

Contracts & Grants FY 2014-15 Award Report

The Future is Being Legislated

Extramural Funding Summary

UC's award total for FY 2014-15 from all external sponsors reached just over \$5.73 billion—about 1 percent below the amount received last year, after adjusting for an inflation rate of 1.7%. In constant, uninflated dollars, the amounts were almost identical. The main reason why these two years look so similar is that federal agencies still provide about two-thirds of UC's award funding, and the level of federal agency support has remained relatively constant (at about \$3.3 billion) for these two years.

The federal budget bill that was passed in 2013 kept funding stable for the subsequent two years. This arrangement expired on October 1, 2016. The two-year budget agreement that is currently working its way through Congress includes increases in federal agency appropriations for academic research & development that should run just ahead of inflation. Both the White House and Congress have proposed increased funding for NIH and NSF, recognizing the critical role that federally funded basic research plays in spurring the nation's innovation economy.

The award totals this year and last indicate that after the effects of inflation are taken into account, UC's federal funding is about at the level it was a decade ago. The current federal award total is still well below the amounts received during 2009-10 and 2010-11, when stimulus funds were available through the American Recovery and Reinvestment Act.

While federal funding is subject to a highly politicized budget process, non-federal sponsorship tends to follow the overall economy. Non-federal sources of funding during 2014-15 amounted to about \$2.39 billion. This is about 1% below the \$2.41 billion received from these sources last year. Much of this difference is due to several very large, multi-year research awards received from corporate sponsors in 2013-14, producing a spike in private sponsorship. Over the long term, the trends for both corporate and non-profit funding follow the growth of the economy.

Research Award Data Visualization

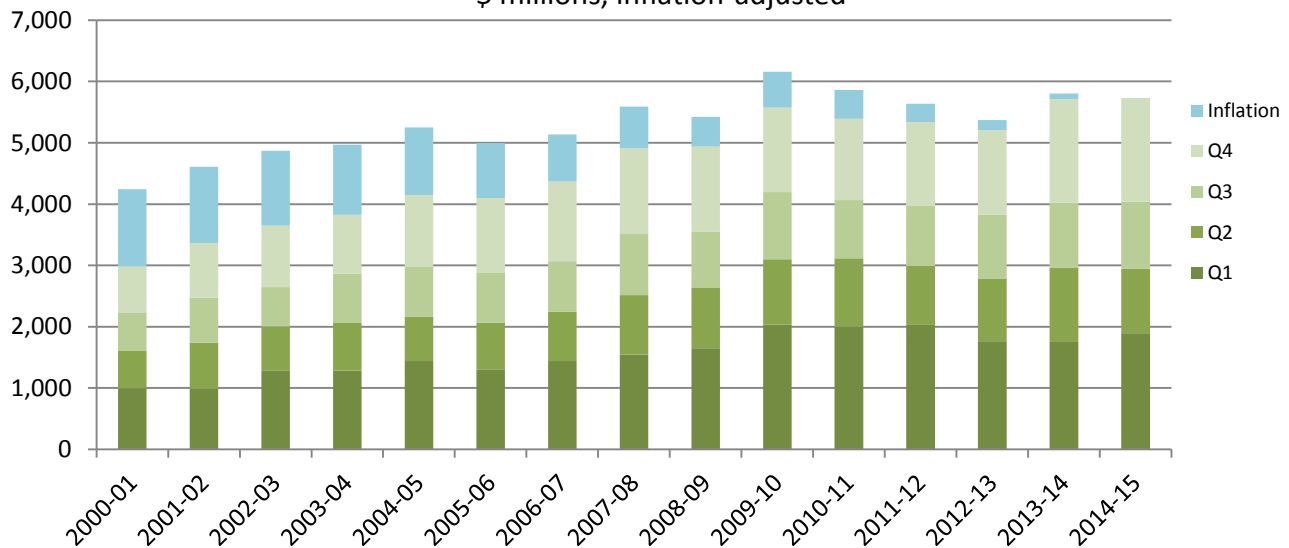
Research awards generally constitute 80% or more of UC's annual award total. For more detailed information about research sponsorship, an online, interactive data visualization showing [UC's research award history](#) since 2001 is available online. Additional information on research activities at UC is also available on the [UC InfoCenter](#).

I. Yearly and Quarterly Award Metrics

For fiscal year 2014-15, total award funding from all sources came to \$5.73 billion, about 1.27% below last year's total of 5.8 billion, when inflation is taken into account. Extramural awards for Q415 totaled about \$1.69 billion, about \$10 million more in constant (non-adjusted) dollars than the amount reported during Q414 last year, and about \$320 million more than Q413, when the automatic reduction in federal spending (the sequester) was in effect. The increase over two years ago is due to higher levels of federal funding, resulting from the passage of a federal budget bill in January 2014.

Extramural Awards, FY 2000-01 to 2014-15

\$ millions, inflation-adjusted



Extramural Awards by Quarter

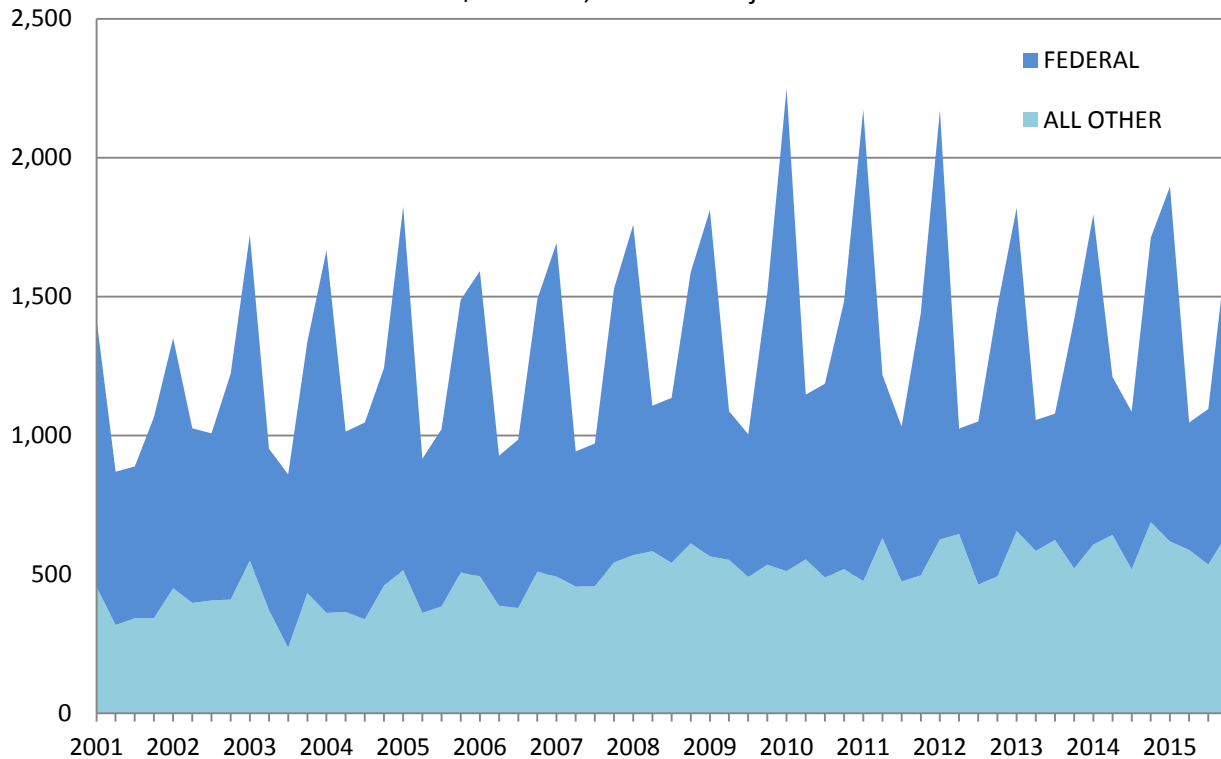
\$ millions, inflation-adjusted

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Q1	1,420	1,351	1,722	1,667	1,824	1,592	1,693	1,759	1,812	2,250	2,173	2,143	1,819	1,796	1,896
Q2	869	1,026	952	1,014	916	927	943	1,107	1,088	1,174	1,218	1,012	1,056	1,211	1,047
Q3	888	1,008	860	1,047	1,023	985	971	1,135	1,004	1,214	1,032	1,037	1,078	1,086	1,095
Q4	1,067	1,222	1,337	1,243	1,489	1,492	1,529	1,588	1,518	1,519	1,440	1,445	1,416	1,712	1,693
FY	4,245	4,607	4,871	4,971	5,252	4,996	5,136	5,589	5,422	6,157	5,864	5,637	5,370	5,805	5,731

Award totals vary greatly over the course of a fiscal year. The amounts reported during 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. The large award totals for 2010, 2011 and 2012 reflect Recovery Act (ARRA) stimulus funds.

Federal and All Other Awards, by Quarter

\$ millions, inflation-adjusted



II. Award Trends by Sponsor Category

Even though the award total for 2014-15 was slightly higher than last year, an inflation rate of about 1.7% more than consumed the small increase. After adjusting for inflation, the award total was 1.27% below last year's amount. As in past years, the federal government provided the majority of the award total.

Awards by Sponsor Category, FY 2004-05 to 2014-15

(\$ millions, inflation adjusted)

SPONSOR	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<i>Federal</i>	3,485	3,228	3,188	3,284	3,280	4,047	3,787	3,439	2,985	3,351	3,342
<i>State</i>	401	454	378	480	495	473	463	452	540	446	412
<i>Other Gov't*</i>	129	119	184	143	159	171	111	135	152	191	163
<i>Business</i>	283	295	395	521	399	386	410	514	477	622	551
<i>Non-Profit</i>	552	485	542	686	619	576	572	547	678	650	733
<i>Academia**</i>	402	415	449	476	472	504	521	549	539	546	531
TOTAL	5,252	4,996	5,136	5,589	5,422	6,157	5,864	5,637	5,370	5,805	5,731

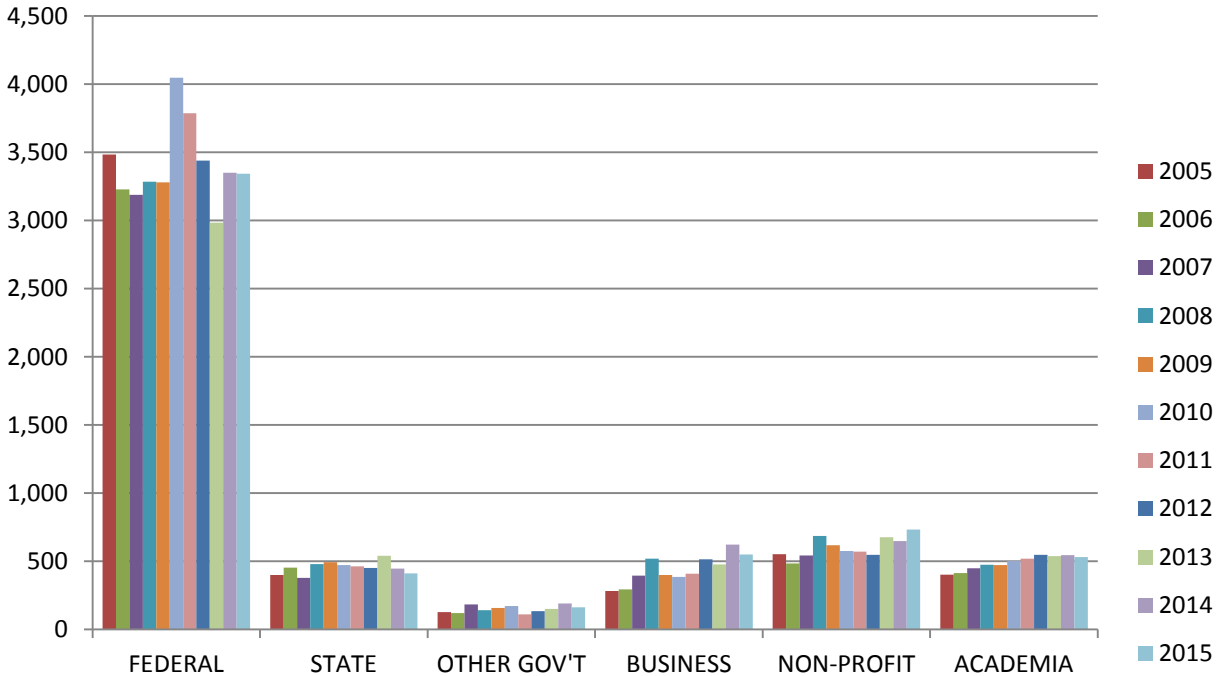
* Other Government includes Agricultural Market Order Boards.

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

Federal funding remains by far the largest single contributor to IC's award total. Direct federal funding during Q415 was about \$1.05 billion, and for the year as a whole, about \$3.34 billion, or 58.3% of the total from all sources. Both quarterly and yearly amounts are slightly higher than last year, but awards have not kept pace with inflation. The peak in federal funding during 2010 and 2011 was due principally to Recovery Act (ARRA) awards. The drop in federal funding for FY 2013 was a direct consequence of the budget sequester.

Awards by Sponsor Category, FY 2004-05 to 2014-15

\$ millions, inflation-adjusted



In addition to more than \$3.3 billion in direct federal funding for 2014-15, nearly \$593 million in federal funds came to UC indirectly, as flow-through funds from non-federal sponsors. The true federal contribution to UC's award funding, including these flow-through funds, is actually about 68.7% of the total.

Flow-Through Funds by Sponsor Category, FY 2014-15

(\$ millions, inflation adjusted)

<i>Sponsor</i>	<i>Flow-Through \$</i>	<i>Total</i>	<i>% of Total</i>
<i>State</i>	65.1	412	15.8%
<i>Other Gov't.</i>	15.6	163	9.6%
<i>Business</i>	58.4	551	10.6%
<i>Non-Profit</i>	116.7	733	15.9%
<i>Higher Ed</i>	244.8	316	77.6%
<i>DOE Labs</i>	9.6	15	62.7%
<i>Campuses/OP</i>	82.5	200	41.3%
Total	592.8	2,389	24.8%

More than three-quarters of the funds that UC receives from other higher education institutions, about \$245 million, originated as federal funds, sourced primarily from the same agencies that support UC directly. Considerable funds also flow between UC locations. More than 40% of the funds that UC campuses receive from each other, about \$82.5 million, also derive from federal awards to one location that serves as a prime contractor, generating sub-awards to other UC locations. Overall, nearly one-quarter of all the non-federal funds that UC receives originated as federal awards. This large portion points not only to the heavy dependency of academic research on the federal government, but also on the dense network of collaborations among research universities promoted through the federal award system.

III. Federal Agency Funding Trends

While the federal funding total for 2014-15 is only slightly below last year's inflation-adjusted amount, it remains well below the federal totals for 2010-11 and 2011-12 when Recovery Act funds were available, and just about on a par with funding in the years prior to the recession. Only the Recovery Act has kept federal funding for UC from being essentially flat for the past decade. An examination of recent federal funding by agency helps to pinpoint the major areas of change as funding went from the heights of the Recovery Act (2011-12) to the lows of the sequester (2012-13), and onward to two relatively stable years.

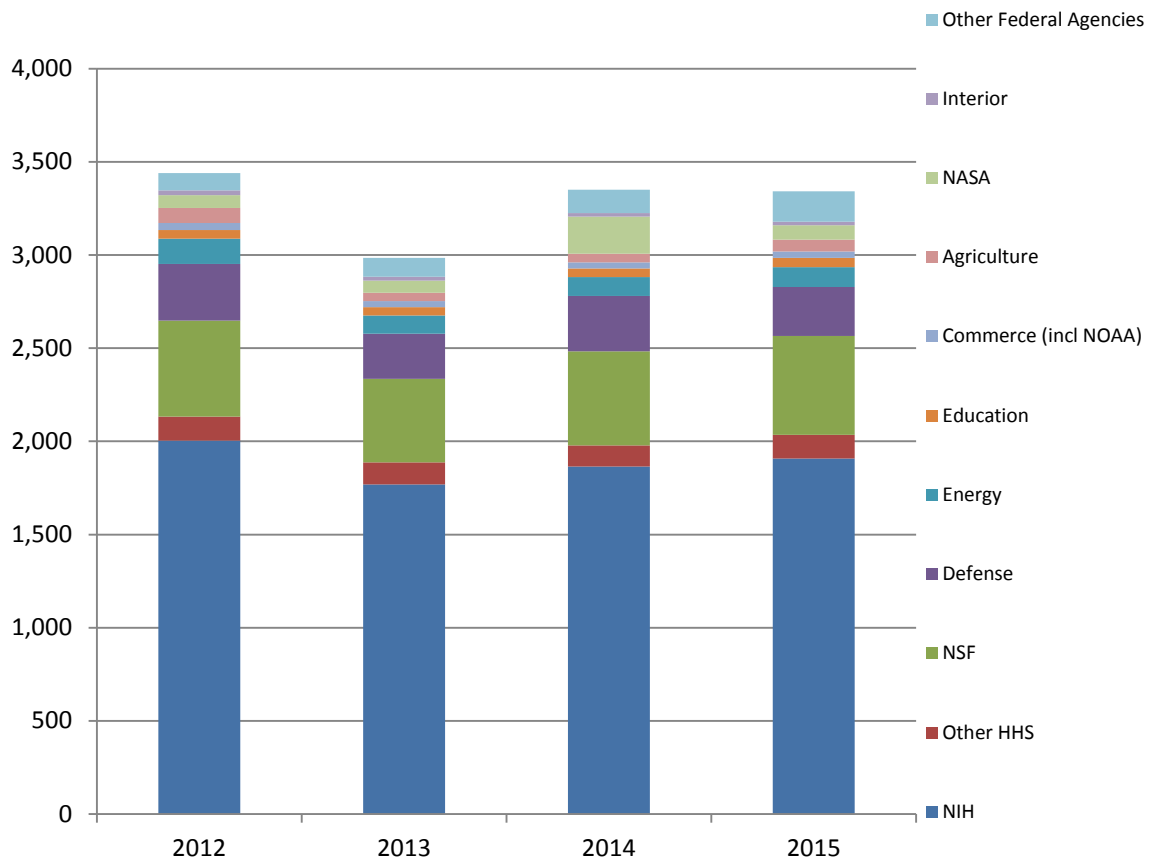
Recent Funding by Federal Agencies, FY 2012-13 to 2014-15

AGENCY	2011-12	2012-13	2013-14	2014-15	% change from 2013-14
NIH	2,005	1,769	1,865	1,908	2.3%
Other HHS	128	119	113	128	13.4%
NSF	514	447	505	530	4.9%
Defense	304	242	297	262	-11.8%
Energy	135	98	101	107	6.0%
Education	47	46	46	50	8.1%
Commerce (incl. NOAA)	37	32	32	34	5.7%
Agriculture	81	44	47	63	34.3%
NASA	70	66	199	77	-61.4%
Interior	25	19	20	19	-1.2%
Other Federal Agencies	93	103	125	164	31.0%
TOTAL	3,439	2,985	3,351	3,342	-0.2%

One of the more significant year-over-year changes is a spike in NASA funding, reported for 2013-14. This is attributable to a single award of \$132 million from the NASA Goddard Space Center to UC Berkeley as prime contractor in a multi-site ionospheric research project.

Recent Federal Agency Funding, FY 2012 - 2015

\$ millions, inflation-adjusted

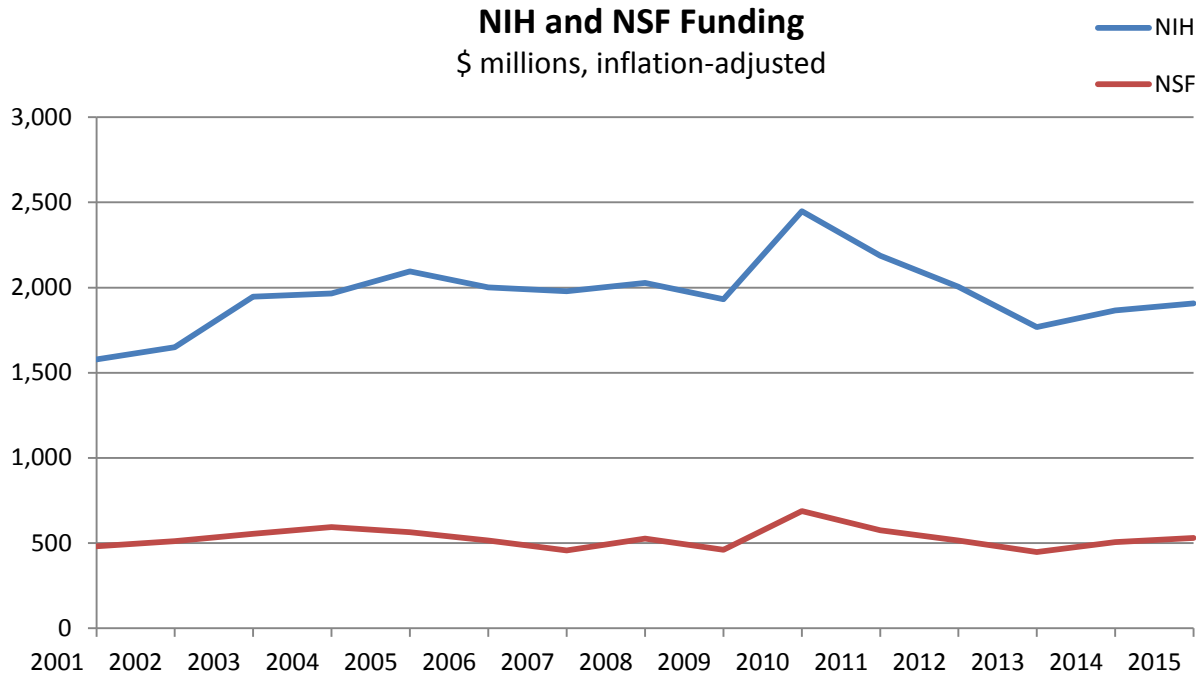


IV. NIH and NSF Funding Trends

Two federal agencies—the National Institutes of Health and the National Science Foundation—provide the core of UC’s federal funding, representing about 76% of the federal total. NIH generally provides nearly 60% of UC’s direct federal funding (with additional amounts received as flow-through funds), and any changes in NIH appropriations or funding practices have a significant impact on UC. The National Science Foundation is UC’s second-largest source of extramural funds, supplying about 16% of the federal total, and policy changes at that agency also have a profound effect.

All federal R&D appropriations were dramatically affected by the sequester of 2012-13, which slowed the flow of award funding to UC and other research universities. But the issue of federal funding, particularly for academic research and development, long predates this particular congressional budget compromise. Agency appropriations for academic R&D are connected to federal budget policies, and have been kept essentially flat for over a decade, except for the couple of years when ARRA stimulus funds were available.

Not surprisingly, UC’s history of award funding from NIH and NSF closely parallels the federal budget trend, including the two-year spike due to stimulus funds.



(\$ millions)

FY	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
NIH	1,578	1,650	1,947	1,965	2,096	2,000	1,980	2,027	1,931	2,448	2,187	2,005	1,769	1,865	1,908
NSF	481	511	555	593	565	514	456	526	460	687	576	514	447	505	530

V. Award Trends by Project Type

Research awards from all sources during Q415 amounted to \$1.43 billion, including \$93 million in clinical trial sponsorship. Training, service and other awards came to about \$260 million. For the year, as noted in the table below, research awards came to about \$4.71 billion, including \$324 million in clinical trial awards, or 82.3% of the award total.

Fiscal Year Award Amounts by Project Type

\$ millions, inflation-adjusted

PROJECT TYPE	2007	2008	2009	2010	2011	2012	2013	2014	2015
Research	3,852	4,252	4,088	4,842	4,563	4,468	4,019	4,352	4,392
Clinical Trials	173	226	182	206	187	239	318	411	324
Training	312	376	348	367	370	335	286	300	315
Public Service	478	351	430	367	367	317	399	422	370
Other	322	385	374	376	376	277	348	321	330
TOTAL	5,136	5,589	5,422	6,157	5,864	5,637	5,370	5,805	5,731

VI. Significant Awards

During FY 2014-15, UC received some 26,000 contracts and grants from about 3,400 different sponsors (in addition to nearly five thousand Material Transfer Agreements). Listed below are the largest or most significant awards reported this quarter by campuses, Agriculture & Natural Resources, Lawrence Berkeley National Lab and the Office of the President.

LOCATION	SPONSOR CATEGORY	SPONSOR	PROJECT TITLE	AMOUNT
Agriculture & Natural Resources	Federal and State	U.S. Dep't of Agriculture and California Department of Social Services	UC CalFresh Nutrition Education Program	3,218,060
Berkeley	Federal	National Science Foundation	SuperCDMS (Cryogenic Search for Dark Matter) SNOLAB	11,450,001
Davis	Federal	U.S. Agency for International Development	Emerging Pandemic Threats Program 2	34,000,000
Irvine	Non-Profit	Andrew W. Mellon Foundation	Reforming Graduate Education Through Improved Humanities Teaching: An Integrative Approach	2,730,000
Lawrence Berkeley Lab	State	California Energy Commission	Enabling Anaerobic Digestion Deployment for Municipal Solid Waste-to-Energy	4,300,000
Los Angeles	Non-Profit	Wounded Warrior Project	Healing the Wounds of War: A Proposal to the Wounded Warrior Project to Establish a Network of National Centers of Excellence	15,700,000
Merced	Federal	U.S. Dep't of Education Institute of Education Sciences	Further Development of Effect Sizes for Single-Case Designs: Extensions to Trend and Diverse Outcome Metrics	899,884
Office of the President	Federal	Office of Postsecondary Education	California Gear Up III	10,000,000
Riverside	Federal	National Institute on Aging	Colorado Adoption/Twin Study of Lifespan Behavioral Development and Cognitive Aging (CATSlife)	1,426,439
San Diego	Federal	National Science Foundation	Gateways to Discovery: Cyberinfrastructure for the Long Tail of Science	20,799,963
San Francisco	Non-Profit	Aga Khan University Foundation	Stem Cell Biology and Regenerative Medicine	3,157,271
Santa Barbara	Federal	National Science Foundation	Kavli Institute for Theoretical Physics Program Support	4,615,000
Santa Cruz	Federal	National Cancer Institute	Center for Big Data in Translational Genomics	2,753,942

VII. Award Trends by Recipient Location

Award totals for FY 2014-15 were 0.4% above last year before adjustment for inflation, and about 1.3% below last year after taking inflation into account.

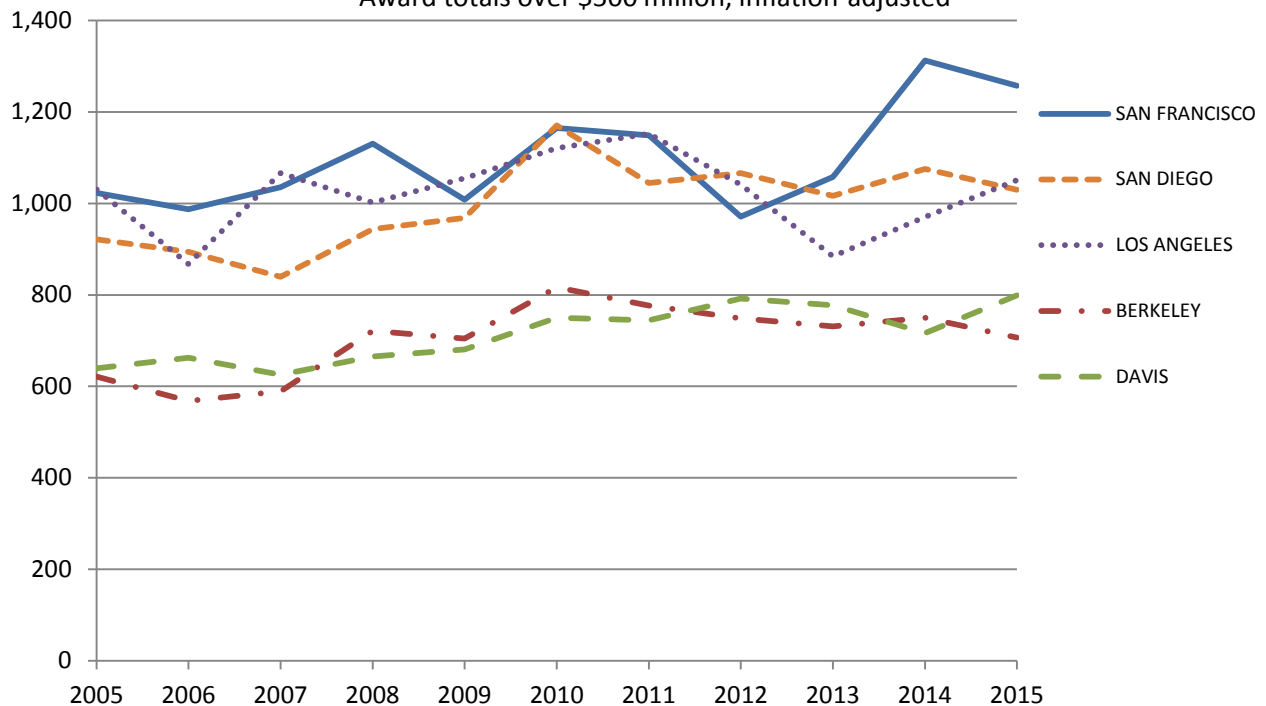
Recent Fiscal Year Awards by Location

\$ millions, inflation-adjusted

UC LOCATION	FY 2012	FY 2013	FY 2014	FY 2015	Change from FY 2014
Berkeley	749	731	750	695	-7.4%
San Francisco	971	1,058	1,312	1,236	-5.8%
Davis	792	777	716	786	9.7%
Los Angeles	1,041	885	971	1,033	6.4%
Riverside	118	96	112	124	10.1%
San Diego	1,066	1,016	1,075	1,012	-5.9%
Santa Cruz	148	137	139	135	-3.3%
Santa Barbara	230	171	211	186	-11.9%
Irvine	322	310	315	293	-7.0%
Merced	18	17	31	26	-17.4%
UCOP	31	29	12	28	121.8%
LBNL	132	124	133	152	14.0%
Ag & Nat Res	19	20	26	27	2.8%
TOTAL	5,637	5,370	5,805	5,731	-1.3%

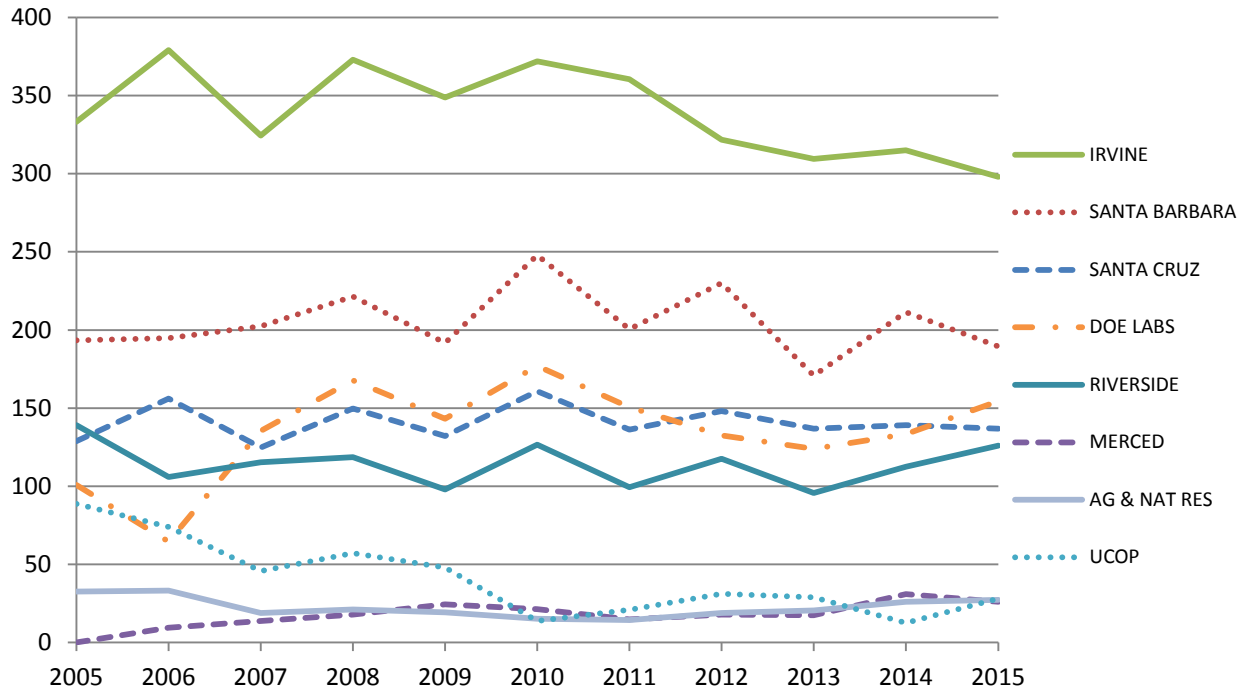
Awards by Location, FY 2005-2015

Award totals over \$500 million, inflation-adjusted



Awards by Location, FY 2005-15

Award totals under \$500 million, inflation-adjusted

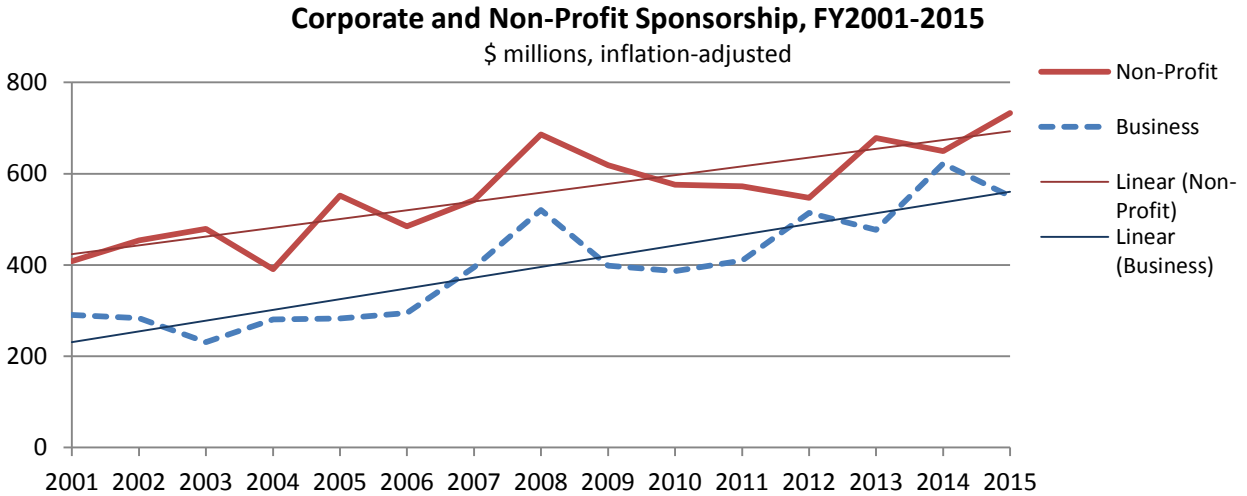


VIII. Private Funding Increases

In contrast to federal agency funding, which has remained essentially flat for the last decade, private sources of funding have been steadily increasing in both dollar amount and relative importance. In 2014-15, industry and the non-profit sector provided about \$1.28 billion. This represents 22.5% of the total, up slightly from the previous two years. Federal funding, though, remains the dominant source of extramural funding.

Funding Sources, % of Total

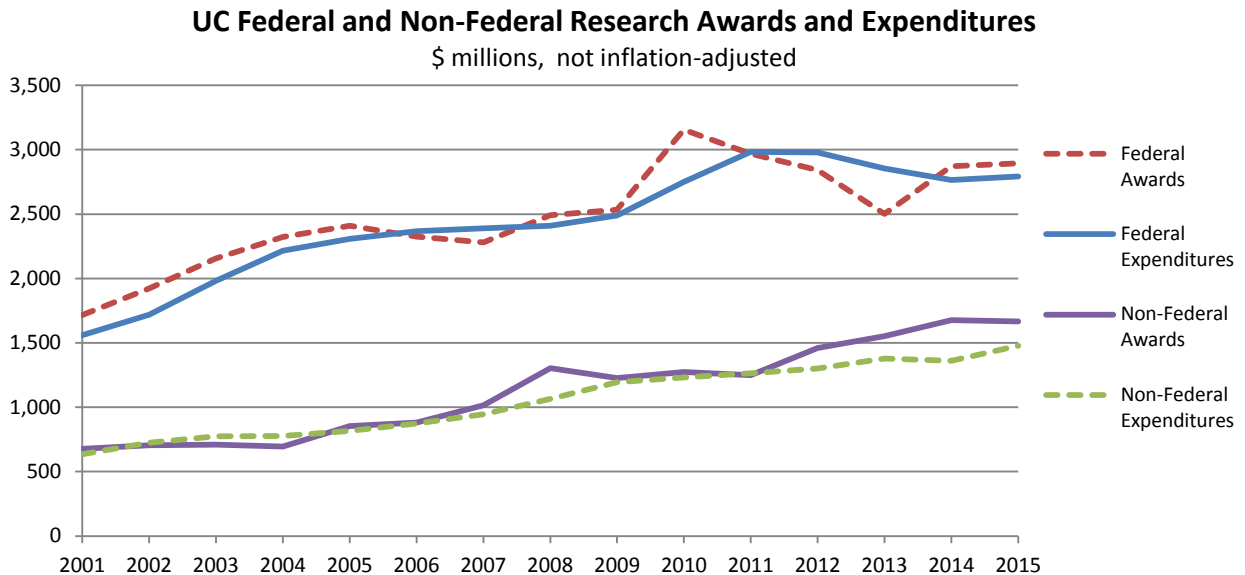
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<i>Federal</i>	64.6%	62.1%	58.8%	60.5%	65.7%	64.6%	61.0%	55.6%	57.7%	58.6%
<i>State</i>	9.1%	7.4%	8.6%	9.1%	7.7%	7.9%	8.0%	10.1%	7.7%	7.2%
<i>Other Gov't</i>	2.4%	3.6%	2.6%	2.9%	2.8%	1.9%	2.4%	2.8%	3.3%	2.8%
<i>Business</i>	5.9%	7.7%	9.3%	7.4%	6.3%	7.0%	9.1%	8.9%	10.7%	9.7%
<i>Non-Profit</i>	9.7%	10.6%	12.3%	11.4%	9.3%	9.8%	9.7%	12.6%	11.2%	12.8%
<i>Academia</i>	8.3%	8.7%	8.5%	8.7%	8.2%	8.9%	9.7%	10.0%	9.4%	9.3%



Awards from corporate sponsors in FY 2013-14 showed a significant spike. This increase was the result of a few very large, multi-year research awards. The overall trend for both corporate and non-profit sponsorship shows a steady increase that is likely to continue as long as the economy remains strong.

IX. The Future of Federal Funding

The level of federal agency support for academic research and development is set by the federal budget, and is subject to all the uncertainties surrounding this highly politicized process. The past two years have seen a period of relative stability in federal funding for the research enterprise. This is due in large part to the Bipartisan Budget Agreement of 2013, which temporarily ended some of the sequestration cuts that reduced federal awards so sharply that year.



The sequestration was invoked by the Budget Control Act of 2011, which put in place a ten-year reduction in discretionary federal spending, including agency appropriations for R&D. The budget agreement that is currently working its way through Congress includes a further two-year hiatus in sequestration cuts, as well as some modest increases in discretionary spending. Increases in federal agency appropriations for R&D are among them.

Both the President and members in both houses of Congress have proposed increases to research appropriations for NIH and NSF—the two largest sources of UC’s research support. The President’s budget proposal to Congress in February 2015 included a 3% overall increase in R&D, including a \$1 billion increase for NIH alone, bringing that agency’s R&D appropriation to \$30.3 billion. The House appropriations subcommittee boosted the NIH increase to \$1.1 billion, and the Senate, literally doubling down on the President’s proposal, suggested a \$2 billion increase to NIH’s budget next year—offset by discretionary spending cuts elsewhere and some new revenue sources.

Politico calls this a “remarkable turnaround” for the agency, and notes that the severe sequestration cuts of 2013 “may have been a blessing in disguise, underscoring the urgency for funding and reinvigorating efforts by advocates and the research community to help the agency regain ground.”

However, the current budget agreement extends the sequester’s spending cuts through 2025—four years past the original ten-year term of the 2011 Budget Control Act. This means that even if the current budget agreement passes, the cuts to agency appropriations could return in two years’ time, unless yet another legislative hiatus is put in place.

The partnership between the federal government and the nation’s research universities has long been a key component in driving the nation’s innovation economy. As long as federal agency funding remains subject to a politicized budget process, the funding prospects for American research universities will remain under a cloud of uncertainty. State and private sources have taken up some of the funding slack, but they are more variable and less predictable than the proposal-driven federal award system. This makes it more difficult for UC, like many other research institutions, to maintain continuity in its research programs and stability in its research enterprise. And that, in turn, affects instruction, the course of discovery, the pace of innovation and the economy as a whole.

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October, 2015