31.71%	**1.5%**
South SJV	$204.89	0.2%	$119,870.50	2.50%	**0.2%**
Superior California	$17.10	0.0%	$19,298.30	0.40%	**0.1%**
Upper Sacramento Valley	$57.22	0.1%	$28,607.25	0.60%	**0.2%**
Total	**$82,061.86**	**100.0%**	**$4,801,357.41**	**100.00%**	**1.7%**

Source: IMPLAN; analysis by Beacon Economics
Note: Totals may not be exact because of rounding.
[1]Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.

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Figure A.5: Total Economic Impacts UC Berkeley General Campus[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	33	1.81	3.13	6.02
Inland Empire	74	3.90	5.89	12.54
Inyo Mono	0	0.03	0.05	0.08
Los Angeles	168	11.85	19.06	35.96
Monterey Bay	158	8.46	14.92	25.58
North Coast	21	0.96	2.19	4.04
North San Joaquin Valley	391	20.41	36.05	74.52
Orange	44	2.98	4.99	9.15
Sacramento-Tahoe	218	12.15	21.33	39.52
San Diego-Imperial	27	1.61	2.97	6.04
San Francisco Bay	36,114	2,884.45	4,469.97	6,081.59
South San Joaquin Valley	40	2.48	3.94	10.25
Superior California	9	0.43	0.87	1.60
Upper Sacramento Valley	18	0.95	1.88	4.26
Total	**37,314**	**2,952.46**	**4,587.23**	**6,311.15**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

Figure A.6: Total Economic Impacts UC Davis General Campus[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	27	1.64	2.84	5.54
Inland Empire	48	2.60	4.37	10.06
Inyo Mono	3	0.13	0.19	0.34
Los Angeles	244	17.73	32.40	57.18
Monterey Bay	22	1.25	2.04	4.36
North Coast	11	0.51	1.01	2.26
North San Joaquin Valley	400	21.89	37.61	88.79
Orange	42	2.94	5.02	9.51
Sacramento-Tahoe	46,179	2,269.12	3,511.90	5,298.32
San Diego-Imperial	31	1.96	4.23	8.27
San Francisco Bay	1,187	123.98	210.98	344.08
South San Joaquin Valley	36	2.35	3.96	11.37
Superior California	17	0.88	1.56	3.18
Upper Sacramento Valley	93	4.69	9.08	19.14
Total	**48,342**	**2,451.70**	**3,827.20**	**5,862.41**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

Figure A.7: Total Economic Impacts UC Irvine General Campus[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	48	2.93	5.02	9.46
Inland Empire	731	34.84	61.19	113.79
Inyo Mono	0	0.03	0.05	0.09
Los Angeles	1,743	118.97	205.61	380.22
Monterey Bay	4	0.26	0.40	0.97
North Coast	3	0.17	0.30	0.72
North San Joaquin Valley	28	1.72	2.88	8.02
Orange	32,136	1,811.27	2,826.27	4,056.52
Sacramento-Tahoe	9	0.49	0.83	1.83
San Diego-Imperial	178	10.79	18.65	36.56
San Francisco Bay	60	6.67	11.01	18.38
South San Joaquin Valley	35	2.45	4.90	11.65
Superior California	2	0.09	0.15	0.33
Upper Sacramento Valley	2	0.11	0.19	0.52
Total	**34,980**	**1,990.80**	**3,137.45**	**4,639.05**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

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Figure A.8: Total Economic Impact UCLA General Campus[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	516	28.73	50.60	86.89
Inland Empire	1,116	53.74	93.70	178.56
Inyo Mono	1	0.09	0.17	0.27
Los Angeles	52,256	3,103.14	4,996.11	7,758.87
Monterey Bay	12	0.66	1.02	2.37
North Coast	7	0.32	0.58	1.38
North San Joaquin Valley	71	4.15	6.97	19.67
Orange	1,420	93.17	161.84	272.12
Sacramento-Tahoe	20	1.15	1.97	4.35
San Diego-Imperial	149	8.78	15.51	32.25
San Francisco Bay	205	23.16	37.66	59.30
South San Joaquin Valley	109	6.82	14.05	30.28
Superior California	4	0.20	0.33	0.73
Upper Sacramento Valley	6	0.34	0.62	1.62
Total	**55,890**	**3,324.45**	**5,381.12**	**8,448.65**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

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Figure A.9: Total Economic Impact UC Merced General Campus[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	17	0.97	1.67	3.23
Inland Empire	32	1.79	2.96	6.79
Inyo Mono	0	0.02	0.03	0.05
Los Angeles	164	11.99	20.41	35.88
Monterey Bay	16	0.86	1.35	2.65
North Coast	4	0.20	0.37	0.85
North San Joaquin Valley	12,250	633.83	962.76	1,528.60
Orange	27	1.91	3.27	6.04
Sacramento-Tahoe	167	9.82	16.27	32.43
San Diego-Imperial	13	0.78	1.56	3.11
San Francisco Bay	508	53.64	89.22	139.77
South San Joaquin Valley	84	4.75	8.57	18.08
Superior California	8	0.46	0.76	1.69
Upper Sacramento Valley	12	0.61	1.06	2.52
Total	**13,302**	**721.63**	**1,110.25**	**1,781.69**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

Figure A.10: Total Economic Impact UC Riverside General Campus[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	26	1.56	2.64	4.92
Inland Empire	20,023	1,013.92	1,567.25	2,315.86
Inyo Mono	1	0.06	0.12	0.18
Los Angeles	905	66.86	116.42	202.13
Monterey Bay	4	0.24	0.38	0.81
North Coast	2	0.09	0.17	0.41
North San Joaquin Valley	24	1.39	2.34	6.58
Orange	399	25.65	45.52	76.28
Sacramento-Tahoe	8	0.47	0.82	1.74
San Diego-Imperial	85	5.10	10.21	18.90
San Francisco Bay	130	16.27	28.48	43.61
South San Joaquin Valley	24	1.61	3.49	9.04
Superior California	1	0.07	0.12	0.27
Upper Sacramento Valley	2	0.12	0.24	0.59
Total	**21,635**	**1,133.41**	**1,778.19**	**2,681.34**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

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Figure A.11: Total Economic Impact UC Santa Barbara General Campus[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	31,670	1,351.64	2,052.02	3,115.57
Inland Empire	162	8.06	12.22	25.75
Inyo Mono	0	0.05	0.08	0.12
Los Angeles	1,158	81.41	140.87	255.03
Monterey Bay	29	1.51	2.30	4.72
North Coast	4	0.21	0.39	0.94
North San Joaquin Valley	42	2.48	4.19	11.44
Orange	124	7.83	13.05	23.26
Sacramento-Tahoe	15	0.87	1.49	3.27
San Diego-Imperial	39	2.37	4.34	9.43
San Francisco Bay	231	25.74	42.79	69.33
South San Joaquin Valley	78	4.79	8.05	17.72
Superior California	2	0.08	0.14	0.31
Upper Sacramento Valley	4	0.21	0.40	1.06
Total	**33,558**	**1,487.24**	**2,282.33**	**3,537.95**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

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Figure A.12: Total Economic Impact UC Santa Cruz General Campus[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	69	3.62	6.33	11.46
Inland Empire	63	3.10	4.62	9.63
Inyo Mono	0	0.02	0.03	0.05
Los Angeles	140	10.40	17.72	32.53
Monterey Bay	18,021	892.49	1,352.05	2,014.49
North Coast	4	0.19	0.37	0.88
North San Joaquin Valley	80	4.32	7.75	17.65
Orange	35	2.19	3.62	6.39
Sacramento-Tahoe	31	1.72	3.02	5.97
San Diego-Imperial	19	1.15	2.42	4.84
San Francisco Bay	736	77.99	130.53	205.86
South San Joaquin Valley	35	2.00	3.10	7.34
Superior California	3	0.13	0.25	0.49
Upper Sacramento Valley	4	0.23	0.46	1.13
Total	**19,239**	**999.54**	**1,532.26**	**2,318.73**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

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Figure A.13: Total Economic Impact UC San Diego General Campus[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	46	2.88	4.91	9.81
Inland Empire	770	37.82	62.34	120.83
Inyo Mono	1	0.07	0.11	0.19
Los Angeles	715	53.63	93.13	184.30
Monterey Bay	12	0.71	1.12	2.60
North Coast	9	0.48	0.81	1.98
North San Joaquin Valley	49	2.88	4.79	13.23
Orange	501	34.33	54.32	94.49
Sacramento-Tahoe	23	1.36	2.25	5.01
San Diego-Imperial	48,102	2,523.96	4,025.95	6,154.56
San Francisco Bay	234	28.43	48.66	78.05
South San Joaquin Valley	38	2.60	5.35	13.30
Superior California	4	0.21	0.34	0.77
Upper Sacramento Valley	4	0.24	0.43	1.11
Total	**50,509**	**2,689.60**	**4,304.50**	**6,680.24**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

Figure A.14: Total Economic Impact UC Davis Health[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	39	2.90	5.57	9.89
Inland Empire	56	3.04	5.25	11.55
Inyo Mono	4	0.13	0.20	0.37
Los Angeles	317	23.35	41.22	74.07
Monterey Bay	18	1.01	1.68	3.31
North Coast	9	0.38	0.76	1.58
North San Joaquin Valley	374	19.74	33.48	74.05
Orange	70	5.31	9.35	17.39
Sacramento-Tahoe	30,475	2,864.05	3,842.50	5,633.25
San Diego-Imperial	43	3.34	6.65	12.41
San Francisco Bay	1,452	155.59	251.84	399.31
South San Joaquin Valley	25	1.60	2.69	7.25
Superior California	14	0.65	1.20	2.32
Upper Sacramento Valley	83	4.02	7.39	14.46
Total	**32,977**	**3,085.12**	**4,209.79**	**6,261.22**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

BEACON ECONOMICS

Figure A.15: Total Economic Impact UCI Health[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	33	2.02	3.56	6.59
Inland Empire	528	24.50	43.44	79.68
Inyo Mono	0	0.02	0.03	0.05
Los Angeles	1,354	92.86	158.31	295.13
Monterey Bay	2	0.14	0.23	0.52
North Coast	1	0.07	0.13	0.31
North San Joaquin Valley	15	0.91	1.51	4.21
Orange	17,117	1,542.94	2,079.85	3,059.35
Sacramento-Tahoe	5	0.32	0.57	1.21
San Diego-Imperial	113	7.17	12.61	23.65
San Francisco Bay	60	7.34	13.30	21.44
South San Joaquin Valley	18	1.30	2.76	6.10
Superior California	1	0.04	0.06	0.13
Upper Sacramento Valley	1	0.04	0.06	0.17
Total	**19,250**	**1,679.66**	**2,316.42**	**3,498.54**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

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Figure A.16: Total Economic Impact UCLA Health[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	492	26.97	47.81	81.64
Inland Empire	1,029	48.87	85.98	161.33
Inyo Mono	1	0.09	0.17	0.27
Los Angeles	48,720	4,129.12	5,940.68	7,457.16
Monterey Bay	12	0.68	1.06	2.46
North Coast	5	0.23	0.43	1.05
North San Joaquin Valley	70	4.15	6.95	19.86
Orange	1,352	88.17	153.46	256.63
Sacramento-Tahoe	20	1.10	1.89	4.18
San Diego-Imperial	147	8.64	15.31	31.92
San Francisco Bay	200	22.43	36.61	57.90
South San Joaquin Valley	106	6.64	13.60	29.60
Superior California	2	0.11	0.19	0.41
Upper Sacramento Valley	5	0.28	0.53	1.44
Total	**52,160**	**4,337.51**	**6,304.67**	**8,105.85**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

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Figure A.17: Total Economic Impact UC San Diego Health[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	34	2.19	3.90	7.50
Inland Empire	719	34.06	54.31	105.70
Inyo Mono	1	0.04	0.07	0.12
Los Angeles	749	56.72	94.29	179.17
Monterey Bay	8	0.48	0.76	1.66
North Coast	4	0.18	0.32	0.77
North San Joaquin Valley	32	1.86	3.09	8.49
Orange	734	52.72	75.88	128.74
Sacramento-Tahoe	15	0.89	1.53	3.36
San Diego-Imperial	33,447	3,005.16	4,069.62	5,905.89
San Francisco Bay	308	39.87	67.94	103.67
South San Joaquin Valley	25	1.73	3.85	8.94
Superior California	1	0.06	0.10	0.22
Upper Sacramento Valley	2	0.12	0.20	0.52
Total	**36,078**	**3,196.08**	**4,375.85**	**6,454.75**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

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Figure A.18: Total Economic Impact UCSF Health[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	91	6.22	11.39	20.75
Inland Empire	194	10.48	16.05	33.81
Inyo Mono	1	0.04	0.06	0.12
Los Angeles	621	45.06	66.57	125.50
Monterey Bay	344	18.54	31.35	53.54
North Coast	45	2.12	4.72	8.49
North San Joaquin Valley	809	42.62	74.09	145.86
Orange	187	13.41	22.33	40.55
Sacramento-Tahoe	621	35.66	59.66	109.82
San Diego-Imperial	89	6.83	12.47	23.79
San Francisco Bay	54,225	6,050.35	8,304.44	12,036.26
South San Joaquin Valley	91	5.55	8.66	20.06
Superior California	20	0.98	2.05	3.75
Upper Sacramento Valley	31	1.62	3.10	6.64
Total	**57,371**	**6,239.51**	**8,616.93**	**12,628.94**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

Figure A.19: Total Economic Impact Lawrence Berkeley National Laboratory[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	5	0.31	0.55	1.03
Inland Empire	15	0.80	1.21	2.53
Inyo Mono	0	0.00	0.00	0.00
Los Angeles	40	2.83	4.22	7.72
Monterey Bay	30	1.60	2.80	4.72
North Coast	4	0.20	0.45	0.82
North San Joaquin Valley	70	3.63	6.48	12.53
Orange	11	0.72	1.19	2.14
Sacramento-Tahoe	48	2.64	4.56	8.29
San Diego-Imperial	4	0.26	0.46	0.89
San Francisco Bay	7,597	559.23	878.23	1,255.40
South San Joaquin Valley	7	0.41	0.64	1.40
Superior California	2	0.12	0.23	0.43
Upper Sacramento Valley	4	0.20	0.36	0.78
Total	**7,836**	**572.96**	**901.38**	**1,298.70**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

Figure A.20: Total Economic Impact Hastings College of the Law[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	0	0.01	0.02	0.04
Inland Empire	1	0.03	0.04	0.08
Inyo Mono	0	0.00	0.00	0.00
Los Angeles	1	0.09	0.14	0.26
Monterey Bay	1	0.07	0.12	0.21
North Coast	0	0.01	0.02	0.03
North San Joaquin Valley	3	0.17	0.30	0.62
Orange	0	0.02	0.03	0.05
Sacramento-Tahoe	2	0.10	0.17	0.32
San Diego-Imperial	0	0.01	0.02	0.04
San Francisco Bay	292	25.01	38.25	51.91
South San Joaquin Valley	0	0.02	0.03	0.07
Superior California	0	0.00	0.01	0.01
Upper Sacramento Valley	0	0.01	0.01	0.03
Total	**301**	**25.52**	**39.16**	**53.66**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

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Figure A.21: Total Economic Impact UC Office of the President[1]

Region	Employment[2]	Labor Income ($, Millions)	Value Added ($, Millions)	Output ($, Millions)
Central Coast	6	0.31	0.54	1.05
Inland Empire	12	0.66	1.00	2.14
Inyo Mono	0	0.01	0.01	0.01
Los Angeles	29	2.06	3.34	6.30
Monterey Bay	27	1.44	2.54	4.40
North Coast	4	0.20	0.43	0.84
North San Joaquin Valley	65	3.42	6.11	12.66
Orange	7	0.51	0.86	1.59
Sacramento-Tahoe	38	2.17	3.80	7.15
San Diego-Imperial	5	0.28	0.51	1.05
San Francisco Bay	5,455	442.79	677.40	959.09
South San Joaquin Valley	6	0.41	0.66	1.69
Superior California	2	0.10	0.21	0.40
Upper Sacramento Valley	4	0.22	0.41	0.94
Total	**5,660**	**454.57**	**697.81**	**999.31**

Source: IMPLAN; analysis by Beacon Economics
[1] Impacts are direct, indirect, and induced. Impacts are generated by Construction, Operations, and Student spending.
[2] Employment includes full-time, part-time, and temporary jobs (headcount) at UC and direct, indirect, and induced jobs not under UC's payroll.

APPENDIX B

MULTI-REGIONAL INPUT-OUTPUT METHODOLOGY AND IMPLAN

This report is based on an economic analysis technique known as Multi-Regional Input-Output (MRIO) analysis, which examines inter-industry relationships across several regions. A MRIO analysis builds off the standard Input-Output (I-O) analysis by expanding effects from monetary market transactions beyond a single region; it also helps capture leakages in other regions. In a MRIO analysis, the direct effect in one region triggers indirect and induced effects in other regions. The results of the analysis reveal the effects of a change in one or several economic activities on an entire economy, along with the economic interdependence of regions.

IMPLAN expands upon the traditional I-O approach to include transactions among industries and institutions, and within institutions themselves, thereby capturing all monetary market transactions in a given period. This specific report uses the IMPLAN web model. For more information on the IMPLAN modeling process, visit IMPLAN.com.

Although IMPLAN provides an excellent framework for conducting impact analysis, Beacon Economics takes extra precautions to ensure model results are valid, employing decades of experience to tailor the model to the unique demands of each economic impact analysis the firm conducts. Procedures and assumptions are thoroughly and systematically inspected for validity and individual project appropriateness before any analysis is performed.