

# Contracts & Grants Q218 Award Report

## Omnibus budget boosts federal research funding

### Extramural funding summary

The Omnibus Budget passed by Congress and signed by the President on March 23 of this year includes specific spending levels for government programs, including the agency appropriations that determine how much support will be available to the academic research community. This marks the third time that the federal budget has lifted the caps on domestic discretionary spending that have hovered like a dark cloud over the research community since their appearance in the 2013 sequester. In the Budget Acts of 2013 and 2015, Congress lifted these caps through two-year agreements that temporarily prevented across-the-board spending reductions from being re-imposed. The current budget agreement lifts these caps for another two years, through federal FY 2019.

In the Omnibus Budget, Congress chose not to follow the outlines of the President's Budget Proposal with regard to research funding. The Administration's Proposal would have cut research funding by 5% overall, curtailing a number of programs of importance to the nation's research agenda, and UC in particular, including renewable energy, climate research and oceanography. Instead, all of UC's principal sources of funding will see increased appropriation levels. The National Institutes of Health, which would have been cut by over 21%, has benefited the most from the 2018 budget and is expected to receive an 8.7% boost of about \$3 billion (including nearly half a billion dollars for the Cures Act initiatives). The National Science Foundation, UC's second-largest source of external research funds, will not be cut by 16%, as the Administration originally proposed, but will increase by 3.9%. Other key federal sources for UC, notably the Departments of Energy and Defense and NASA, will also receive increased funding. Climate science at NOAA and the Environmental Protection Agency, while not increasing, will at least be continued at last year's levels.

Overall, the 2018 budget could potentially increase UC's federal funding for the year by about \$235 million. Section VII of this report includes an agency-level projection of possible increases for the year.

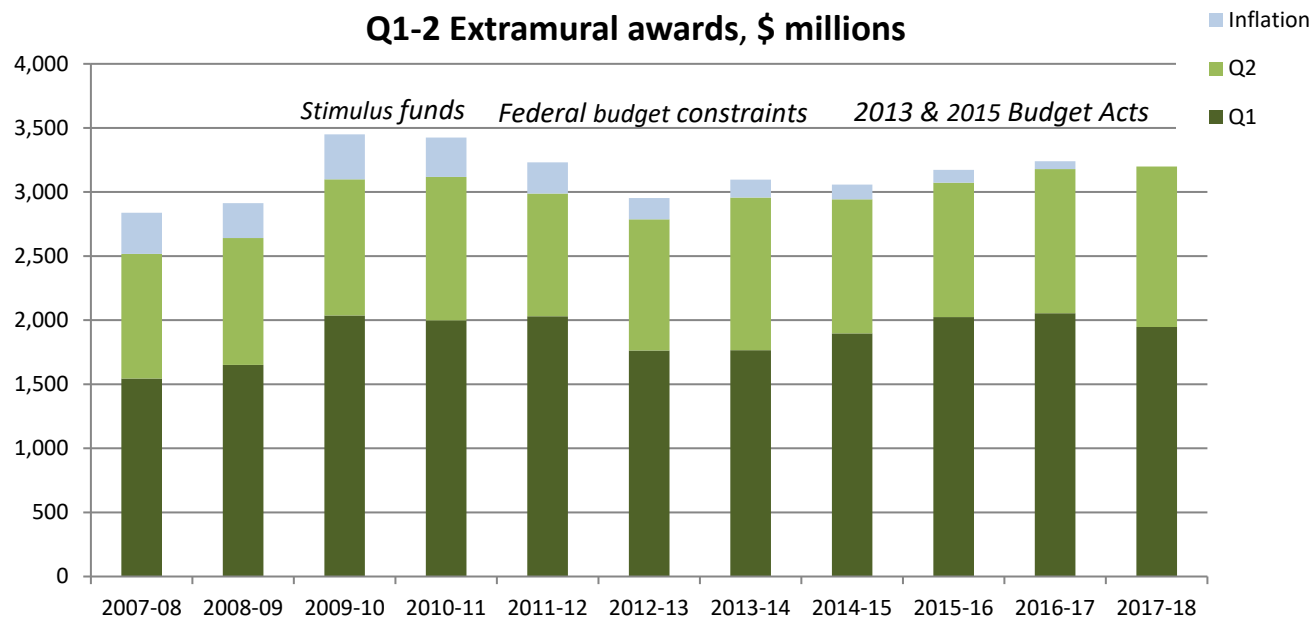
Award reports for the current quarter — the first in the federal fiscal year — total about \$1.25 billion, about 8% above last year, after adjusting for inflation. Of this, \$535 million represents direct federal support, which is about \$64 million more than last year's federal total. With the passage of the Omnibus Budget, UC's federal project support can be expected to increase for at least the next year.

### For more information and analysis

Several interactive data visualizations and data tables are available online at the [UC Information Center](#). These include a visualization showing [UC's research award history](#) since 1999, a [geographic representation](#) of UC's project sponsors, and data tables summarizing [UC's annual award and proposal totals](#). 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. (Link urls are listed on last page.)

## I. Quarterly award trends

For the first two quarters of FY 2017-18, award funding from all sources came to \$3.2 billion, with \$1.25 billion of this total during Q2. Before taking inflation into account, this is about \$19 million more than the same period last year. However, with an inflation rate of nearly 3% over the last year, what would have been an increase of close to 1% becomes a decrease in spending power of about 2.3%.



Even though there has been significant growth in award funding since federal budget constraints were lifted in 2014, inflation-adjusted totals are still below where they were when stimulus funds were available. Because awards are typically spent 1-2 years or more after they are reported, high rates of inflation can reduce the purchasing power of the award just as the project is winding down.

### Extramural awards by quarter \$ millions, inflation-adjusted

	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
Q1	1,922	2,387	2,305	2,273	1,930	1,905	2,012	2,124	2,115	1,947
Q2	1,154	1,246	1,292	1,073	1,120	1,285	1,111	1,099	1,158	1,251
Q3	1,065	1,288	1,095	1,100	1,144	1,152	1,162	1,156	1,213	
Q4	1,610	1,611	1,528	1,533	1,503	1,816	1,796	1,934	1,778	
<b>FY Total</b>	<b>5,752</b>	<b>6,532</b>	<b>6,220</b>	<b>5,980</b>	<b>5,697</b>	<b>6,159</b>	<b>6,080</b>	<b>6,314</b>	<b>6,265</b>	

Award totals over the course of a fiscal year vary mainly as a consequence of the federal funding cycle. Federal award reporting peaks during the last two quarters of the federal fiscal year; in UC's fiscal year, these quarters correspond to Q4 of one fiscal year and to Q1 of the next. With direct federal sponsorship providing 55-60% or more of all UC's awards, the federal funding cycle produces sharp quarterly spikes in overall funding.

## II. Award trends by sponsor category

Federal agencies continue to provide the majority of UC's contracts and grants, and federal funding has been relatively constant for the last four years. The large federal award totals for 2009-10 through 2011-12 reflect the additional Recovery Act (ARRA) funds received from federal agencies.

### Q1-2 Awards by sponsor category, FY 2008-09 to 2017-18

\$ millions, inflation-adjusted

SPONSOR	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Federal	1,891	2,488	2,424	2,016	1,735	1,866	1,843	1,824	1,866	1,899
State	249	273	253	314	300	273	226	240	292	236
Other gov't*	74	59	48	94	101	80	69	54	66	78
Corporate	235	186	206	276	227	341	291	405	379	360
Non-profit	367	351	348	329	379	344	402	431	391	302
Academia**	260	275	318	318	307	287	292	270	278	323
<b>TOTAL \$</b>	<b>3,076</b>	<b>3,632</b>	<b>3,597</b>	<b>3,347</b>	<b>3,050</b>	<b>3,190</b>	<b>3,122</b>	<b>3,224</b>	<b>3,273</b>	<b>3,198</b>

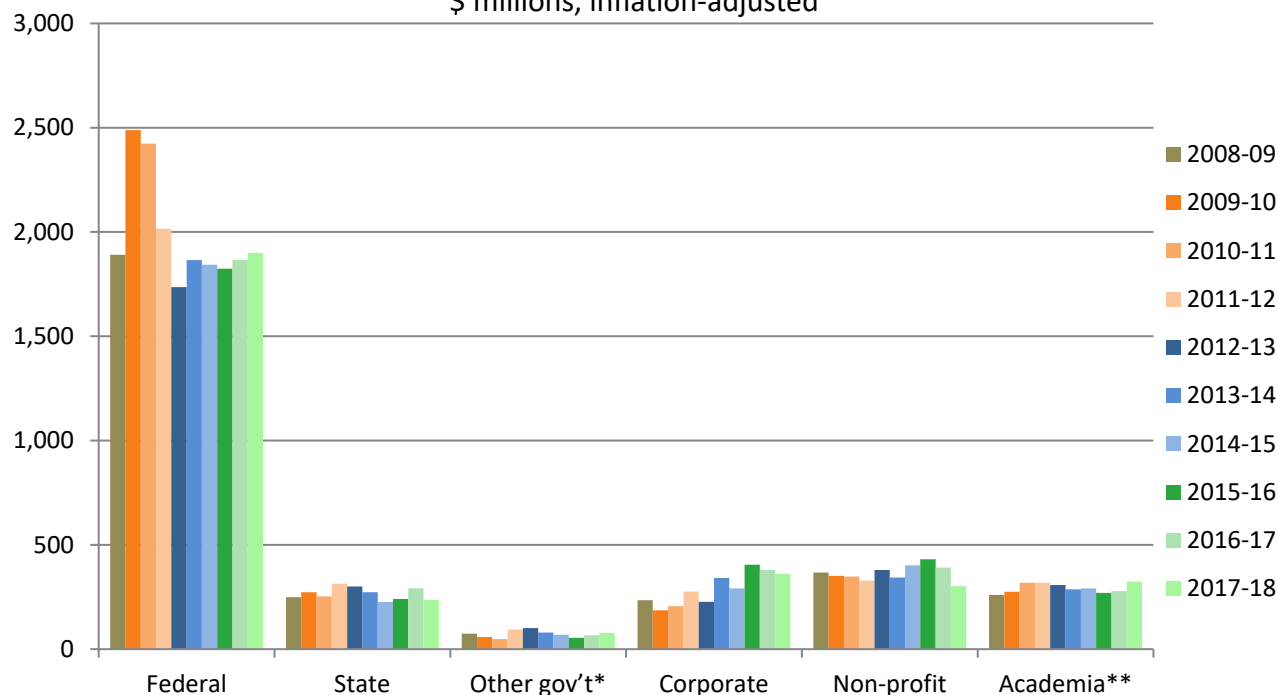
\* Other government includes agricultural market order boards.

\*\*Academia includes other research universities and institutions, DOE labs, campuses and UCOP.

Direct federal funding to UC during Q218 was about \$535 million or 16% above the same period last year. This is the first quarter of the federal fiscal year, and with the passage of the Omnibus Budget, it is likely that federal agency funding will remain high. Section VII of this report provides agency-level projections of federal support for the year.

### Q1-2 Funding by sponsor category, 2008-09 to 2017-18

\$ millions, inflation-adjusted



In addition to \$1.9 billion in direct federal funding for the first two quarters of 2017-18, UC also received about \$343 million in federal funds indirectly, as flow-through funds (also referred to as sub-awards) from non-federal sponsors. The main sources of flow-through funds for this period are other research universities, state agencies and non-profit organizations with federal awards.

### Flow-through funds by sponsor category, Q1-2, FY 2017-18 (\$ millions)

<i>SPONSOR</i>	<i>FLOW-THROUGH \$</i>	<i>AWARD TOTAL \$</i>	<i>% OF TOTAL</i>
<i>State</i>	44.4	235.8	18.8%
<i>Other gov't.</i>	8.5	78.3	10.9%
<i>Business</i>	29.1	360.4	8.1%
<i>Non-profit</i>	51.5	301.9	17.1%
<i>Higher education</i>	157.7	197.5	79.8%
<i>DOE Labs</i>	20.7	28.3	73.0%
<i>Campuses/OP</i>	31.3	96.8	32.3%
<b><i>Total \$</i></b>	<b>343.1</b>	<b>1,299.1</b>	<b>26.4%</b>

When sub-awards are included, the federal contribution to UC's award funding for the year to date is about 70% of the total. Federal contributions are elevated during the first quarter of the UC fiscal year (final federal quarter), so the full-fiscal-year federal contribution is closer to two-thirds.

### III. Award trends by project type

Research awards from all sources for the year to date amounted to about \$2.7 billion, including \$256 million in clinical trial sponsorship. Training, service and other awards came to about \$535 million. The dramatic increase in clinical trial funding since 2013-14 is due almost entirely to corporate sponsorship. Last year, during FY 2016-17, clinical trial awards totaled nearly \$510 million, \$456 million of this from corporate sponsors. This trend is likely to parallel the continued growth of the global pharmaceutical industry during 2017-18 and beyond.

### Q1-2 Award amounts by project type \$ millions, inflation-adjusted

<i>PROJECT TYPE</i>	<i>2008-09</i>	<i>2009-10</i>	<i>2010-11</i>	<i>2011-12</i>	<i>2012-13</i>	<i>2013-14</i>	<i>2014-15</i>	<i>2015-16</i>	<i>2016-17</i>	<i>2017-18</i>
<i>Research</i>	2,296	2,869	2,786	2,634	2,213	2,285	2,324	2,350	2,389	2,407
<i>Clinical trials</i>	108	104	100	110	123	268	181	262	235	256
<i>Training</i>	204	227	216	185	187	174	166	164	151	135
<i>Public service</i>	246	197	222	219	281	260	181	234	243	249
<i>Other projects</i>	222	235	274	199	246	203	271	214	256	151
<b><i>TOTAL \$</i></b>	<b>3,076</b>	<b>3,632</b>	<b>3,597</b>	<b>3,347</b>	<b>3,050</b>	<b>3,190</b>	<b>3,122</b>	<b>3,224</b>	<b>3,273</b>	<b>3,198</b>

#### IV. Award trends by recipient location

Award totals for the year to date are about 2% below last year overall, after adjusting for an inflation rate of almost 3% inflation, but with significant variation among locations.

##### Q1-2 Awards by location

\$ millions, inflation-adjusted

UC LOCATION	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	Yearly change
San Francisco	596	651	703	609	723	833	758	817	826	753	-8.9%
San Diego	534	625	574	547	497	586	485	497	492	499	1.5%
Los Angeles	588	701	689	560	413	445	513	506	504	532	5.6%
Davis	384	432	463	496	430	387	431	435	376	408	8.4%
Berkeley	418	576	575	541	485	404	443	440	515	443	-14.1%
Irvine	175	200	208	178	155	167	161	204	175	166	-5.4%
Santa Barbara	107	159	117	125	94	118	90	84	104	105	0.8%
Riverside	52	76	58	72	59	58	64	69	76	76	0.5%
LBNL	82	90	87	79	66	70	72	65	102	82	-19.8%
Santa Cruz	79	86	86	89	78	78	76	66	56	101	79.6%
ANR	15	8	9	8	10	9	10	13	14	16	11.7%
Merced	10	16	12	12	13	22	15	11	21	13	-38.4%
UCOP	37	13	17	31	27	13	6	16	10	4	-58.9%
<b>TOTAL \$</b>	<b>3,076</b>	<b>3,632</b>	<b>3,597</b>	<b>3,347</b>	<b>3,050</b>	<b>3,190</b>	<b>3,122</b>	<b>3,224</b>	<b>3,273</b>	<b>3,198</b>	<b>-2.3%</b>

Reports of state and non-profit funding for the year to date are somewhat behind last year's pace, and this accounts for some of the location-specific declines in funding. For example, Berkeley received an \$80 million federal/state Title IV-E social work training program award during Q1 of last year. This is expected to renew for the current year, but has not been reported yet.

#### V. Significant campus awards

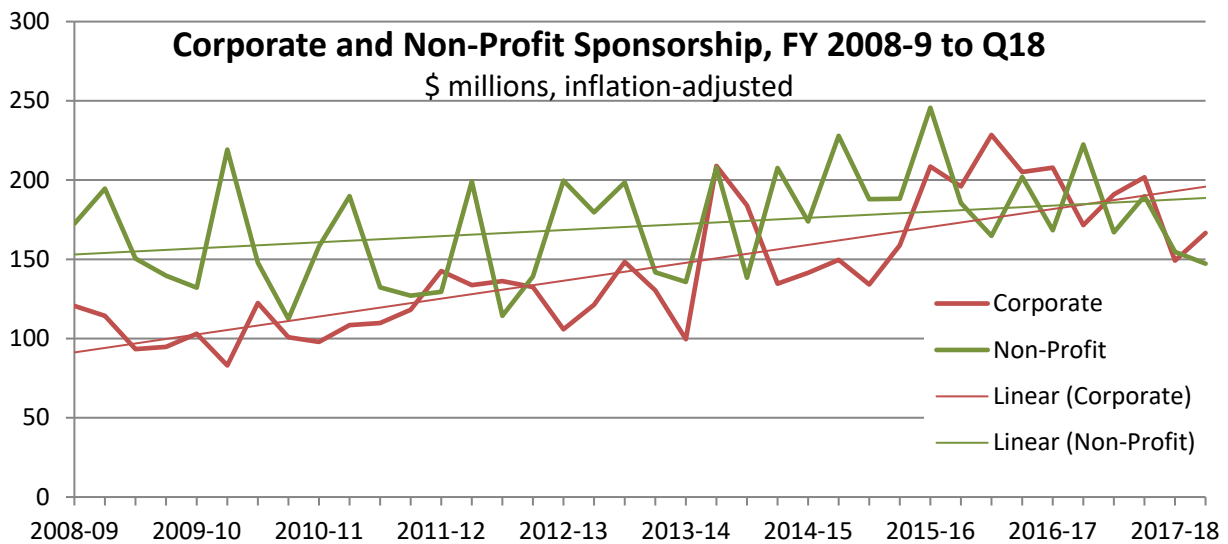
During Q218, UC received more than 4,500 contracts and grants from about 1,500 sponsors, plus 1,100 Material Transfer Agreements. Listed below are significant awards reported this quarter by campuses, Agriculture & Natural Resources, Lawrence Berkeley Lab and the Office of the President. The largest of these was the California Department of Education's award to UC Santa Cruz of \$28.6 million to oversee the state's Smarter Balanced K-12 student assessment system through the UCSC Silicon Valley Extension. (For information about this program, see <http://www.smarterbalanced.org/release-smarter-balanced-partners-uc-santa-cruz/>).

UC LOCATION	SPONSOR CATEGORY	SPONSOR	PROJECT TITLE	AMOUNT
Berkeley	DOE Laboratory	Lawrence Berkeley Laboratory	Scholarly Resource Content and Library Services	\$15,136,000
Davis	State	California Department of Social Services	UC CalFresh Nutrition Education Program (UC CalFresh)	\$11,000,000

Irvine	Corporate	Xenetic Biosciences, Inc.	A Phase 2, clinical study of Sodium Cridanimod in conjunction with progestin therapy in patients with endometrial carcinoma	\$3,688,000
Los Angeles	Federal	National Cancer Institute	AIDS Malignancy Consortium (AMC)	\$23,267,000
Merced	Federal	Office Of Postsecondary Education	TRiO Upward Bound Math and Science	\$264,000
Riverside	Federal (subaward via UC Davis)	U.S. Centers for Disease Control	South Western Vector-Borne Disease Regional Center of Excellence	\$3,757,000
San Diego	State	California Institute For Regenerative Medicine	A phase 1b/2a study of the ROR1-targeting monoclonal antibody, Cirmtuzumab, and the bruton tyrosine kinase inhibitor, Ibrutinib, in b-cell cancers	\$18,293,000
San Francisco	State	California Department Of Public Health	Tuberculosis surveillance and data analysis and support to improve tuberculosis program management capacity for 61 California local health jurisdictions	\$22,090,000
Santa Barbara	Federal	National Aeronautics and Space Administration	Synthesizing optically- and carbon export-relevant particle size distributions for the exports field campaign	\$3,240,000
Santa Cruz	State	California Department of Education	Smarter Balanced Formative Tools/Assessments	\$28,650,000
Agriculture And Natural Resources	County Government	San Diego County	UC Cooperative Extension San Diego County Support, 2015-19	\$1,069,000
Lawrence Berkeley Lab	Corporate/Federal	Oak Ridge National Laboratory	Block-structured Adaptive Mesh Refinement Co-Design Center for DOE's Exascale Computing Project	\$2,589,000

## VI. Private Funding Sources

Private sources of funding have been steadily increasing in both dollar amount and relative importance.



Private project funding to UC declined during the recession, but has been steadily increasing since then. Awards from corporate sponsors in FY 2013-14 show a significant spike as a result of a few very large, multi-year clinical trial research contracts. The growth in corporate funding that began in 2015-16 is also due to an increase in clinical trial sponsorship, and reflects both the larger number and increasing cost of conducting clinical trials. While there is considerable year-to-year and quarter-to-quarter variation in private sponsorship, 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, and the pharmaceutical industry continues to invest in developing new therapies and treatments.

## VII. Federal Funding Forecast

Federal funding for UC's research, training and service programs has been relatively stable for the past several years, ranging from \$3.3 to \$3.4 billion before accounting for inflation. A series of three Bipartisan Budget Acts in 2013, 2015 and now 2018, lifted the sequestration cuts that had measurably reduced federal awards. With the passage of the Omnibus Budget in late March 2018, Congress has chosen to increase discretionary appropriations for agency-funded research research.

Overall, the increases in the 2018 budget could increase UC's federal agency funding by about \$235 million for federal FY 2018. This is principally driven by the increases proposed for UC's two largest sources of external funds — NIH and NSF. The percentage increases noted here are derived from budget analyses done by UC's Federal Government Relations and by the American Association for the Advancement of Science (<https://www.aaas.org/news/omnibus-would-provide-largest-research-increase-nearly-decade>).

	<i>FY 2017 Funding (\$ millions)</i>	<i>% Increase</i>	<i>\$ Increase</i>
<b>Dept. of Agriculture</b>			
National Institute for Food and Agriculture	36.5	3.3%	1.2
Other Programs and Offices	24.5	5.8%	1.4
<b>Dept. of Commerce</b>			
National Oceanic and Atmospheric Admin. (NOAA)	33.2	6.7%	2.2
National Institute of Standards and Technology	2.3	25.9%	0.6
Other Programs and Offices	1.2	0.0%	0.0
<b>Dept. of Defense</b>	321.5	6.2%	19.9
<b>Dept. of Energy</b>	97.9	14.1%	13.8
<b>Dept. of Homeland Security</b>	6.1	7.6%	0.5
<b>Dept. of Veterans Affairs</b>	23.5	7.3%	1.7
<b>Dept. of Health &amp; Human Services</b>			
National Institutes of Health	1,947.1	8.7%	169.4
Other Programs and Offices	123.7	0.0%	0.0
<b>National Aeronautic &amp; Space Administration</b>	77.7	5.5%	4.3
<b>National Science Foundation</b>	510.6	3.9%	19.9
<b>Other Agencies</b>	121.2	0.0%	0.0
<i>Total \$</i>	<b>3,327.0</b>		<b>234.9</b>

One of the most significant differences between the President's Budget Proposal and the Omnibus Budget Bill is continued Congressional support for climate science. Projects including monitoring and data collection efforts, fundamental research and climate change mitigation programs are funded through a variety of federal agencies, including the National Science Foundation, NASA, the Environmental Protection Agency, the National Oceanic and Atmospheric Administration (NOAA, which is part of the Commerce Department), the Departments of Energy and Defense, and the U.S. Geological Survey. Rather than cutting or terminating these programs, as the President proposed, Congress voted to keep funding for climate science at about prior levels. UC's federal funding for climate research, including work at Lawrence Berkeley and Lawrence Livermore National Laboratories, is estimated at about \$218 million annually, and if the agencies follow through on the funding priorities of the Omnibus Budget, this support is likely to remain relatively stable, at least through fiscal 2018.

Link urls:

UC Information Center: <https://www.universityofcalifornia.edu/infocenter>

UC's research award history: <https://www.universityofcalifornia.edu/infocenter/uc-research-award-history>

Geographic representation of UC's project sponsors:

<https://www.universityofcalifornia.edu/infocenter/sponsored-projects>

Data tables summarizing UC's annual award and proposal totals: <https://www.universityofcalifornia.edu/infocenter/awards-and-proposals>

Research section of the UCOP Institutional Research and Academic Planning IRAP website:

<http://www.ucop.edu/institutional-research-academic-planning/content-analysis/research/index.html>