Contracts & Grants FY 2016-17 Funding Report

Is a six-billion-dollar year the new normal?

Summary

For the second fiscal year in a row, UC's award total exceeded $6 billion. During 2016-17, awards from all sources came to $6.08 billion, about one percent above last year. Federal funding for the year of $3.3 billion was essentially the same as last year; however, the Q4 federal total of $959 million represented a decline of $106 million compared to Q4 last year.

This 10% quarterly drop in federal funding spanned most of UC's major agency sponsors, including the National Institutes of Health (NIH), and the National Science Foundation (NSF), among others. But this may have more to do with timing and processing issues than with policy or with the current federal budget debates. There is one quarter left in the federal fiscal year, and that is when federal agency awards reach their peak. Federal agencies are still working with the appropriation levels set by the 2015 Budget Bill, which stabilized agency funding for two federal fiscal years — 2016 and 2017 — with provisions for modest increases at NIH and a few other agencies for the second year. It is still likely that agency funding for the full federal fiscal year will turn out to be a few percentage points above last year

Federal funding for 2018, however, remains uncertain. The year will begin with the government operating for at least three months under a Continuing Resolution (CR), which essentially maintains spending at last year's levels until Congress passes a new budget—hopefully in December. Federal agencies vary in how they respond to the uncertainty of a CR. NIH generally holds back 10% of all grants under these conditions; however, Congress has signaled a likely increase for NIH of $1.1 billion (House) to $2 billion (Senate) for 2018, so any reductions the agency imposes would be temporary. NSF, on the other hand, expects a cut in appropriations of about 2%, so their response to the CR may be more conservative.

The shape of the budget that Congress eventually passes is a matter of active debate. The President's budget, released in May, calls for drastic decreases in agency appropriations for academic research and related programs. Congress has pushed back on some of these proposed cuts—most notably the medical research programs funded by NIH. But the fate of other funding areas, such as environmental and climate science programs, remains in doubt.

For more information and analysis

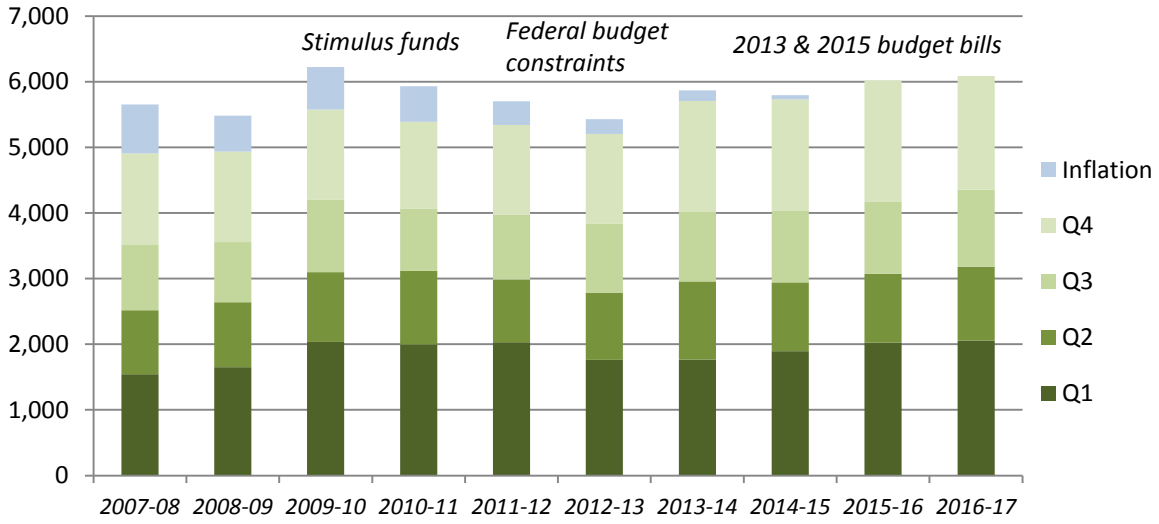
Research awards generally constitute 80% or more of UC's annual award total. For more detailed information about research sponsorship, an interactive data visualization showing UC's research award history since 2001 is available online. Additional information on research activities at UC is also available on the UC Information Center. Also available in the Research section of the UCOP Institutional Research and Academic Planning website is a series of Topic Briefs presenting detailed analysis of recent trends in UC's federal, state, corporate and non-profit funding.

I. Yearly and quarterly award totals

Award funding from all sources during 2016-17 came to $6.08 billion, 1.1% more than last year. Awards for Q416, however, totaled $1.73 billion, about $110 million below the Q4 total last year, due almost entirely to a $106 million decline in federal agency awards. Reviewing the last ten years of award funding demonstrates the impact of the federal budget process on UC's sponsored projects. When inflation is taken into account, it becomes apparent that the stimulus funds provided by the Recovery Act, followed by the constraints of the Sequester, resulted in a boom-and-bust cycle in federal and total award funding. The budget bills of 2013 and 2015 have brought a few years of relative stability to UC's award funding. Congressional budget debates this coming December will, once again, have a major impact on UC's award totals.

FY Extramural awards, 2007-08 to 2016-17

$ millions, inflation-adjusted



Quarterly Extramural Awards

$ millions, inflation-adjusted

	FY08	*FY09*	*FY10*	*FY11*	*FY12*	*FY13*	*FY14*	*FY15*	*FY16*	*FY17*
Q1	1,778	1,832	2,275	2,197	2,166	1,840	1,816	1,917	2,025	2,054
Q2	1,119	1,100	1,187	1,232	1,023	1,068	1,224	1,058	1,048	1,125
Q3	1,148	1,015	1,228	1,044	1,049	1,090	1,098	1,107	1,102	1,178
Q4	1,606	1,535	1,535	1,456	1,461	1,432	1,731	1,712	1,843	1,727
FY	***5,651***	***5,482***	***6,225***	***5,928***	***5,699***	***5,430***	***5,869***	***5,795***	***6,017***	***6,084***

Award totals for UC's third fiscal quarters are always well below the first-quarter amounts. This is a function of the federal funding cycle, which awards the largest amounts in the final quarter of the federal fiscal year (corresponding to UC's Q1).

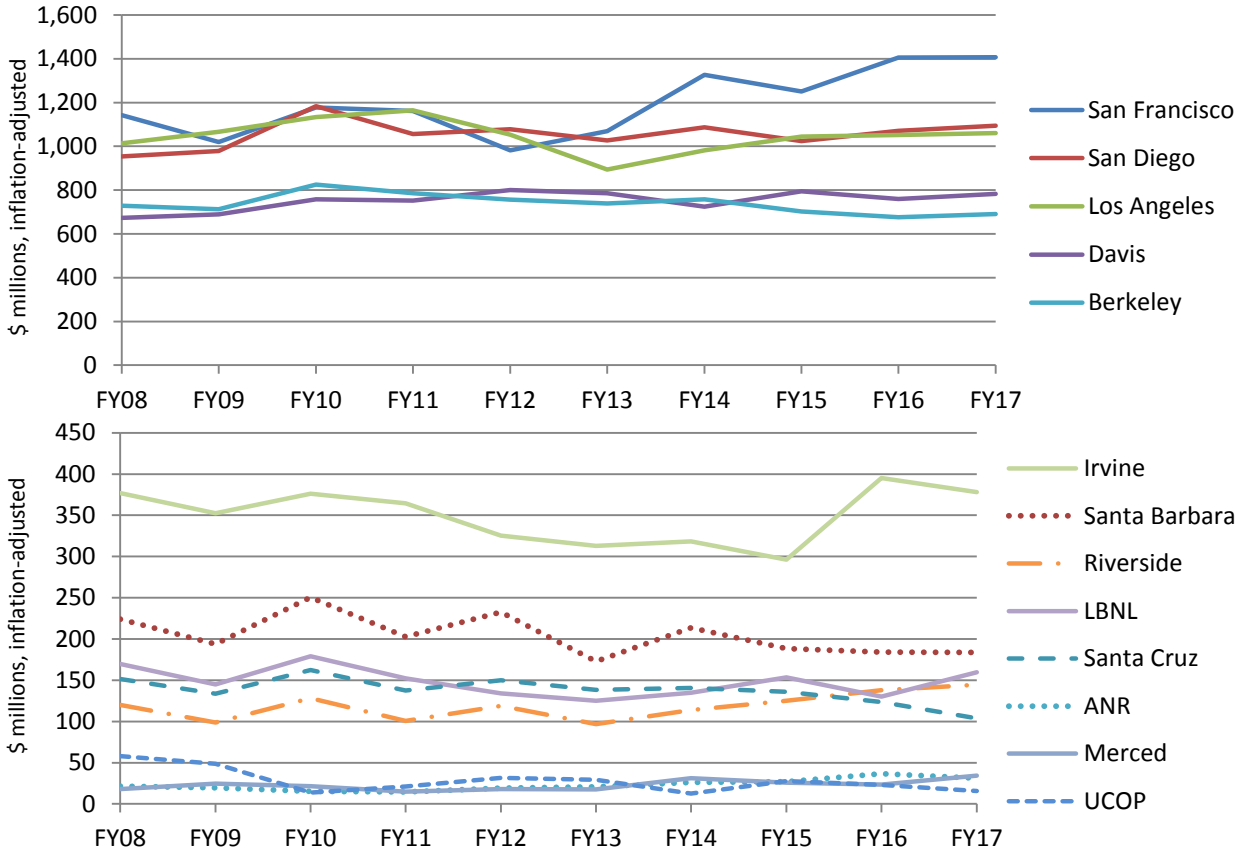
II. Award trends by recipient location

Award totals for FY 2016-17 are about 1.1% above last year. This increase was not evenly divided across reporting locations.

FY Awards by Location

$ millions, inflation-adjusted

UC Location	*FY 2015*	*FY 2016*	*FY 2017*	*Change from FY20 16*
San Francisco	1,250	1,405	1,406	0.1%
San Diego	1,023	1,070	1,094	2.2%
Los Angeles	1,045	1,051	1,060	0.9%
Davis	794	760	783	3.0%
Berkeley	702	676	690	2.1%
Irvine	296	395	378	-4.4%
Santa Barbara	188	184	184	-0.2%
Riverside	125	138	144	4.6%
LBNL	154	130	160	22.7%
Santa Cruz	136	124	104	-16.1%
Merced	26	24	34	44.9%
UCOP	28	23	16	-32.3%
Ag & Nat Res	27	37	31	-14.7%
Total	***5,795***	***6,017***	***6,084***	***1.1%***



III. Award trends by sponsor category

Despite quarterly variations, yearly inflation-adjusted totals for federal funding over the past four years have been relatively stable, at about $3.3 billion. During this period, award totals from non-federal sponsors have increased. The federal percentage of the total has dropped from 58.9% in 2007-08 to 54.6% in 2016-17.

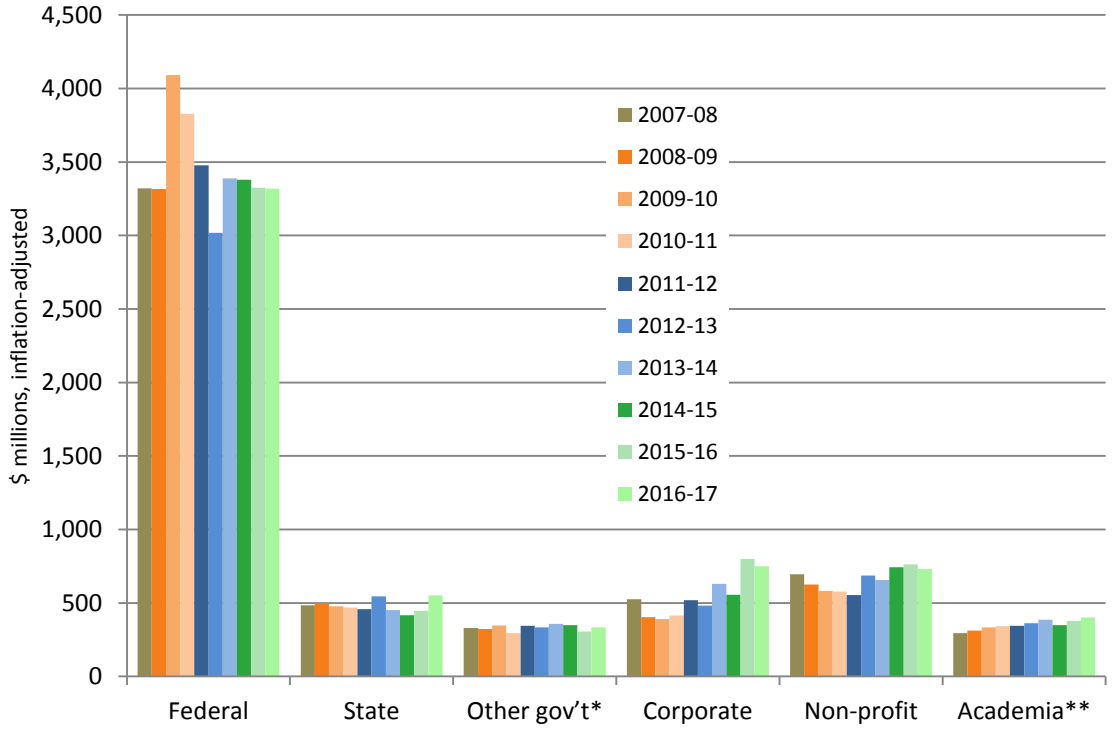
Awards by Sponsor Category, 2007-08 to 2016-17

$ millions, inflation-adjusted

SPONSOR	*FY08*	*FY09*	*FY10*	*FY11*	*FY12*	*FY13*	*FY14*	*FY15*	*FY16*	*FY17*
Federal	*3,321*	3,316	4,092	3,828	3,477	3,018	3,388	3,380	3,326	3,319
State	*485*	500	478	468	457	546	451	417	448	551
*Other gov't**	*329*	323	348	296	346	334	357	348	305	333
Corporate	*526*	403	390	414	520	482	630	557	799	750
Non-Profit	*695*	626	583	579	555	686	657	743	762	730
*Academia***	*295*	313	335	344	345	363	386	350	377	401
TOTAL	***5,651***	***5,482***	***6,225***	***5,928***	***5,699***	***5,430***	***5,869***	***5,795***	***6,017***	***6,084***

** Other gov't includes Agricultural Market Order Boards.*
***Academia includes the categories of higher education, DOE Labs, campuses and UCOP.*

Funding by sponsor category, 2007-08 to 2016-17



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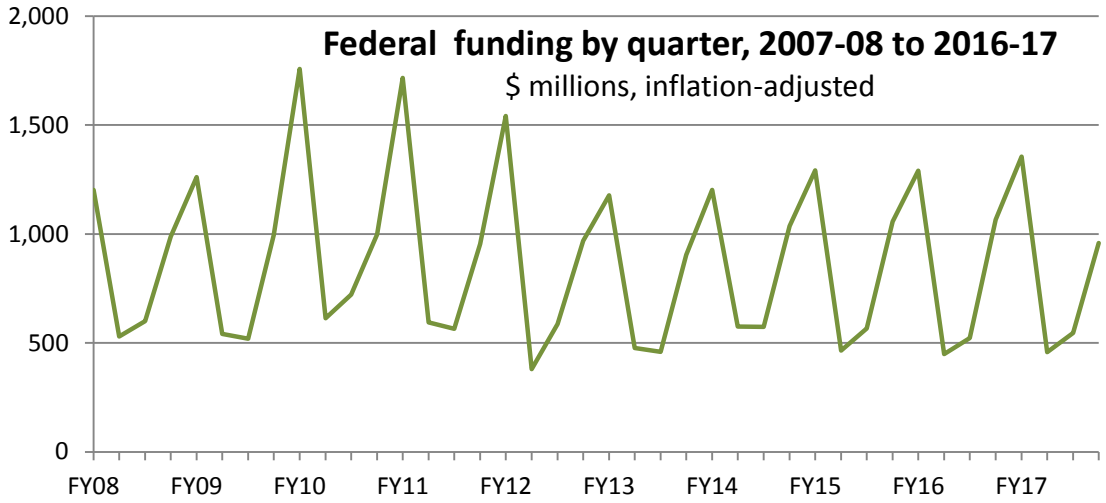
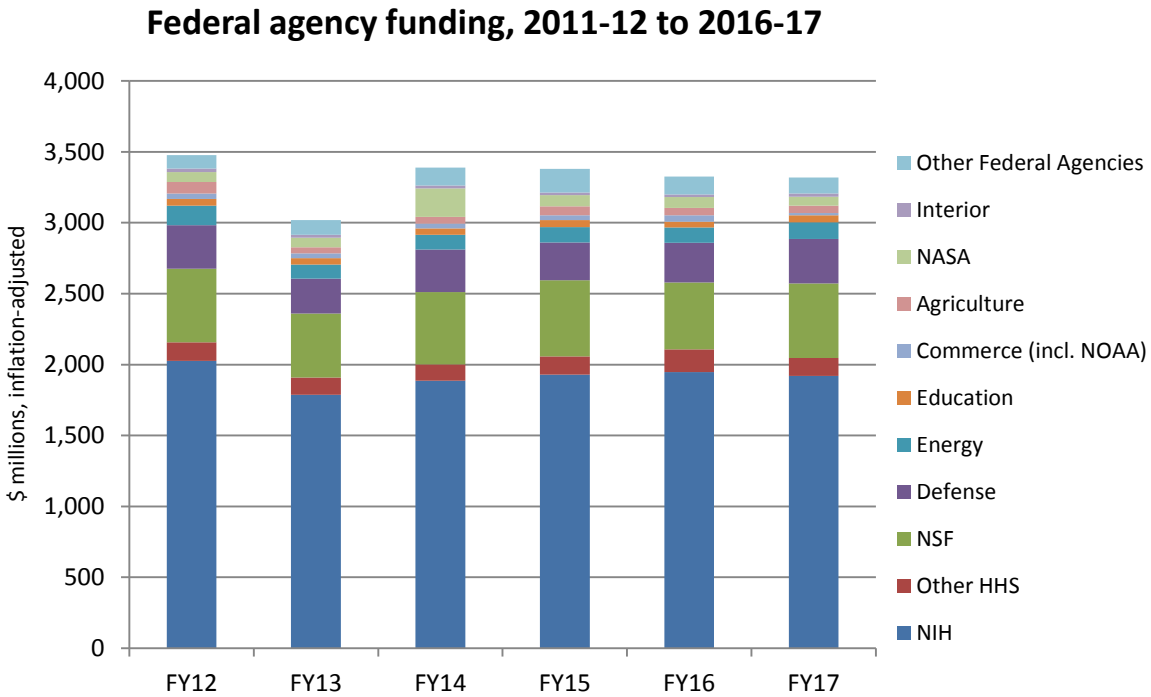
IV. Federal Funding

UC's federal funding is closely tied to budget appropriations, and each yearly budget cycle initiates a new round of proposals, reviews, award notifications and funding obligations. The result of this yearly cycle is a sharp spike in the dollar volume of awards during the final two quarters of the federal fiscal year, which correspond to Q4 of one UC fiscal year and Q1 of the next year.



UC's two largest sources of federal funding are the National Institutes of Health and the National Science Foundation. Both agencies have provided stable funding over the last four years.



AGENCY	FY12	FY13	FY14	FY15	FY16	FY17	% change
NIH	2,026	1,788	1,887	1,929	1,946	1,920	-1.3%
Other HHS	130	121	114	129	160	125	-22.0%
NSF	520	452	511	536	472	527	11.7%
Defense	308	245	300	265	279	313	12.3%
Energy	136	99	102	108	108	117	8.2%
Education	48	46	46	50	41	49	19.5%
Commerce (incl. NOAA)	38	33	33	35	46	15	-66.5%
Agriculture	82	44	47	64	52	53	1.8%
NASA	70	67	201	78	77	63	-18.5%
Interior	25	20	20	20	18	23	29.9%
Other Federal Agencies	94	104	126	166	126	112	-11.3%
TOTAL	***3,477***	***3,018***	***3,388***	***3,380***	***3,326***	***3,319***	***-0.2%***

In addition to the $3.3 billion that federal agencies provided directly, UC also received over $700 million in federal flow-through funds as subawards from non-federal sponsors with agency sponsors. Most of the project funding that UC receives from other research universities originated with the federal government, as well as a significant fraction of the funds from the state and non-profit organizations. Flow-through funds bring the true total of federal funding to over $4 billion, or two-thirds of UC's total.

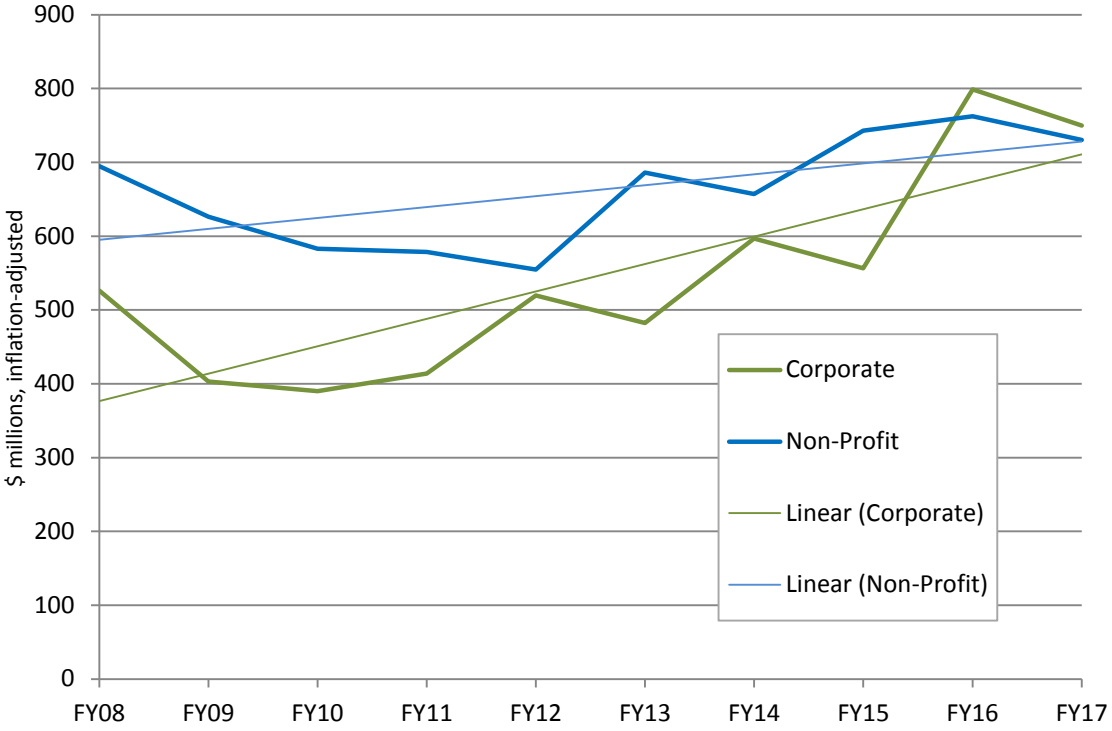
Flow-through funds by sponsor category, 2016-17

Sponsor	*Flow-through $*	*Award total*	*% of total*
State	160	551	29.06%
Other gov't.	22	175	12.74%
Business	62	750	8.25%
Non-profit	137	731	18.71%
Higher ed	271	373	72.67%
DOE Labs	7	10	71.79%
Campuses/OP	46	176	25.95%
Total	***705***	***2,766***	***25.48%***

V. Private funding

While awards from both corporate and non-profit sponsors display much variation quarter by quarter, both sponsor categories show long-term increases. Annual variations in corporate and nonprofit funding are most often the result of a few extremely large research contracts, or even a single mega-award.

Corporate and Non-Profit Sponsorship, FY 2007-8 to 2016-17



VI. Award trends by project type

Awards for research during FY 2016-17 amounted to $4.48 billion, plus $489 million in clinical trial sponsorship, or nearly $5 billion for all types of research. Training, service and other awards came to about $1.1 billion.

FY Award funding by project type, FY 2007-08 to 2016-17

$ millions, inflation-adjusted

PROJECT TYPE	***FY08***	***FY09***	***FY10***	***FY11***	***FY12***	***FY13***	***FY14***	***FY15***	***FY16***	***FY17***
Research	4,299	4,134	4,894	4,601	4,521	4,066	4,406	4,435	4,453	4,478
Clinical Trials	229	184	207	192	235	315	411	327	511	489
Training	375	341	371	374	331	283	285	287	303	289
Service	360	445	373	380	331	413	434	379	440	440
Other	388	377	380	382	281	353	334	367	311	388
TOTAL	***5,651***	***5,482***	***6,225***	***5,928***	***5,699***	***5,430***	***5,869***	***5,795***	***6,017***	***6,084***

VII. Significant awards to UC

During 2016-17, UC received about 27,000 contracts and grants from over 3,300 different sponsors (in addition to more than 5,000 Material Transfer Agreements). Listed below are large or significant awards reported this quarter by campuses, Agriculture & Natural Resources, the Office of the President and Lawrence Berkeley National Lab. The majority of these major awards support programs or centers, rather than individual research projects.

LOCATION	SPONSOR CATEGORY	SPONSOR	PROJECT TITLE	AMOUNT
Agriculture and Natural Resources	State	California Department of Public Health	Obesity Prevention Evaluation and Research	$2,700,000
Berkeley	State	California Department of Social Services, originating from the federal Health and Human Services Agency	Title IV-E Statewide Social Work Training Program	$80,000,000
Davis	State	California Department of Transportation	Pavement Research Center (in partnership with Berkeley)	$29,600,000
Irvine	State	California Energy Commission	California Natural Gas Vehicle Incentive Program	$12,600,000
Lawrence Berkeley Lab	Federal	National Cancer Institute	Structural Cell Biology of DNA Repair Machines	$2,900,000
Los Angeles	Federal	National Cancer Institute	AIDS Malignancy Consortium (AMC)	$21,600,000
Merced	Federal	National Science Foundation	Intelligent Adaptive Systems: Training Computational and Data-Analytic Skills for Academia and Industry	$2,900,000
Office of the President	State	California Community Colleges Chancellor's Office	Partnership Proposal: Increasing UC Student Equity and Diversity by Supporting California Community College Students, Counselors, Faculty	$2,600,000
Riverside	Federal	Defense Advanced Research Projects Agency (DARPA)	Safely Engineering Various Classes of Gene Drives to Control a Major Invasive Disease Vector AE Aegypti	$4,200,000
San Diego	Federal	Office of Naval Research	Scripps Institution of Oceanography Mid-Life Refit Overhaul of Research Vessel	$23,000,000
San Francisco	State	California Department of Public Health	STD Prevention Training Center	$31,900,000
Santa Barbara	Federal	National Science Foundation	ESTEEM: Enhancing Success in Transfer Education for Engineering Majors	$4,800,000
Santa Cruz	Nonprofit	The Scripps Research Institute	Investigations in Fisheries Ecology	$4,400,000

VIII. The boom in corporate clinical trials

Corporations have historically played an important role in funding UC's research enterprise, and the last few years have seen an increase in both the dollar amount and relative share of corporate funding.

Corporate sponsorship, % of UC award total

Year	*FY08*	*FY09*	*FY10*	*FY11*	*FY12*	*FY13*	*FY14*	*FY15*	*FY16*	*FY17*
$ millions*	526	403	390	414	520	482	597	557	799	750
% UC Total	9.3%	7.4%	6.3%	7.0%	9.1%	8.9%	10.7%	9.6%	13.3%	12.3%

**All amounts are adjusted for inflation*

Much of the growth in corporate funding over the past few years has been fueled by an increase in clinical trials. Corporations fund close to 85% of all the clinical trial projects conducted at UC, and funding for clinical trials represents a growing share of the University's corporate project sponsorship.

Clinical trial awards, % of corporate award total

Year	*FY08*	*FY09*	*FY10*	*FY11*	*FY12*	*FY13*	*FY14*	*FY15*	*FY16*	*FY17*
$ millions	204	167	163	152	205	212	317	288	457	414
Corporate %	38.8%	41.5%	41.8%	36.7%	39.4%	44.0%	53.1%	51.7%	57.2%	55.2%

Since 2007-08, clinical trial funding has increased from under 40% of total corporate funding to over 55%. During this time, not only has the number of clinical trial awards increased, along with the average clinical trial award amount, but the number of sponsors providing these awards has grown larger as well.

Clinical trial awards: counts, average values

Year	*FY08*	*FY09*	*FY10*	*FY11*	*FY12*	*FY13*	*FY14*	*FY15*	*FY16*	*FY17*
# clinical trials*	835	790	840	802	885	781	854	984	1,107	1,063
Average, $K	249	216	197	194	232	273	379	295	415	394

**Counts exclude deobligations.*

The health sector is increasing rapidly in every national economy, and this growth drives demand for new and improved therapies, diagnostics and medical equipment. But health care innovations can only enter the market after clinical trials demonstrate, to the satisfaction of regulatory agencies, that these new treatments and methods are both safe and effective. This process results in long-term partnerships between hospitals with strong research capabilities—such as UC's medical centers—and pharmaceutical companies and medical device manufacturers with new products under development.

Clinical trials occupy a unique position in academic research. Unlike basic or applied research, these projects represent the final stage in the journey from a scientific discovery to an effective treatment. But scientific discoveries that could someday result in new treatments can only emerge from a broad base of basic, biomedical research, much of which is federally funded through the National Institutes of Health.

For now, at least, the medical innovation pipeline that includes government agencies, research universities and private corporations remains intact. NIH's appropriations for biomedical research have been stable for several years and are scheduled to increase; research universities continue to expand the frontiers of medical knowledge and continue to train the next generation of medical researchers; private companies continue to invest in thousands of clinical trials to establish the safety and effectiveness of new drugs and equipment.

Still, this is not a time for the research community to become complacent. Even though Congress has apparently exempted NIH from the cuts to agency appropriations specified in the President's Budget, there has been no similar pushback so far for the massive reductions proposed for environmental and climate science research. The future of many long-term projects depends on which of the President's recommendations Congress decides to approve.

Charles Drucker
Institutional Research
September, 2017