



1111 Franklin Street
Oakland, California 94607-5200
Phone: (510) 987-9074
Fax: (510) 987-9086
<http://www.ucop.edu>

September 21, 2018

Director Keely Bosler
Department of Finance
915 L Street
Sacramento, California 95814

The Honorable Holly J. Mitchell
Chair, Joint Legislative Budget Committee
1020 N Street, Room 553
Sacramento, California 95814

Dear Director Bosler and Senator Mitchell:

Pursuant to Section 92670 of the Education Code, enclosed is the University of California's biennial report to the Legislature and the Department of Finance on *Expenditures for Undergraduate and Graduate Instruction*.

If you have any questions regarding this report, Associate Vice President David Alcocer would be pleased to speak with you. He can be reached by telephone at (510) 987-9113, or by email at David.Alcocer@ucop.edu.

Yours very truly,



Janet Napolitano
President

Enclosure

cc: Senate Budget and Fiscal Review
The Honorable Anthony J. Portantino, Chair
Senate Budget and Fiscal Review Subcommittee #1
(Attn: Ms. Anita Lee)
(Attn: Ms. Cheryl Black)
The Honorable Kevin McCarty, Chair
Assembly Budget Subcommittee #2
(Attn: Mr. Mark Martin)
(Attn: Mrs. Katie Sperla)
Ms. Jennifer Troia, Joint Legislative Budget Committee

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Mr. Danny Alvarez, Secretary of the Senate
Ms. Tina McGee, Legislative Analyst's Office
Ms. Amy Leach, Office of the Chief Clerk of the Assembly
Ms. Diane Boyer-Vine, Legislative Counsel Bureau
Mr. E. Dotson Wilson, Chief Clerk of the Assembly
Mr. Jeff Bell, Department of Finance
Mr. Chris Ferguson, Department of Finance
Mr. Jack Zwald, Department of Finance
Ms. Tina McGee, Legislative Analyst's Office
Mr. Mac Taylor, Legislative Analyst's Office
Mr. Jason Constantouros, Legislative Analyst's Office
Provost and Executive Vice President Michael Brown
Executive Vice President and Chief Financial Officer Nathan Brostrom
Vice President Pamela Brown
Associate Vice President David Alcocer
Associate Vice President and Director Kieran Flaherty
Chief Policy Advisor and Executive Director Jenny Kao
Chief of Staff to the Chief Financial Officer Oren Gabriel

Report on Expenditures for Undergraduate and Graduate Instruction

October 2018

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I. Executive Summary

California’s public investment in higher education has fueled economic prosperity, social mobility, and cultural opportunities for decades. The State’s historic commitment has enabled the University of California not only to educate the brightest students – over 264,000 in 2016-17 alone – but to touch the life of every Californian through its cutting-edge research, medical innovation, agricultural advancement, and other achievements consistent with UC’s three-part mission of instruction, research, and public service.

This report provides information on expenditures for educational activities pursuant to Section 92670 of the Education Code. Consistent with Section 92670, figures are provided at the systemwide level (as shown in Display 1 below) and for each UC campus, and were calculated based on publicly available information¹ and a methodology developed by the National Association of College and University Business Officers (NACUBO). Detailed campus figures can be found in Appendix 1, and a description of the NACUBO methodology can be found in the full report.

Display 1: Systemwide Expenditures for Instruction

	Fund Type					
	Systemwide	State Funds	NRT	Other GF	Stud Tuition & Fees	All Other Funds
Undergraduate Students						
General Campus	\$ 27,120	\$ 7,236	\$ 2,575	\$ 1,137	\$ 10,662	\$ 5,510
STEM Disciplines	\$ 27,818	\$ 7,462	\$ 2,657	\$ 1,173	\$ 10,892	\$ 5,634
Non-STEM Disciplines	\$ 26,639	\$ 7,080	\$ 2,518	\$ 1,112	\$ 10,503	\$ 5,425
Graduate Students						
General Campus	\$ 67,422	\$ 11,470	\$ 3,969	\$ 1,753	\$ 24,329	\$ 25,901
STEM Disciplines	\$ 70,124	\$ 11,887	\$ 4,120	\$ 1,820	\$ 24,754	\$ 27,543
Non-STEM Disciplines	\$ 65,298	\$ 11,167	\$ 3,859	\$ 1,704	\$ 24,019	\$ 24,549
Health Sciences	\$ 218,325	\$ 21,410	\$ 7,652	\$ 3,380	\$ 29,334	\$ 156,549

¹ Detailed figures can be found at: https://ucop.edu/operating-budget/files/legreports/18-19/efi_supplementaldata-2018.pdf

II. Introduction

Pursuant to Section 92670 of the Education Code, the University of California is required to report biennially to the Legislature and the Department of Finance expenditures for undergraduate and graduate instruction and research activities, disaggregated by certain categories of students and fund sources. The report is to be submitted on or before October 1 of every other year, beginning in 2014.

For reports prepared on or after January 1, 2017 (i.e., reports submitted in 2018 and future even-numbered years), UC is required to include figures disaggregated by campus and calculated according to a methodology developed by the National Association of College and University Business Officers (NACUBO).

III. The NACUBO Methodology

The NACUBO cost model represents an effort to develop a framework that colleges and universities can use to develop their own estimated expenditures for undergraduate education in a manner that is simple, transparent, and easy to comprehend.

NACUBO provides two sets of general instructions for applying its methodology: one for institutions (like UC) that prepare and submit periodic indirect cost rate proposals (known as “step-down schedules”) based on OMB Circular A-21 to the Federal government, and one for institutions that do not submit such proposals. In calculating campus expenditures for instruction, UC used the first set of instructions. This approach has the advantage of using expenditure figures that were previously compiled and vetted by each UC campus prior to the indirect cost rate negotiations with the Federal government. It does, however, pose two challenges:

- Campuses do not prepare these cost rate studies annually. Among UC campuses, the most recent studies ranged from 2009-10 to 2015-16.
- Campus financial data collected by the University of California Office of the President does not allow for the consistent identification of some campus-level expenditures that are excluded from those proposals but which NACUBO directs institutions to add back for purposes of applying its formula. In particular, it is not possible to reliably include expenditures classified by NACUBO as “institutional and community costs” when applying the NACUBO methodology. As a result, it is possible that certain cost estimates in this report may be slightly lower than if these expenditures had been included as expenditures for instruction.

The NACUBO methodology presents a framework for calculating the cost of instruction but relies on institutions to make various decisions as they apply that framework. At a fundamental level, it relies on the use of expenditure data from campus step-down schedules. Expenditures shown in the step-down schedules are divided by student enrollment, weighted according to student type. Student weighting is intended to recognize the increased costs associated with instruction for certain groups, particularly graduate students. (NACUBO suggests a weighting of 1.25 for graduates compared to 1 for undergraduates, but acknowledges that research universities may find it appropriate to use a higher

weighting.) The costs divided by weighted student enrollment is then multiplied by the weight of each student type to determine the estimated costs for that type of student.

The NACUBO methodology does not provide direction on how to distinguish costs by health sciences, research, STEM, or fund sources, all of which are required reporting categories under Section 92670. Consequently, in order to meet these requirements, the University adapted the NACUBO methodology when necessary, but in a manner that was consistently applied across all campuses.

NACUBO believes that its methodology allows an institution to make meaningful and helpful comparisons of expenditures over time. Recognizing that different institutions may make different decisions in interpreting and applying its methodology, however, NACUBO cautions that the methodology "...was not designed to be a mechanism for collecting national data on college costs or creating industry benchmarks."

IV. UC's Application of the NACUBO Methodology

Baseline Costs

Consistent with the NACUBO methodology, calculations in this report are based upon the latest available step-down schedules for each campus. Because these are only updated every few years, the schedules for some campuses are several years old, ranging from FY 2009-10 to FY 2015-16 across the system.

To bring each step-down schedule up to date and make them comparable to 2016-17 student totals, expenditures for the Instruction and Research categories are replaced with the total expenditures by function for Instruction and Research, respectively, from actual FY 2016-17 financial statements. The attendant costs (i.e., Departmental Administration, Student Services, Library, Operations and Maintenance, Facilities Depreciation, Equipment Depreciation, and General Administration) are proportionally adjusted to reflect the change in the main Instruction or Research expenditures from the original schedule to the latest financials. For instance, if expenditures in the Instruction function increased by 20% when replacing FY 2009-10 values in the step-down schedule with FY 2016-17 values from actuals, then Library costs would also go up by 20%. The relationship between those expenditures and the indirect costs are maintained and scaled appropriately.

While the substitution of the most recent Instruction and Research costs and the assumption of a linear relationship with indirect costs may be imperfect, this method preserves some reliance on the step-down schedules as required under NACUBO while accounting for inflationary and enrollment-related increases to campus expenditures, and captures all Instruction and Research costs rather than just the amounts used in the step-down schedules. A visual representation of the University's application of the NACUBO methodology can be found in Appendix 3.

General Campus vs. Health Sciences

Once the adjusted schedules are created, costs need to be identified as either general campus or health science, as well as either STEM or non-STEM. Since the NACUBO methodology provides no guidance for

isolating costs related to these categories, FY 2016-17 campus financial data are used to make this distinction. To split Instruction costs, expenses from all the direct student cost functions (i.e., Instruction and Student Services) are summed, and data from the University's Corporate Financial System (CFS) are used to determine what portion of those expenses are general campus or health science. The resulting split is then applied to the adjusted Instruction schedule. The same method is applied to the Research schedule based upon the share of research expenditures that are attributable to general campus or health science in the CFS.

STEM/Non-STEM

All costs associated with health sciences are presumed to be STEM. To classify the general campus share of costs into STEM and non-STEM categories, each line of the general campus portion of the adjusted schedule is multiplied by a STEM factor. For the Instruction, Departmental Administration, Student Services, Library, and General Administration categories, the STEM factor is based upon the portion of a campus' total student credit hours (SCH) that are deemed STEM-related. For the other categories of Operations and Maintenance, Facilities Depreciation, and Equipment Depreciation, a higher capital factor is utilized to recognize the increased costs of capital for STEM instruction and research.

Research Addition

Research expenditures require an additional level of reduction to recognize that not all expenditures in the Research function are related to students. To determine what portion of research costs to attribute to graduate students, UC compared the actual costs in the Instruction function in FY 2016-17 for graduate students (overall instruction costs multiplied by the portion associated with graduates, based on total SCH) to the total spending in all of the University's core functions of Instruction, Research, and Public Service. This yields a reduction factor that attributes less than a quarter of expenditures in Research to graduates systemwide. The overall adjusted Research schedule is reduced to only reflect this portion.

Weighted Students

SCH data submitted by campuses include the type of instructor (ladder-ranked faculty, lecturer, etc.) and type of student (undergraduate vs. graduate) for each credit hour. Paired with the total fiscal year salary costs for each type of instructor, the University was able to calculate an average cost per SCH for graduate and undergraduate students.

Comparing these two costs per SCH, UC developed a ratio of graduate to undergraduate credit hours. This ratio was utilized to weight the graduates relative to the undergraduates. In general, graduate SCH are more expensive than undergraduate SCH since they require higher level and more expensive faculty to teach them, often in smaller class sizes.

This weighting was not necessary for the health sciences because those expenditures have been isolated and only apply to graduate health sciences students in this exercise.

Cost per Student

Finally, the total Instruction costs can be divided by weighted students in the appropriate groupings (general campus and STEM) to yield a base instruction cost per student.

- **Undergraduates:** Base individual cost plus a financial aid component based on per student financial aid expenditure data.
- **General campus graduate students:** Base individual cost multiplied by the weighting factor developed to compare graduate and undergraduate SCH, plus a financial aid component based upon the average financial aid provided to a graduate general campus student. Also include an add-on for research costs, which is the adjusted and discounted research schedule expenditures divided by total actual general campus graduate enrollment.
- **Health sciences graduate students:** The health sciences portion of instruction costs is divided by the total graduate health sciences students. Average per student financial aid costs are added, as well as a research component based on the portion of discounted research applicable to health sciences divided by graduate health sciences enrollment.

Fund Source

Once the estimated total cost for each student type and subgroup is determined, those costs are split by fund source, utilizing FY 2016-17 financial data as a basis. For instruction costs, expenditures under the functions of Instruction and Student Services are categorized as coming from state funds, nonresident tuition, other general funds, student tuition and fees, or all other funds. The same process applies for research costs using just the Research function. Expenditures attributed to a particular fund source reflect several factors, including the proportion of revenue from that fund source relative to other core fund sources and any applicable fund restrictions.

V. Expenditures for Instruction vs. Cost of Education

While this report is focused on what the University is actually spending on instruction, it is important to recognize that actual expenditures on instruction do not represent the cost of educating students – i.e., what the University should be spending to support its core academic programs. Several indicators highlight this point:

- **A rising student-faculty ratio.** The University's current budgeted student-faculty ratio as agreed to with the State is 18.7:1. In contrast, the actual ratio in 2016-17 was an all-time high of 21.3, due primarily to the one-year increase of 12,424 in total enrollment.
- **A market gap in faculty salaries.** A 2014 total remuneration study of UC general campus ladder-rank faculty conducted by independent consultants concluded that salary and benefits for UC ladder rank faculty lagged the market by 10%. This gap narrowed somewhat in 2016-17, with faculty salaries across the UC system lagging the market by an average of 8.4%.

- **Graduate student support.** A systemwide survey conducted in spring 2017 indicated that the net stipend offered by UC to students admitted to its academic doctoral programs lagged offers from students' top-choice, non-UC institutions by an average of about \$700.
- **Instructional equipment and technology.** Investments above current levels are needed to keep pace with the equipment and technology that are essential to preparing students to meet the workforce needs of a technology-driven modern economy.
- **Building maintenance.** UC maintains more than 68 million square feet of space eligible for State supported maintenance, nearly 60% of which was constructed more than 30 years ago. Maintenance costs increase as facilities age. Similarly, as programmatic needs evolve, UC must maintain an increasing proportion of facilities with complex mechanical systems to support instructional programs focused on STEM disciplines. These facilities are also more expensive to maintain than ordinary classroom facilities.

VI. Appendix 1: Campus Expenditure Tables

Display 1: Undergraduate Expenditures for Instruction

	Systemwide	Berkeley	Davis	Irvine	Los Angeles	Merced	Riverside	San Diego	San Francisco	Santa Barbara	Santa Cruz
Undergraduates	\$ 27,120	\$ 33,896	\$ 28,967	\$ 23,681	\$ 30,933	\$ 27,636	\$ 23,208	\$ 23,024	\$ -	\$ 23,039	\$ 25,166
State Funds	7,236	7,463	7,548	6,035	7,182	11,400	7,523	6,204		5,400	6,902
NRT	2,575	4,317	2,631	3,044	3,475	284	744	3,547		2,093	1,626
Other GF	1,137	194	1,103	246	898	856	620	198		675	1,273
Stud Tuition & Fees	10,662	13,955	11,760	9,376	11,156	9,380	10,633	9,767		11,240	12,161
All Other Funds	5,510	7,968	5,924	4,980	8,223	5,715	3,688	3,309		3,630	3,203
STEM UG	\$ 27,818	\$ 34,980	\$ 30,619	\$ 24,248	\$ 31,560	\$ 28,396	\$ 24,774	\$ 23,233	\$ -	\$ 23,504	\$ 25,483
State Funds	7,462	7,744	8,071	6,210	7,353	11,806	8,167	6,273		5,533	7,013
NRT	2,657	4,484	2,817	3,134	3,560	293	808	3,587		2,146	1,653
Other GF	1,173	201	1,181	253	919	887	673	200		692	1,294
Stud Tuition & Fees	10,892	14,346	12,331	9,565	11,344	9,562	11,260	9,843		11,448	12,298
All Other Funds	5,634	8,206	6,219	5,086	8,384	5,847	3,866	3,331		3,685	3,225
Non-STEM UG	\$ 26,639	\$ 33,208	\$ 27,694	\$ 23,267	\$ 30,570	\$ 26,980	\$ 22,259	\$ 22,814	\$ -	\$ 22,836	\$ 24,905
State Funds	7,080	7,284	7,146	5,907	7,083	11,050	7,133	6,135		5,342	6,811
NRT	2,518	4,211	2,488	2,978	3,426	276	706	3,506		2,070	1,604
Other GF	1,112	189	1,043	241	885	830	587	196		668	1,256
Stud Tuition & Fees	10,503	13,707	11,321	9,238	11,047	9,224	10,253	9,690		11,150	12,049
All Other Funds	5,425	7,817	5,696	4,903	8,130	5,601	3,580	3,288		3,606	3,185

Display 2: Graduate Expenditures for Instruction (General Campus Only)

	Systemwide	Berkeley	Davis	Irvine	Los Angeles	Merced	Riverside	San Diego	San Francisco	Santa Barbara	Santa Cruz
Graduates - General Campus + Research	\$ 67,422	\$ 79,393	\$ 70,921	\$ 64,010	\$ 68,494	\$ 75,697	\$ 60,930	\$ 60,989		\$ 65,310	\$ 54,272
State Funds	11,470	10,744	12,079	10,233	10,991	23,384	12,725	10,598		9,073	10,404
NRT	3,969	5,958	4,101	5,008	5,120	615	1,265	5,896		3,387	2,413
Other GF	1,753	292	1,720	421	1,334	1,747	1,036	344		1,099	1,877
Stud Tuition & Fees	24,329	28,747	26,243	22,174	25,597	25,299	24,303	22,331		26,225	23,258
All Other Funds	25,901	33,652	26,776	26,174	25,453	24,653	21,602	21,820		25,526	16,320
STEM Grad GC + Research	\$ 70,124	\$ 83,851	\$ 76,428	\$ 66,579	\$ 70,265	\$ 80,930	\$ 65,225	\$ 62,100	\$ -	\$ 66,640	\$ 54,849
State Funds	11,887	11,219	13,044	10,590	11,264	25,015	13,868	10,747		9,291	10,564
NRT	4,120	6,240	4,444	5,192	5,255	652	1,377	5,984		3,473	2,452
Other GF	1,820	304	1,864	435	1,368	1,870	1,131	349		1,127	1,908
Stud Tuition & Fees	24,754	29,408	27,297	22,560	25,896	26,028	25,416	22,498		26,567	23,455
All Other Funds	27,543	36,679	29,778	27,803	26,482	27,365	23,433	22,522		26,182	16,470
Non-STEM Grad GC + Research	\$ 65,298	\$ 76,424	\$ 66,635	\$ 61,998	\$ 67,425	\$ 71,815	\$ 57,405	\$ 59,491	\$ -	\$ 64,470	\$ 53,711
State Funds	11,167	10,436	11,333	9,965	10,832	22,131	11,908	10,425		8,969	10,267
NRT	3,859	5,776	3,836	4,869	5,042	586	1,184	5,795		3,345	2,380
Other GF	1,704	284	1,609	410	1,313	1,652	968	339		1,086	1,852
Stud Tuition & Fees	24,019	28,320	25,428	21,883	25,422	24,738	23,508	22,138		26,062	23,091
All Other Funds	24,549	31,608	24,430	24,871	24,816	22,707	19,838	20,794		25,008	16,121

Display 3: Graduate Expenditures for Instruction (Health Sciences)

	Systemwide	Berkeley	Davis	Irvine	Los Angeles	Merced	Riverside	San Diego	San Francisco	Santa Barbara	Santa Cruz
Graduates - Health Sciences + Research	\$ 218,325	\$ 97,436	\$ 218,344	\$ 314,080	\$ 169,850		\$ 215,730	\$ 352,082	\$ 194,024		
State Funds	21,410	16,523	21,927	16,424	19,257		37,668	41,381	20,353		
NRT	7,652	9,548	7,715	8,380	9,357		3,720	24,036	356		
Other GF	3,380	430	3,233	667	2,415		3,122	1,304	310		
Stud Tuition & Fees	29,334	31,284	29,369	21,620	28,245		43,847	51,933	19,907		
All Other Funds	156,549	39,651	156,100	266,989	110,576		127,373	233,427	153,098		

VII. Appendix 2: Education Code Section 92670

ARTICLE 7.5. Expenditures for Undergraduate and Graduate Instruction and Research Activities

92670. (a) (1) It is the intent of the Legislature, in enacting this section, to ensure that the Legislature has accurate information upon which to base funding decisions relating to the University of California.

(2) The University of California shall report biennially to the Legislature and the Department of Finance, on or before October 1, 2014, and on or before October 1 of each even-numbered year thereafter, on the total costs of education at the University of California. The amounts included in the reports required by this section shall be based on publicly available information.

(b) The report shall identify the costs of undergraduate education, graduate academic education, graduate professional education, and research activities. All four categories listed in this subdivision shall be reported in total and disaggregated separately by health sciences disciplines, disciplines included in paragraph (13) of subdivision (b) of Section 92675, and all other disciplines. For purposes of this report, research for which a student earns credit toward his or her degree program shall be identified as undergraduate education or graduate education.

(c) The costs reported in the reports required by this section shall be prior year actual expenditures, and shall also be reported by fund source, including all of the following:

(1) State General Fund.

(2) Systemwide tuition and fees.

(3) Nonresident tuition and fees and other student fees.

(4) University of California General Funds, including interest on General Fund balances and the portion of indirect cost recovery and patent royalty income used for core educational purposes.

(d) For any report submitted under this section before January 1, 2017, the costs shall, at a minimum, be reported on a systemwide basis. For any report submitted under this section on or after January 1, 2017, the costs shall be reported on both a systemwide and campus-by-campus basis.

(e) A report prepared under this section on or after January 1, 2017, shall include information on costs, disaggregated by campus, based on the methodology developed by the National Association of College and University Business Officers in its February 2002 report, *Explaining College Costs*, and other methodologies determined by the university.

(f) A report to be submitted to the Legislature pursuant to this section shall be submitted in compliance with Section 9795 of the Government Code.

(g) Pursuant to Section 10231.5 of the Government Code, the requirement for submitting a report under this section shall be inoperative on January 1, 2023, pursuant to Section 10231.5 of the Government Code.

(Amended by Stats. 2017, Ch. 802, Sec. 2. (AB 1655) Effective January 1, 2018.)

VIII. Appendix 3: EFI Calculation Flow Chart

