

Contracts & Grants Q413 Award Report

Federal Funding Freefall

Summary

UC's award funding for Q4 of FY 2012-2013 totaled \$1.37 billion, almost exactly the same amount reported for Q4 last year. However, the two quarters differ in the source of funding; during Q4 of FY 2012-13, federal funding fell by \$43 million compared to last year, while increases in state and private sources made up the difference. This changing mix of funding sources continues the pattern that began in the year's first quarter. For FY 2012-13, the federal award total is a staggering \$370 million below the amount awarded during FY 2011-12, a drop of 11.4%. Nearly the entire decline in federal awards is in research sponsorship.

The federal funding falloff, however, is not the entire story for the year. Increases in state and non-profit funding offset nearly all of the federal falloff during Q4 and two-thirds of the drop in federal support for the year as a whole. The award total for FY 2013 from all sources came to \$5.2 billion, which is about \$134 million (2.5%) below last year's total.

With federal R&D appropriations likely to continue for some time at Sequester levels or below, these award amounts raise critical questions about UC's external funding prospects.

- Why is the decline in federal funding so much steeper than the 6 to 7% impact widely predicted for the Sequester?
- What other federal agency funding trends are implicated in the decreased funding, and will they have long-term consequences?
- Which non-federal sponsors are currently offsetting a significant part of the federal shortfall, and how reliable are those funding sources likely to be in the long term?
- If there is to be a lasting shift in sponsorship sources, with greater reliance on non-federal support, how will this change affect UC's research enterprise and the composition of its research workforce?

To gain a broader perspective on these vital funding issues, this Quarterly Award Report considers trends in proposal submission and research expenditures, as well as trend data on awards.

I. Research Award Data Visualization

Research sponsorship generally makes up about 75-80% of the extramural support UC receives each year. The data visualization on the following page provides an interactive view of research funding trends at UC since FY 2000-01. (DOE lab awards are not included here.) Selector buttons allow multiple views of Universitywide and campus data by year, by location and by sponsor category in dynamic bar charts, pie charts and data summary tables. The visualization automatically opens when the page following this one is visible, and closes when the page is no longer on-screen. Right-clicking on the dashboard allows several other viewing options, including full-screen and floating window. (The visualization is in Flash, which may be an issue on some systems.)

University of California Research Awards by Sponsor Category

By Campus

Universitywide

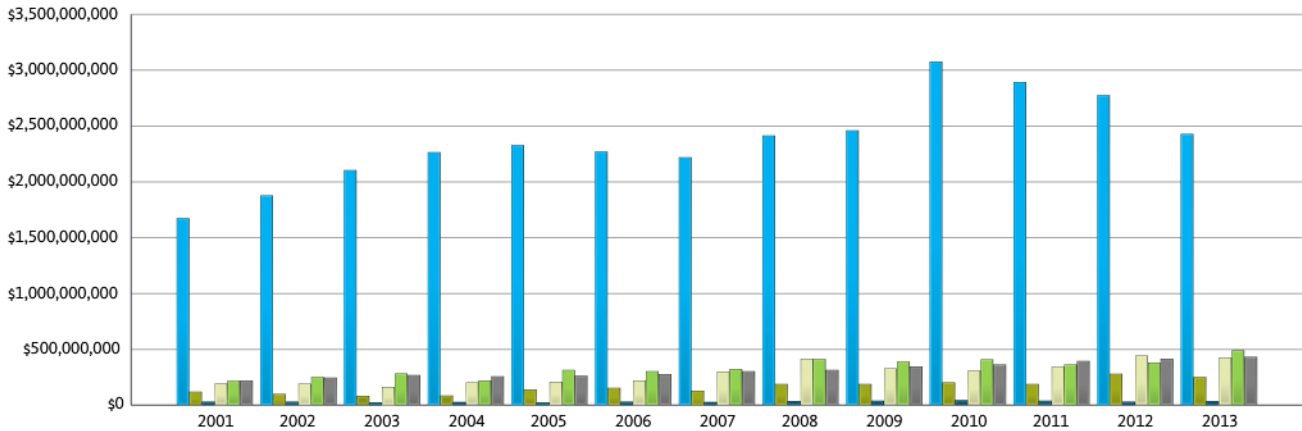
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By Year

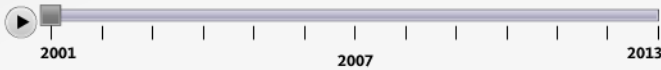
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Select/Deselect Sponsors:

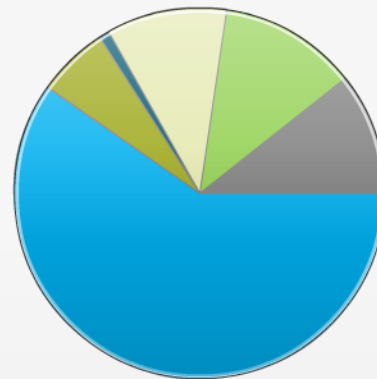
- Federal
 State
 Other Gov't.
 Business
 Non-Profit
 Higher Education



Move slider to select, click arrow to animate:



Universitywide - 2013



- Federal
- State
- Other Gov't.
- Business
- Non-Profit
- Higher Education

Universitywide Total: \$4,070,065,358

View Chart

View Data

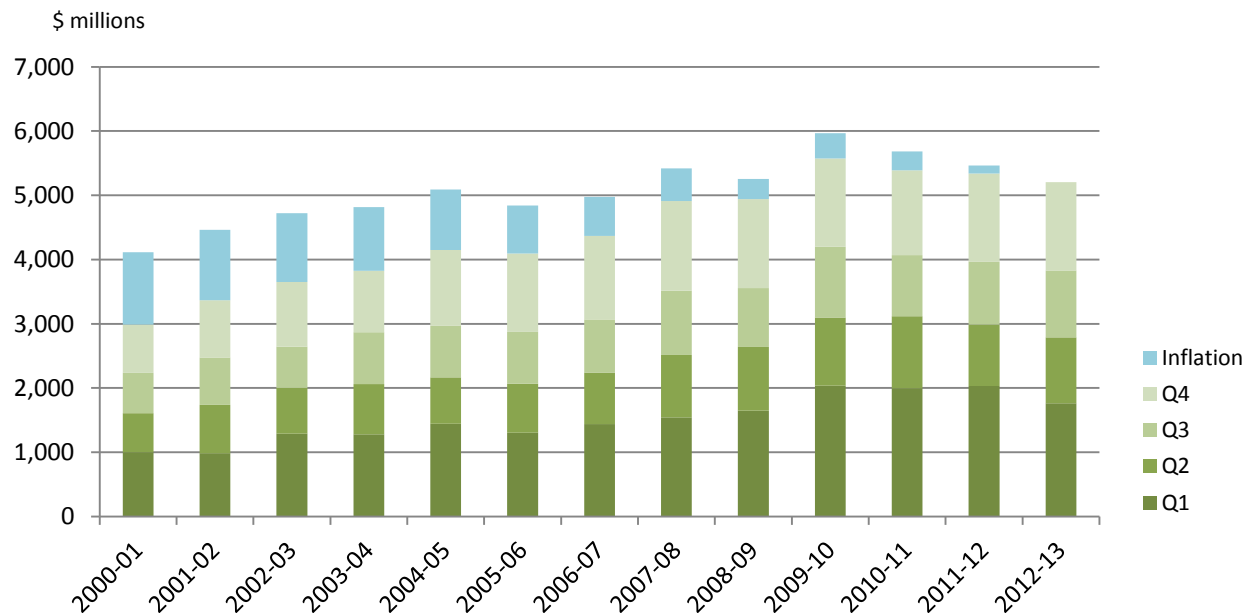


Data source: UC Corporate Financial System, updated 10/2013.

II. Quarterly Performance Metrics

Extramural awards for Q413 totaled about \$1.372 billion, only \$4 million above the amount reported during Q412. This modest increase does not erase the substantial declines reported in previous quarters. For the fiscal year, total funding is \$5.2 billion, which is \$134 million below last year's total, a drop of about 2.5%, not counting inflation.

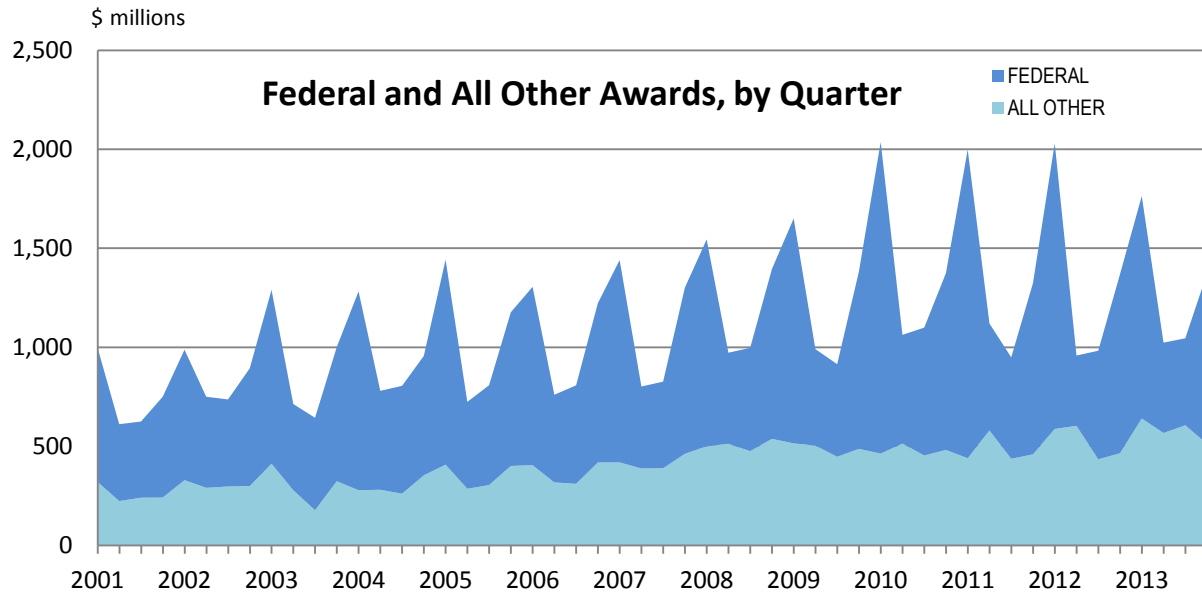
Extramural Awards, Inflation Adjusted



Quarterly Extramural Awards, FY 2001 – 2013 (\$ millions)

PERIOD	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Q1	999	987	1,290	1,282	1,442	1,305	1,440	1,545	1,650	2,037	1,998	2,030	1,763
Q2	612	750	713	780	724	760	802	972	991	1,063	1,120	958	1,023
Q3	625	737	644	805	809	808	826	997	915	1,099	949	982	1,045
Q4	750	894	1,002	956	1,177	1,223	1,301	1,395	1,383	1,374	1,324	1,369	1,373
FY	2,986	3,367	3,649	3,823	4,151	4,096	4,370	4,909	4,938	5,574	5,391	5,340	5,205

Award totals for UC's first and fourth fiscal quarters are always higher than in Q2 and Q3. This is a function of the federal funding cycle, which releases the largest amounts in the final two quarters of the federal fiscal year (corresponding to UC's Q4 and Q1 of the following year). With direct federal sponsorship providing about two-thirds of all UC's awards, this produces sharp quarterly spikes in funding.



III. Award Trends by Sponsor Category

Even though awards from state and private sources during FY 2012-13 were significantly higher than during the previous year, the decline in federal agency support has been so severe that overall funding remains down for the year. Sections VIII and IX of this report examine trends in private and state funding in greater detail.

Direct federal award funding for FY 2013 amounted to \$2.88 billion, or about 55% of the award total, compared to \$3.25 billion last year, which represented 61% of the total. The peak in federal funding during 2010 and 2011 was due principally to Recovery Act (ARRA) awards. For FY 2013, federal funding has dropped below pre-Recovery Act levels, even before inflation is taken into account.

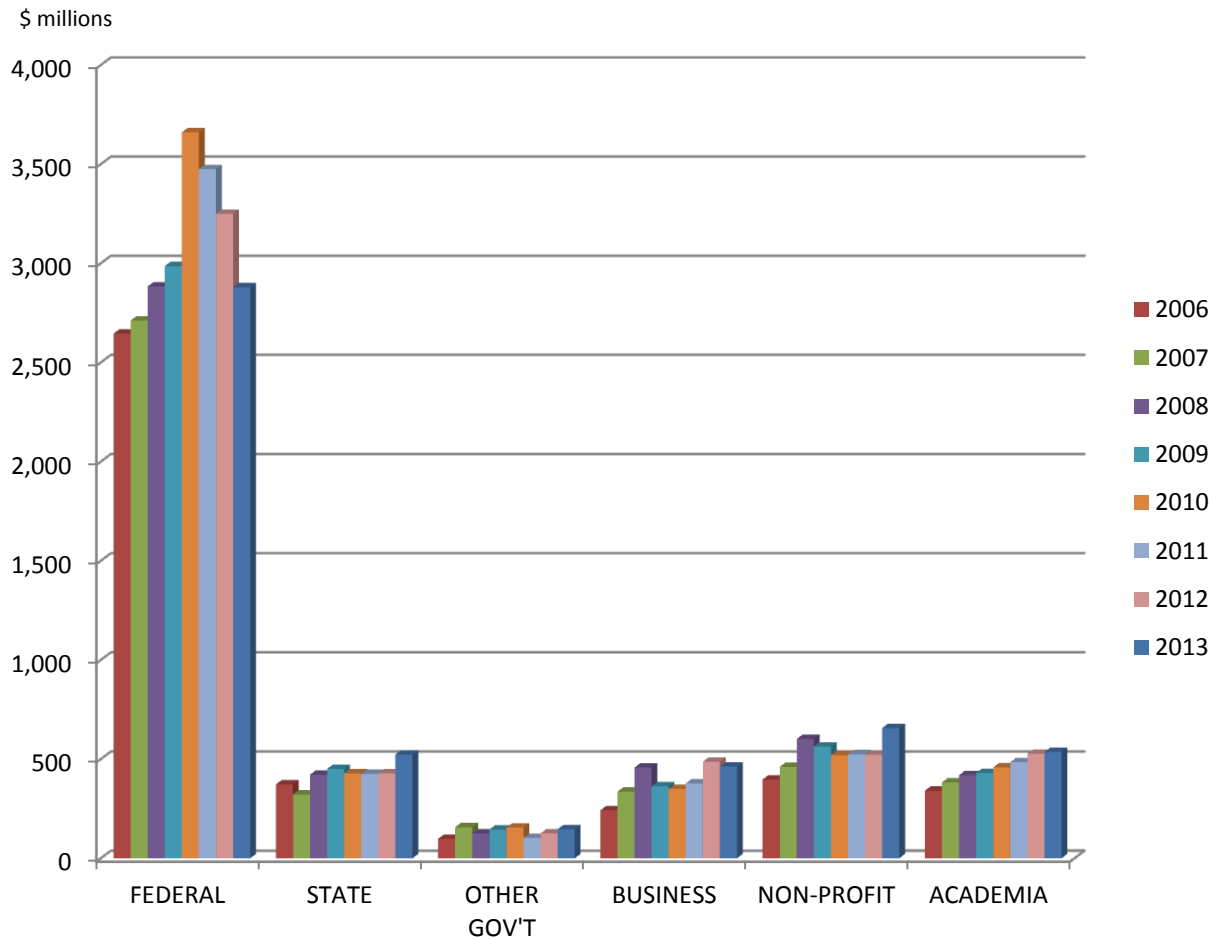
Awards by Sponsor Category, FY 2006-2013 (\$ Millions)

SPONSOR	2006	2007	2008	2009	2010	2011	2012	2013
<i>Federal</i>	2,646	2,712	2,884	2,986	3,661	3,475	3,250	2,880
<i>State</i>	372	322	421	451	428	426	428	523
<i>Other Gov't*</i>	98	157	125	145	155	103	126	147
<i>Business</i>	242	336	458	363	350	377	487	463
<i>Non-Profit</i>	397	461	602	563	520	525	522	656
<i>Academia**</i>	341	383	419	430	459	485	527	536
TOTAL	4,096	4,370	4,909	4,938	5,573	5,391	5,340	5,205

* Other Gov't includes Agricultural Market Order Boards.

**Academia includes the categories of Higher Education, DOE Labs, Campuses and UCOP.

Awards by Sponsor Category, FY 2006 - 2013



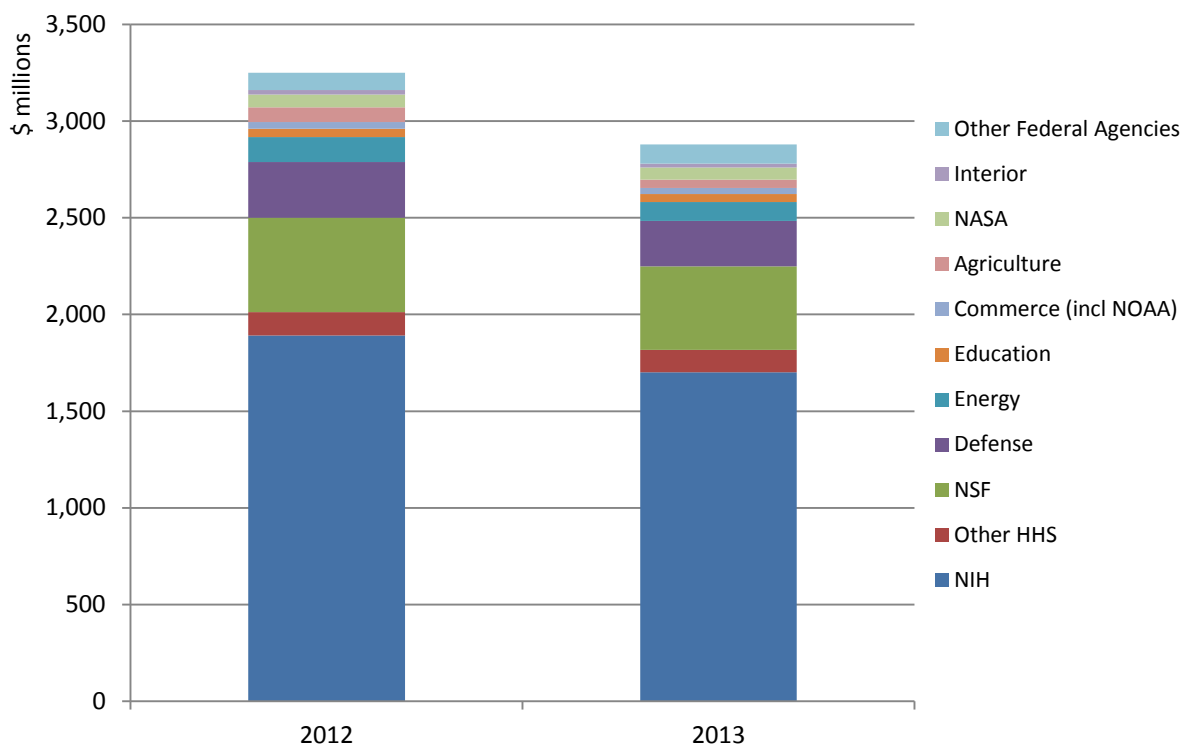
IV. Federal Agency Award Trends

Direct federal funding to UC during Q413 was \$861 million, about \$43 million below the amount reported during Q4 of the previous year. This adds to the continuing saga of the federal funding falloff, which for the 2012-13 fiscal year is \$370 million, or about 11.4%, below the amount awarded during FY 2011-12. The proportionate reduction in federal research sponsorship is slightly greater, at about 12.2%.

This is a much steeper decline than was generally expected from the Sequester. Guidance from federal agencies suggested the decrease in federal support for academic R&D would be on the order of 6 to 7 percent. Moreover, because the Sequester only took formal effect in March of 2013, it can't be responsible for the decline in federal funding that appeared in prior fiscal quarters, and was even evident as early as the middle of FY 2012. Recovery Act funds played no significant role in UC's federal agency funding after FY 2011, so this can't explain the decline either.

An examination of federal funding by agency helps to pinpoint the major areas of shortfall.

Federal Agency Funding, FY Comparison



Federal Agency Funding, FY 2012 and 2013

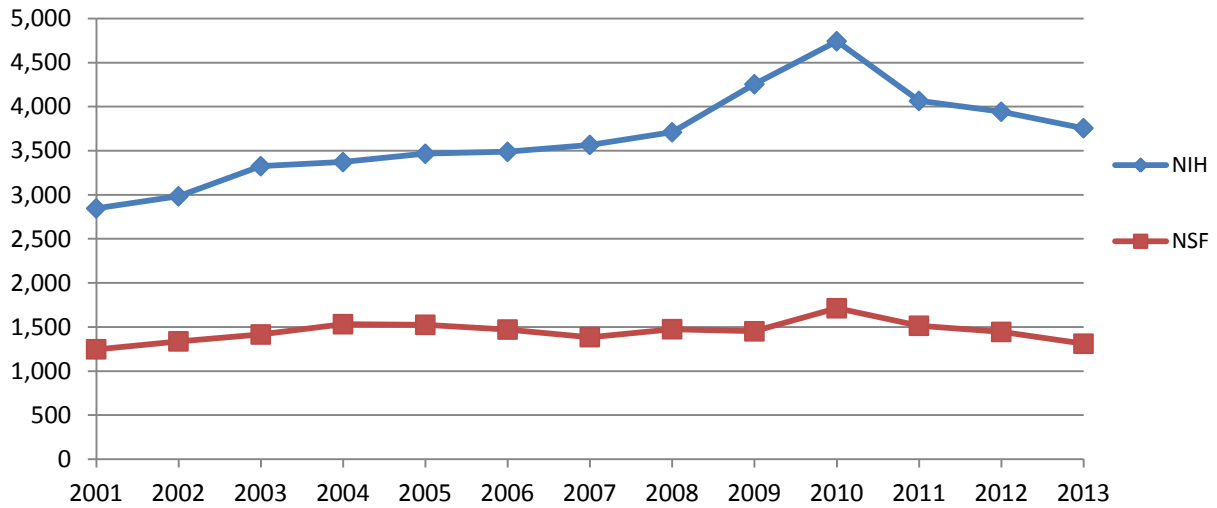
AGENCY	2012	2013	\$\$ DIFFERENCE	% CHANGE
NIH	1,890,981,452	1,700,625,631	-190,355,821	-10.1%
Other HHS	121,673,363	115,666,474	-6,006,889	-4.9%
NSF	487,355,716	433,132,862	-54,222,854	-11.1%
Defense	288,304,889	234,733,799	-53,571,090	-18.6%
Energy	129,675,544	96,975,073	-32,700,471	-25.2%
Education	42,718,216	42,318,201	-400,015	-0.9%
Commerce (incl. NOAA)	35,220,587	31,300,878	-3,919,709	-11.1%
Agriculture	76,506,047	42,545,680	-33,960,367	-44.4%
NASA	65,932,524	64,101,112	-1,831,412	-2.8%
Interior	23,421,919	18,820,583	-4,601,336	-19.6%
Other Federal Agencies	88,125,620	99,414,081	11,288,461	12.8%
TOTAL	3,249,915,877	2,879,634,374	-370,281,503	-11.4%

Just over half of the decrease in federal award funding reported for fiscal year 2012-13 is directly attributable to reduced R&D support from the National Institutes of Health, which is UC's largest single source of project funds. NIH generally provides nearly 60% of UC's direct federal funding, and any changes in NIH appropriations or funding practices will inevitably have a significant impact on UC. The National Science Foundation is UC's second-largest source of extramural funds, supplying about 20% of the federal total, and policy changes at that agency also have a profound effect.

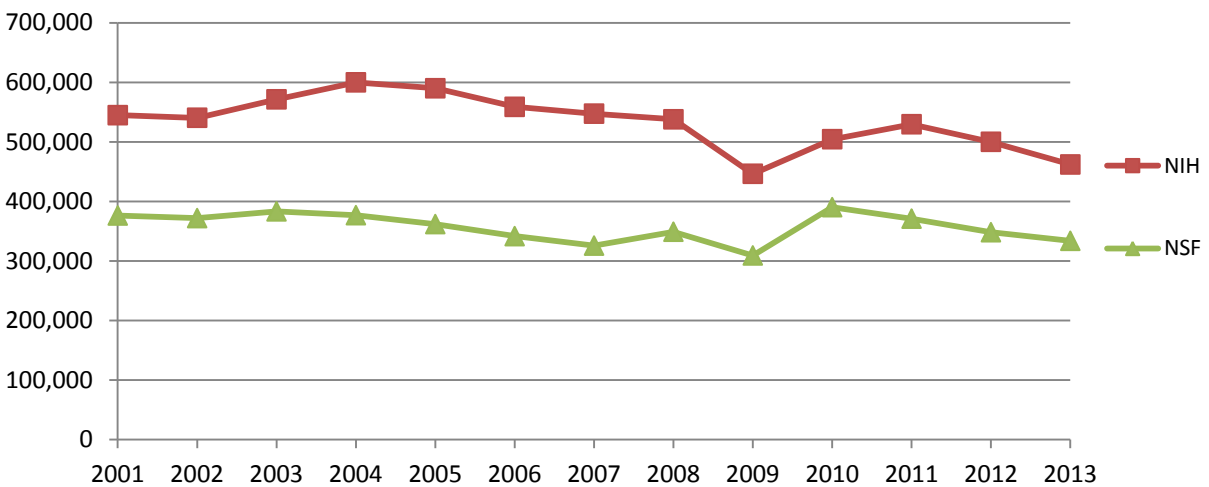
V. Federal Award Trends and Proposal Success Rates

NIH and NSF funding during FY 2012-13 has been dramatically affected by the Sequester. However, it appears that these and other federal agencies, operating under Continuing Resolutions, rather than Congressionally approved yearly budgets, have for some time been anticipating long-term appropriations cutbacks by conserving funds. Both agencies have publicly stated that they will be issuing fewer and smaller awards, and this is clearly reflected in UC's historic award data. The figures below reflect all award types, not limited to research.

NIH and NSF, Number of Awards to UC



NIH and NSF Average UC Award Size, Inflation-Adjusted



Award counts and totals include both regular and Recovery Act awards of \$5K and above. Continuations and renewals are counted as separate awards even if they are reported in the same fiscal year. All project types are included, not limited to research.

Considering both the number and average dollar value of NIH and NSF awards to UC, several important trends become apparent:

- Fewer awards are being received by UC. In FY 2013, UC reported about 4.7% fewer NIH awards in FY2013 than in 2012, and 9.2% fewer awards from NSF.
- The average award size from both agencies has not kept pace with inflation. The Recovery Act actually pulled down the average award size, because of the greater number of smaller awards.
- Awards are becoming smaller. Compared to FY 2012 (to reflect the post-ARRA award period), UC received awards in 2013 that were on average 7.6% smaller from NIH, and 6.5% smaller from NSF.

The decline in the number and dollar value of NIH and NSF awards does not reflect a slowdown in the flow of proposals submitted by UC. Quite the reverse is true: since FY 2011 (the post-ARRA era), the volume of UC proposals submitted to NIH and NSF has been increasing, even as the number of awards received has dropped.

<i>Fiscal Year</i>	<i>NIH Proposals</i>			<i>NSF Proposals</i>		
	FY 2011	FY 2012	FY 2013	FY 2011	FY 2012	FY 2013
<i>Number of Proposals</i>	4,910	5,210	5,793	2,728	2,936	3,187
<i>% Increase</i>		6.1%	11.1%		7.6%	8.5%

These proposal numbers, together with declining award numbers, suggest that UC's overall success rate in securing awards from its two main sources of federal support has declined in the post-ARRA period. There is no indication so far that UC has become any less competitive in seeking federal funds. Agency policies regarding issuance of smaller and fewer awards are being applied across the board, contributing to the drop in federal funding. UC's share may be remaining the same, but it is the pie that is shrinking.

Compounding the federal funding problem for all academic research institutions is NIH's recent policy of providing only 90% of the originally approved budget for non-competitive continuation awards and renewals. This means, for example, that a five-year award, originally budgeted at \$100,000 per year, can expect to have \$10,000 per year shaved from the actual issuance of funds when the project comes up for non-competing renewals. The policy's intent is to spread the impact of reduced appropriations across both new projects and ongoing projects with prior funding commitments. Many of the awards UC receives from NIH are in the form of non-competing renewals, so this policy has affected UC's NIH award total and will likely continue to do so for some time. NIH has announced that the practice will continue as long as the agency is operating under a Continuing Resolution with Sequester-level appropriation cuts.

V. Award Trends by Project Type

Research awards during Q413 amounted to \$1.15 billion, including \$64 million in clinical trial sponsorship. Training, service and other awards came to about \$224 million. For the year, research awards came to nearly \$4.2 billion, including \$290 million in clinical trial awards.

Q4 Award Amounts by Project Type, (\$ millions)

PROJECT TYPE	Q406	Q407	Q408	Q409	Q410	Q411	Q412	Q413
Research	953	1,028	1,069	1,053	1,071	1,026	1,090	1,085
Clinical Trials	29	40	43	36	49	56	65	64
Training	80	65	85	103	89	93	108	73
Service	124	119	105	100	107	78	64	90
Other	37	48	93	91	59	70	43	61
TOTAL	1,223	1,301	1,395	1,383	1,374	1,324	1,369	1,373

Fiscal Year Award Amounts by Project Type, (\$ millions)

PROJECT TYPE	2006	2007	2008	2009	2010	2011	2012	2013
Research	3,195	3,278	3,735	3,739	4,383	4,197	4,233	3,897
Clinical Trials	121	147	198	151	187	172	226	290
Training	284	265	330	317	332	341	318	279
Service	317	406	308	391	331	335	299	400
Other	179	273	337	340	339	346	263	339
TOTAL	4,096	4,370	4,909	4,938	5,573	5,391	5,340	5,205

VI. Major Awards Over \$5M

During Q413, UC received 15 awards for amounts of \$5 million or more. The largest single award, for \$20 million, was to Berkeley from the US Agency for International Development. Two major public service awards were from the California Department of Public Health, providing about \$13 million to UC Davis and an additional \$10 million to UC San Francisco.

LOCATION	SPONSOR CATEGORY	SPONSOR	PROJECT TITLE	AMOUNT
Berkeley	Federal	U.S. Agency for International Development	Development Innovations Lab (DIL)	\$20,000,000
Davis	State	California Department of Public Health	Emergency Preparedness Contract	\$13,381,875
Los Angeles	Federal	NIH National Center for Advancing Translational Sciences	UCLA Clinical and Translational Science Institute	\$13,051,904
Berkeley	Federal	National Science Foundation	Graduate Research Fellowship Program	\$12,882,750
San Francisco	Federal	National Institutes of Health National Heart, Lung & Blood Institute	Recipient Epidemiology and Donor Evaluation Study-III (Reds-III) - International Sites and Phase 2	\$11,056,553
Davis	Federal	National Institutes of Health, Office of the Director	California National Primate Research Center	\$10,674,998

San Francisco	State	California Department of Public Health	STD Prevention Training Center	\$9,775,244
Los Angeles	Federal	Bureau of Medicine And Surgery	Project Focus (Families Overcoming And Coping Under Stress)	\$9,610,991
Irvine	Federal	National Inst Of Allergy And Infectious Diseases	Pacific Southwest RCE for Biodefense and Emerging Infectious Disease Research	\$8,272,760
San Diego	Business	Ascendant MDX Laboratory Sciences, Inc	Clinical Trial of Blood Gene Expression Diagnostic Test of Risk of Autism in Infants and Toddlers in the General Pediatric Population	\$6,278,091
San Diego	Higher Ed	Wake Forest University	Therapeutic Effect of Intranasal Insulin on Cognition, Function, and AD Biomarkers	\$6,100,000
Berkeley	Interest Group	Berkeley Education Alliance for Research in Singapore	Bears - Berkeley	\$6,021,420
Irvine	Business	Stemcells Incorporated	Restoration of Memory in Alzheimer's Disease: A New Paradigm Using Neural Stem Cell Therapy	\$5,936,777
San Diego	Federal	NIH National Center for Advancing Translational Sciences	San Diego Clinical and Translational Research Institute	\$5,896,600
Berkeley	Higher Ed	University Of Illinois	Systems On Nanoscale Information Fabrics (SONIC) Center	\$5,133,749

VII. Award Trends by Recipient Location

Award totals for FY 2012-13 were about 2.5% under last year. This drop was unevenly divided, with UCR, UCSB and UCLA showing the largest percentage declines. The 11.5% increase in UCSF awards is due in part to a reporting artifact that shifted at least \$50 million in award funds from Q412 into the first quarter of FY 2013. UCSF's award totals for these two years would otherwise have been almost identical.

FY Awards by Location

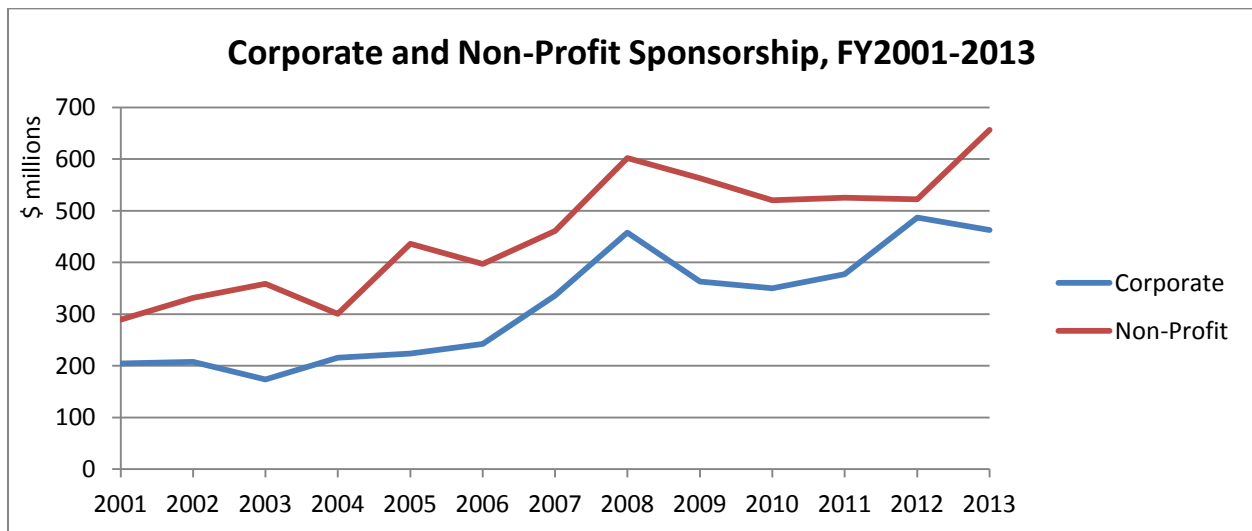
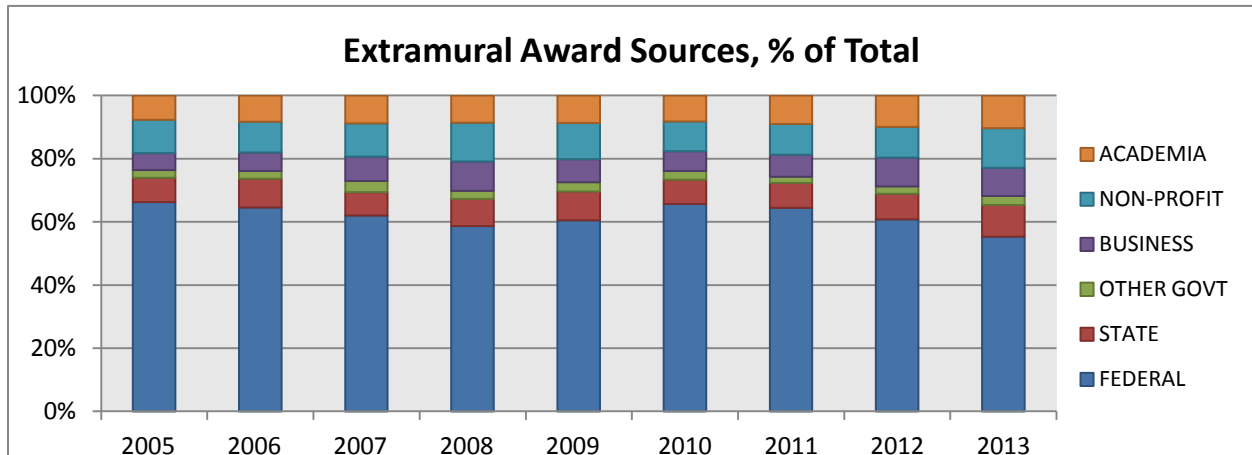
<i>UC LOCATION</i>	<i>FY 2012</i>	<i>FY 2013</i>	<i>Change</i>
<i>BERKELEY</i>	709,354,364	708,322,550	-0.1%
<i>SAN FRANCISCO</i>	919,556,405	1,025,256,830	11.5%
<i>DAVIS</i>	750,299,992	753,566,710	0.4%
<i>LOS ANGELES</i>	986,149,284	857,313,473	-13.1%
<i>RIVERSIDE</i>	111,433,994	92,776,733	-16.7%
<i>SAN DIEGO</i>	1,010,224,891	984,922,214	-2.5%
<i>SANTA CRUZ</i>	140,324,103	132,628,531	-5.5%
<i>SANTA BARBARA</i>	217,949,054	165,537,822	-24.0%
<i>IRVINE</i>	304,751,020	300,013,627	-1.6%
<i>MERCED</i>	16,870,593	16,950,696	0.5%
<i>UCOP</i>	29,584,159	28,050,085	-5.2%
<i>LBNL</i>	125,459,491	120,024,994	-4.3%
<i>AG & NAT RES</i>	17,880,883	19,771,501	10.6%
<i>TOTAL</i>	<i>5,339,838,233</i>	<i>5,205,135,766</i>	<i>-2.5%</i>

VIII. Private Funding Increases

With direct federal awards significantly below last year’s total, private and state sources of extramural funding are once again increasing in relative importance. Industry and the non-profit sector provided about \$1.1 billion, about \$110 million more than the prior year. That increase, combined with the sharp decline in federal agency funding for FY2013, has pushed the annual federal contribution to a record low of 55.3%.

FY Extramural Funding Sources, % of Total

	2005	2006	2007	2008	2009	2010	2011	2012	2013
FEDERAL	66.3%	64.6%	62.1%	58.7%	60.5%	65.7%	64.5%	60.9%	55.3%
STATE	7.6%	9.1%	7.4%	8.6%	9.1%	7.7%	7.9%	8.0%	10.1%
OTHER GOV'T	2.5%	2.4%	3.6%	2.6%	2.9%	2.8%	1.9%	2.4%	2.8%
BUSINESS	5.4%	5.9%	7.7%	9.3%	7.4%	6.3%	7.0%	9.1%	8.9%
NON-PROFIT	10.5%	9.7%	10.6%	12.3%	11.4%	9.3%	9.7%	9.8%	12.6%
ACADEMIA	7.7%	8.3%	8.8%	8.5%	8.7%	8.2%	9.0%	9.9%	10.3%

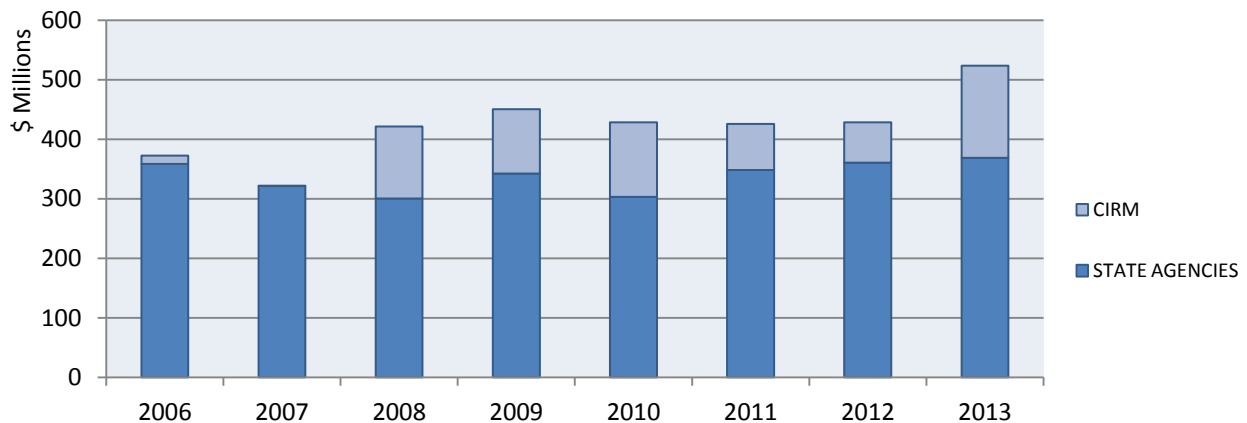


In comparing the FY 2013 totals for private sponsorship, it's important to note that a major portion of the non-profit increase came from Interest Groups—organizations that are legally not-for-profit entities, but are not specifically charitable organizations or private foundations. This sponsor category includes professional associations, industry consortia, research organizations and a range of other not-for-profit entities. The Contracts & Grants system differentiates these sponsors from foundations and charities because they usually enter into very different types of research agreements, particularly with regard to intellectual property rights. About \$33.4 million of the non-profit total was contributed by the Microelectronics Advanced Research Corporation (MARCO), an industry organization affiliated with the Semiconductor Industry Association, which is a non-profit organization. Nearly \$15 million of the non-profit funding came from the Berkeley Alliance for Research in Singapore (BEARS), which is a University of California corporation funded by the Government of Singapore.

IX. CIRM's Contribution to State Funding

During FY 2012-13, funding from State of California sponsors rose to a record \$523 million, exceeding last year's total by \$95 million. The California Institute for Regenerative Medicine (CIRM) continues to provide substantial research and infrastructure funding to UC, and represents a substantial proportion of all state awards. During FY 2012-13, CIRM awarded UC a record \$154 million, bringing the lifetime total of CIRM awards to nearly \$654 million. The FY 2013 CIRM award total is about \$86 million above the FY 2012 full-year total, while funding from other state agencies matches last year's amount.

CIRM's Contribution to UC's State Funding



CIRM and Other State Agency Funding

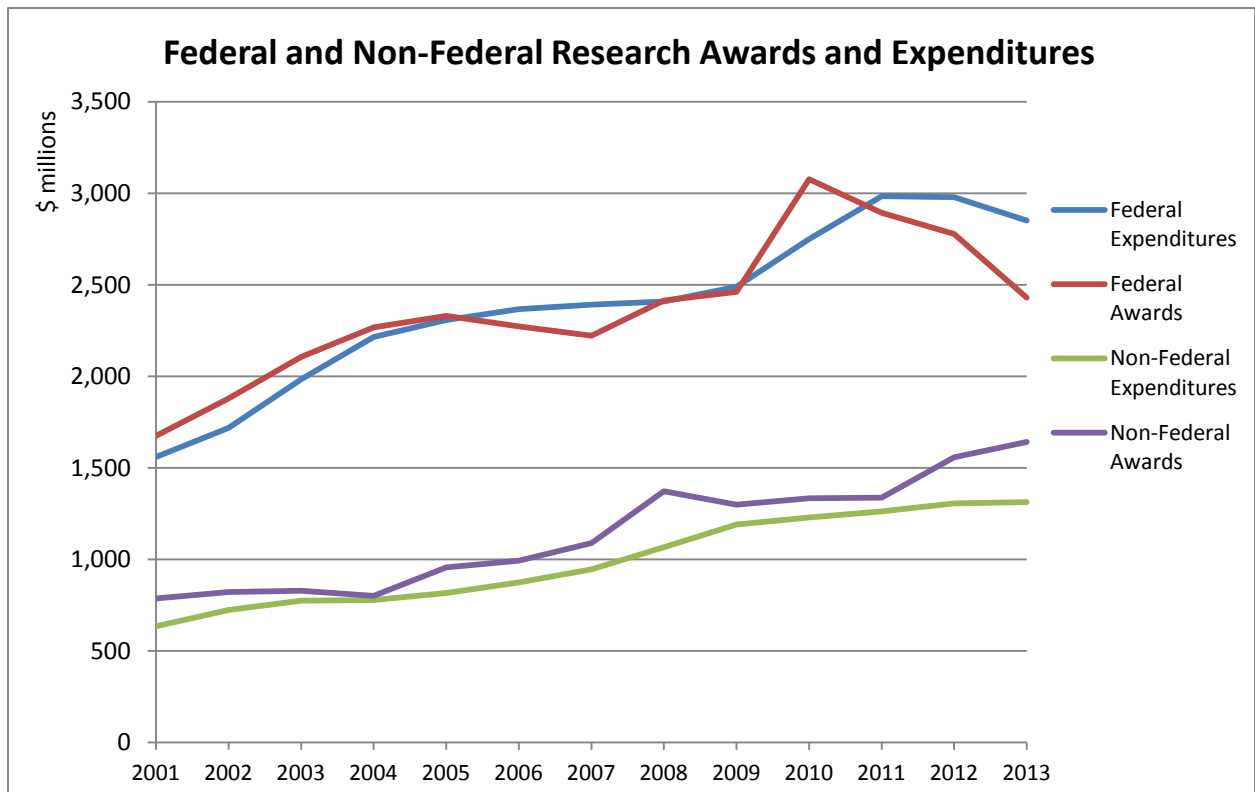
Sponsor	2006	2007	2008	2009	2010	2011	2012	2013
State Agencies	359	321	300	342	303	348	361	369
CIRM	14	< 1	121	108	125	77	68	154
State Total	372	322	421	451	428	426	429	523
CIRM %	3.70%	<0.01%	28.74%	24.02%	29.21%	18.18%	15.78%	29.52%

In addition to the research and training awards reported here, CIRM has provided nearly \$200 million in infrastructure grants to UC, which are not reported through Sponsored Projects Offices. CIRM awards have, since FY 2008, contributed a significant percentage of UC’s state award total. However, CIRM’s funding was intended to last only ten years, so UC cannot count on CIRM to supplement other state sources and compensate for declining federal funding beyond FY 2015.

X. Implications for the Research Enterprise

Recent estimates of the sequester’s effect on federal academic R&D suggest an overall reduction in the range of 6-7%. Last year, federal funding to UC for research projects amounted to \$2.8 billion, suggesting a sequester-driven decline in federal research support for FY 2013 of about \$200 million. Campus award data paint a much bleaker picture, showing a decline in federal research funds of \$345 million, and another \$25 million drop in federal support for other project types.

Part of this decline may prove to be linked to the federal award cycle. Given the budgetary uncertainty at the beginning of the federal fiscal year, it is likely that agencies backloaded their awards this year more than in previous years. The final quarter of the federal fiscal year that ended September 30, 2013 corresponds to UC’s first fiscal quarter for FY 2013-14, suggesting that UC’s Q114 award amounts could show some improvement over last year. However, as this graph of federal and non-federal awards and expenditures shows, both increases and decreases in annual award totals take several years to work through the expenditure process, for the simple reason that the average award duration is about two years, and projects typically start some months after the award is reported.



UC's extramural funding prospects remain under a cloud of uncertainty. Whatever the outcome of budget discussions in Washington over the next few months, federal agency R&D appropriations are likely to remain low and will probably retreat to 2008-2009 pre-recessionary levels. The state and private sources that are, for the moment, taking up some of the funding slack are not as reliable as the proposal-driven, federal award system. State CIRM funding will last only two more years. Industry and non-profit funding is highly opportunistic and quite volatile, responding abruptly to swings in the economy. The uncertainty of these sources, and the generally shorter duration of non-federal awards, makes it more difficult for UC to maintain continuity in its research programs and a stable research enterprise.

An increasing reliance on non-federal funding sources will not necessary change the broad focus of UC's research. The disciplinary mix of non-federal support for research is not very different from the pattern of federal agency funding. Medicine, life sciences, engineering, physical sciences and most other disciplines claim similar shares of both federal and non-federal research dollars.

However, non-federal sponsorship is less certain, takes greater effort to secure, and often entails contractual and financial terms less favorable to UC than is the case with federal awards. Nonetheless, if current trends continue, UC will need to find alternative sources of funding to prevent declining federal award amounts from having too great an impact on research activity, professional research staffing levels and support for graduate and post-doctoral training.

*Charles Drucker
Institutional Research
October, 2013*