

**University of California Berkeley
Research Administration and Compliance**

**Sponsored Projects Office
Annual Report
Fiscal Year 2012**



The University of California, Berkeley

Chancellor

Robert J. Birgeneau

Executive Vice Chancellor and Provost

George W. Breslauer

Vice Chancellor for Research

Graham R. Fleming

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Assistant Vice Chancellor - Research Administration and Compliance: Patrick Schlesinger

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Annual Report, Fiscal Year 2012

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Research Administration and Compliance

Overview

The **University of California, Berkeley** is one of the world's leading universities in research, teaching, and public service, with an enrollment of 25,885 undergraduates and 10,257 graduate students in Fall 2011. The campus employs 1,582 full-time and 500 part-time faculty in more than 130 academic departments and more than 80 interdisciplinary research units. UC Berkeley is divided into 14 colleges and schools, most of which are subdivided into departments. The campus offers over 7,000 courses in 350 degree programs and produces more Ph.D.s annually than any other U.S. university.

The Research Administration and Compliance Office (RAC), led by Assistant Vice Chancellor Patrick Schlesinger, is the administrative office at UC Berkeley responsible for facilitating and ensuring campus compliance with federal, state, and university regulations pertaining to research administration, including policies governing research animal care and use, human research subjects protection, financial conflict of interest in research, export controls, and grants and contracts administration. RAC is under the purview of the Office of the Vice Chancellor for Research.

The Sponsored Projects Office (SPO) at UC Berkeley is responsible for endorsing and authorizing proposals to and interpreting, negotiating, and accepting contracts and grants for projects funded by federal and state agencies, foundations, and other public and private sources. SPO prepares and negotiates all subawards for collaborative research. SPO also provides resources for finding funding opportunities, and coordinates application to programs with institutional limits on proposals.

Berkeley Coeus is the campus research contract and grant system of record and is managed by the RAC Information Systems team. The Berkeley Coeus web site, <http://coeus.spo.berkeley.edu/>, provides UC Berkeley departments and organized research units with reports on contract and grant proposals and awards administered within the unit, based on current information in the Berkeley Coeus database system. The Berkeley Coeus web site also provides reports on funding by sponsor category and funding by department that can be accessed by the public.

The Animal Care and Use Committee (ACUC) at UC Berkeley is the institutional committee charged with reviewing and approving all proposed uses of live vertebrate animals in teaching and research. The ACUC's activities are mandated by the U.S. Animal Welfare Act and Public Health Service Policy. The RAC Office for Animal Care and Use (OACU) provides the administrative infrastructure required to support the Committee's work to review, approve, and administer those activities.

The Committee for Protection of Human Subjects (CPHS) serves as the institutional review board (IRB) at UC Berkeley. The IRB must review and approve the use of human subjects in research. The process is designed to ensure that the rights and welfare of human subjects are protected throughout their participation in research projects. UC Berkeley operates within the regulations and guidelines set forth by federal authorities, primarily the Office for Human Research Protections and the Food and Drug Administration, as well as other bodies. The Office for the Protection of Human Subjects (OPHS) provides operational and staffing support to the CPHS and administers all human subjects research performed on behalf of UC Berkeley.

The faculty Conflict of Interest Committee is responsible for the review and assessment of all financial disclosures related to research projects at UC Berkeley and for determining any actions required to ensure that real or perceived financial conflicts of interest are managed or eliminated. RAC staff provide the operational support required to implement and administer COI Committee decisions.

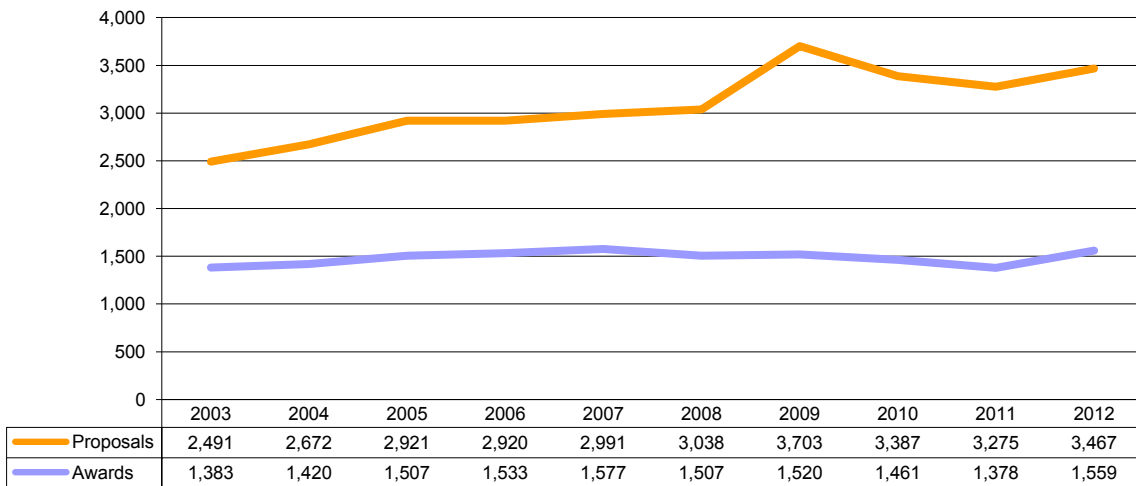
Research Proposals and Awards, Fiscal Year 2012

Funding Overview

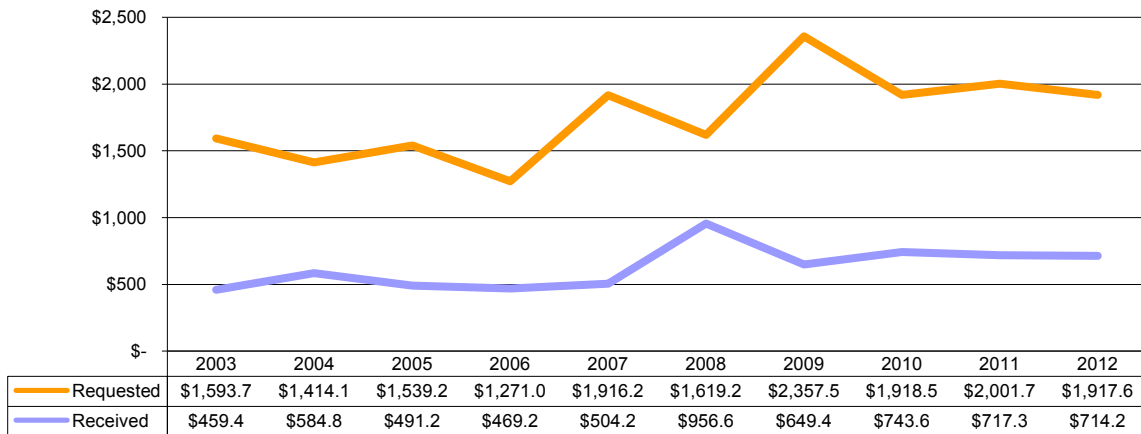
The Research Administration and Compliance Office is pleased to present this annual report on Berkeley’s sponsored research, teaching, and public service for fiscal year 2012, from July 1, 2011 through June 30, 2012. In fiscal year 2012, the Berkeley campus received \$714.2 million in contract and grant awards, a decrease of slightly more than one-half of one percent from the prior year funding of \$717.3 million.

The campus submitted 3,467 proposals requesting \$1.9 billion in fiscal year 2012, with the number of submissions up 5 percent and the requested funding down 5 percent from the prior year.

Number of Proposals Submitted Compared with Awards Received, FY 2003 - 2012



**Funding Dollars Requested Compared with Funding Received, FY 2003 - 2012
(dollars in millions)**

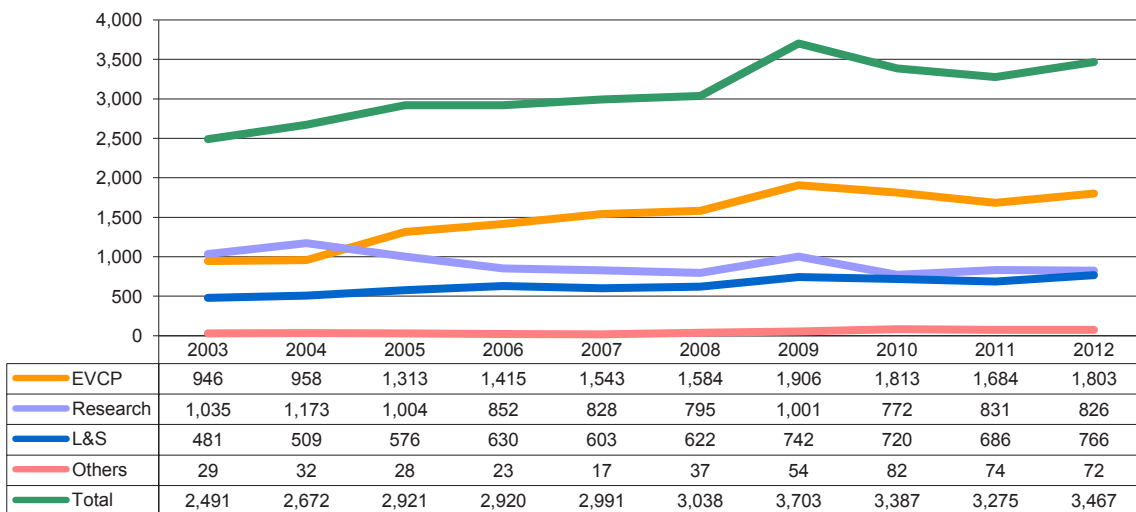


Research Proposals and Awards, Fiscal Year 2012

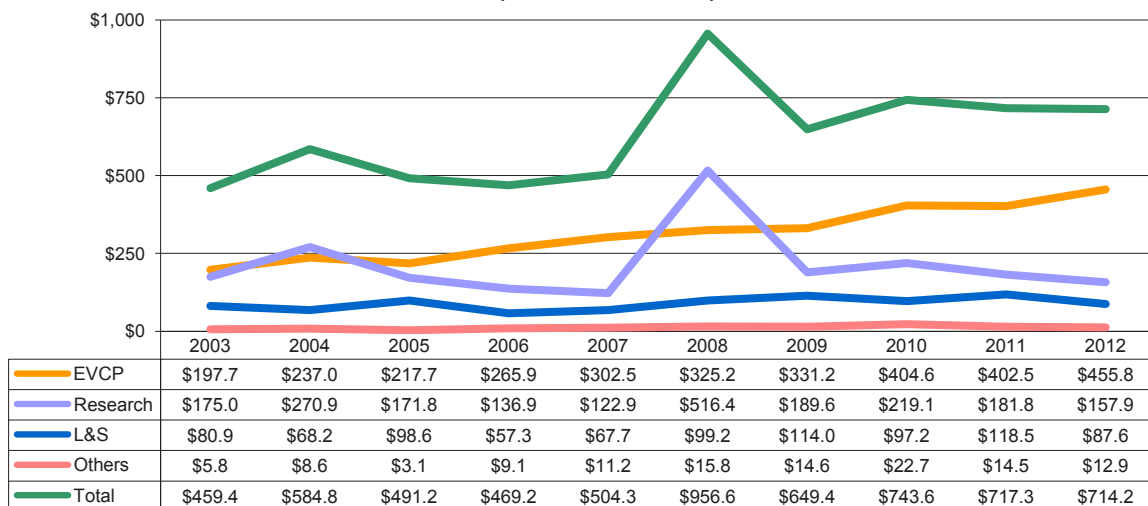
Campus Control Units

The following statistics reflect funding activity for campus control units in fiscal year 2012. Departments reporting to the Executive Vice Chancellor and Provost (EVCP) include the Colleges of Chemistry, Engineering, Natural Resources, and Environmental Design, as well as Optometry, Law, Journalism, Public Policy, Public Health, Education, Business, Social Welfare, and others. Organized Research Units (ORUs) report to the Vice Chancellor for Research and span many disciplines. These institutes, centers, and departments exist primarily to conduct research, and include the Space Sciences Laboratory, the Institute of Transportation Studies, the Berkeley Seismological Laboratory, and many others. The College of Letters and Science, or L&S, includes Biological, Physical, Social Science, and Arts and Humanities Divisions.

Number of Proposals Submitted by Control Unit, FY 2003 - 2012



Ten Year Funding Dollar Summary by Control Unit, FY 2003 - 2012
(dollars in millions)



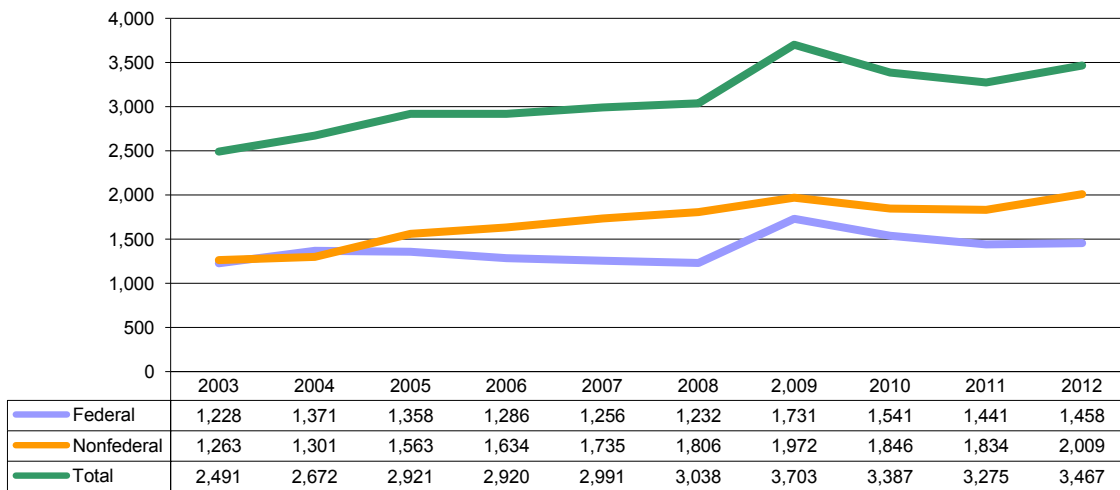
Research Contracts and Grants by Funding Source Overview - All Sponsors

In fiscal year 2012, federal funding once again comprised the largest portion of the total amount received, at 56 percent of the total, a drop from 63 percent of the total last fiscal year.

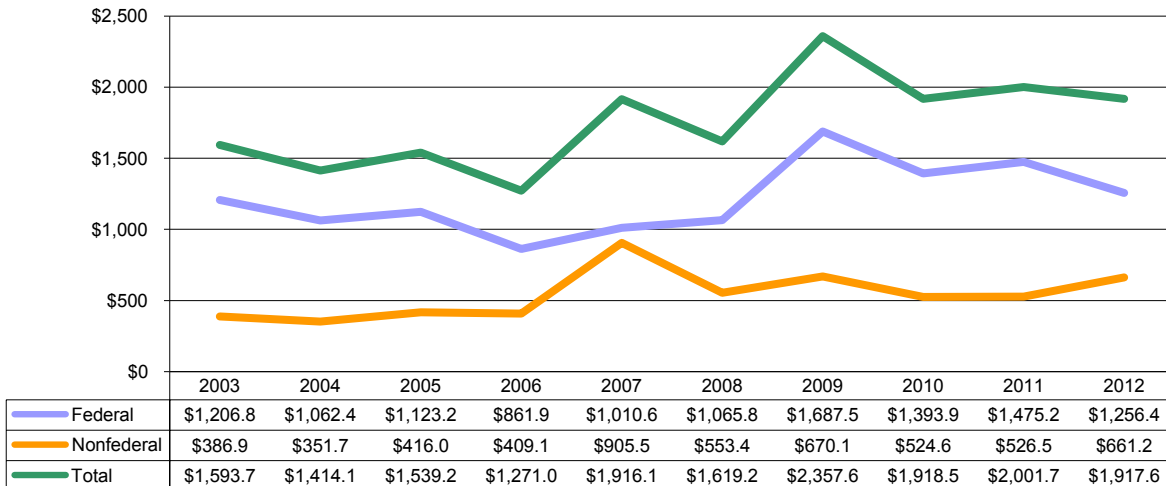
Nonprofit organizations, including other institutions of higher education, foundations and charities, and research institutes, showed a 31 percent increase from fiscal year 2011, at \$126.5 million. \$51.7 million was awarded from universities outside the UC system, an increase of 26 percent from fiscal year 2011. \$43.6 million was awarded by industry sponsors.

Funding from nonfederal governmental sources included \$111.2 million from State of California agencies, an increase of 10 percent from last year, and \$7.7 million from foreign governments.

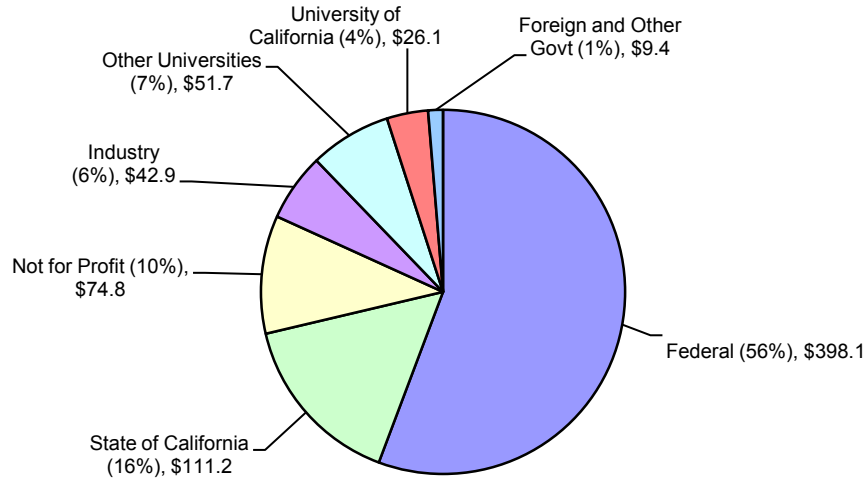
Number of Proposals Submitted by Sponsor Category, FY 2003 - 2012



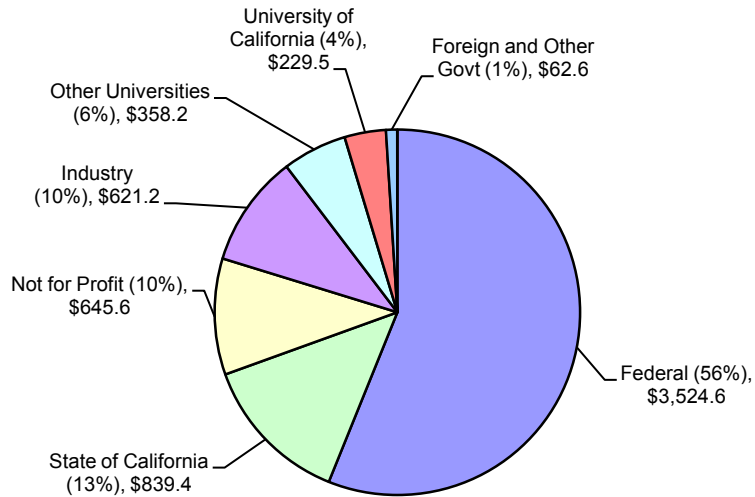
**Funding Dollars Requested by Sponsor Category, FY 2003 - 2012
(dollars in millions)**



**Fiscal Year 2012 Funding Dollars by Sponsor Category
(\$714.2 million total - dollars in millions)**



**Ten Year Funding Dollar Summary by Sponsor Category,
FY 2003 - 2012 (\$6.3 billion total - dollars in millions)**

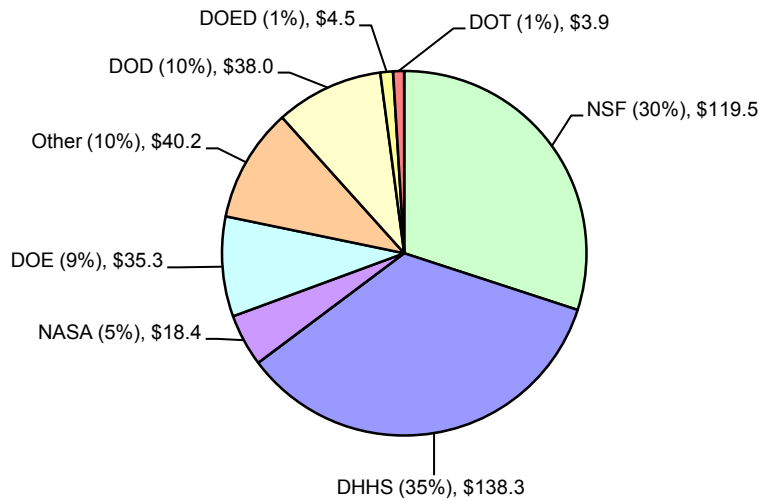


Research Contracts and Grants by Funding Source Federal Agencies

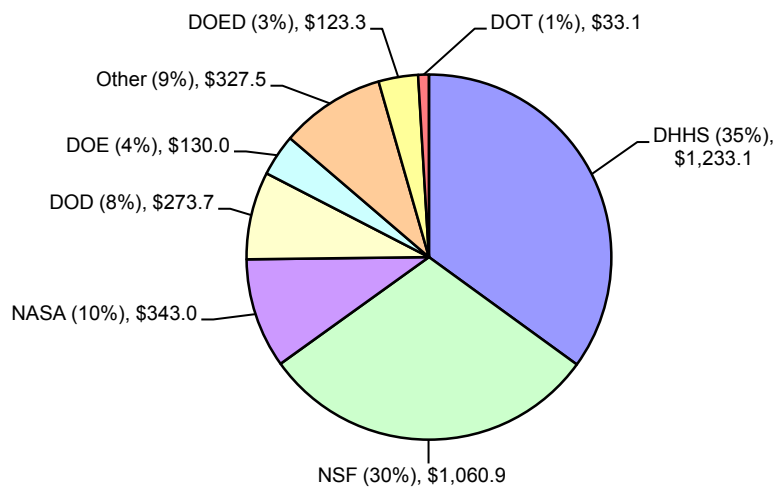
Funding from federal sources totaled \$398.1 million in fiscal year 2012, a decrease of 12 percent from the \$452.7 million received in fiscal year 2011. The Department of Health and Human Services provided the largest share at 35 percent of federal funds received, with \$138.3 million in funding. The National Science Foundation awarded 30 percent of federal funding with \$119.5 million. The Department of Energy, including the National Laboratories, showed a 45 percent increase this year, at \$57.3 million.

The decline is in part due to the end of funding awarded under the American Recovery and Reinvestment Act (ARRA), enacted in 2009. Only \$1.9 million in new ARRA funding was received this year, down from \$12.1 million last fiscal year and \$69.3 million in fiscal year 2010. All funding awarded under ARRA must be fully expended by September 30, 2013.

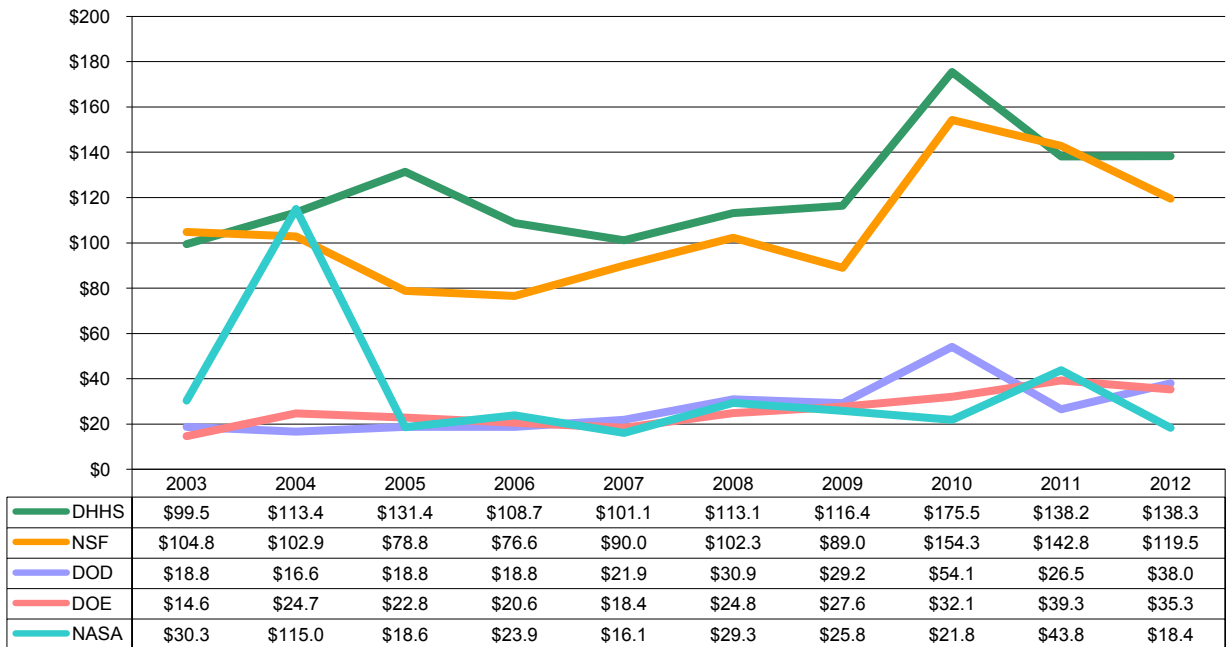
**Fiscal Year 2012 Funding Dollar Summary by Federal Sponsor
(\$398.1 million total - dollars in millions)**



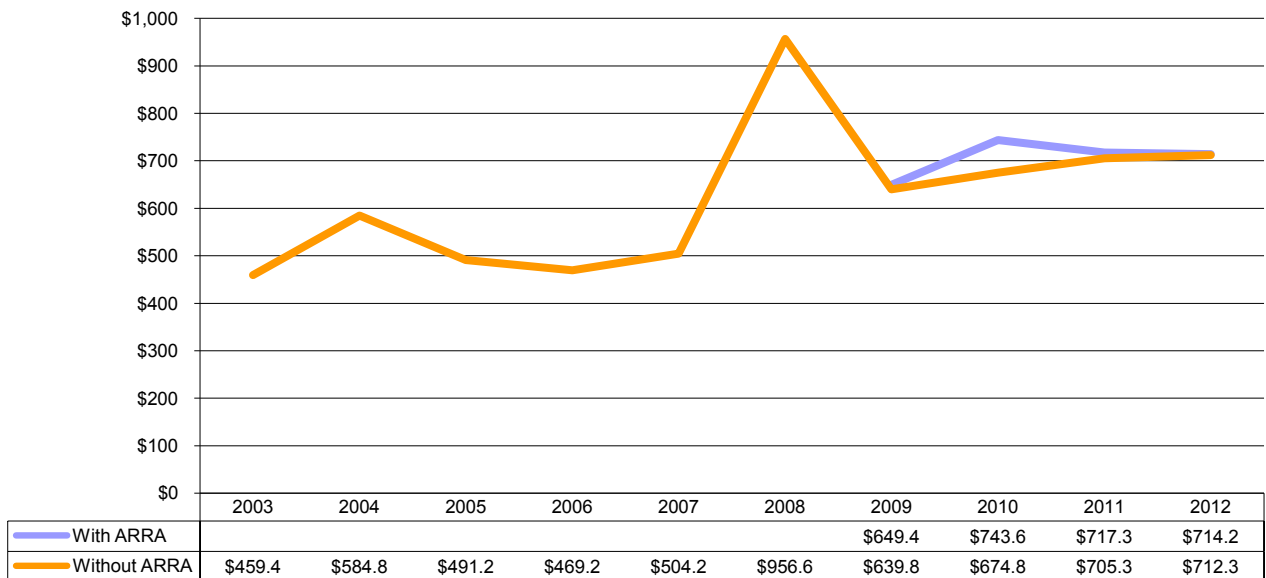
**Ten Year Funding Dollar Summary by Federal Sponsor, FY 2003 - 2012
(\$3.5 billion total - dollars in millions)**



Ten-Year Funding Dollar Summary for Top 5 Federal Sponsors, FY 2003 - 2012
(dollars in millions)



Ten-Year Funding Dollar Summary Showing ARRA Impact, FY 2003 - 2012
(dollars in millions)

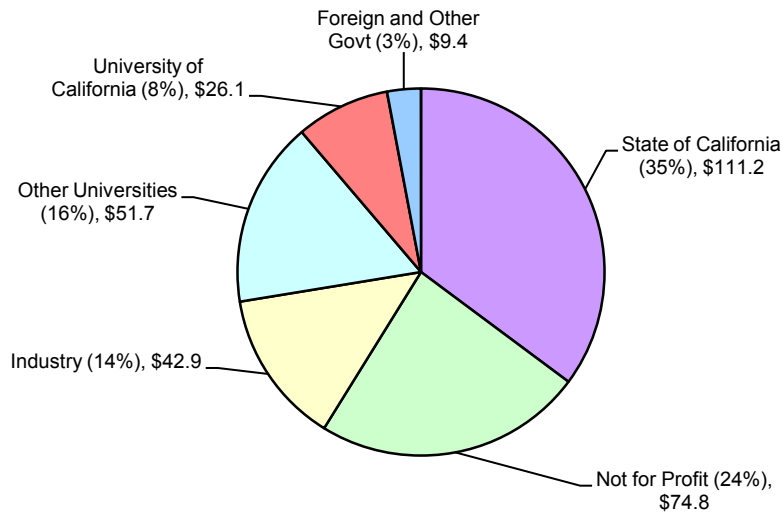


Research Contracts and Grants by Funding Source Nonfederal Agencies

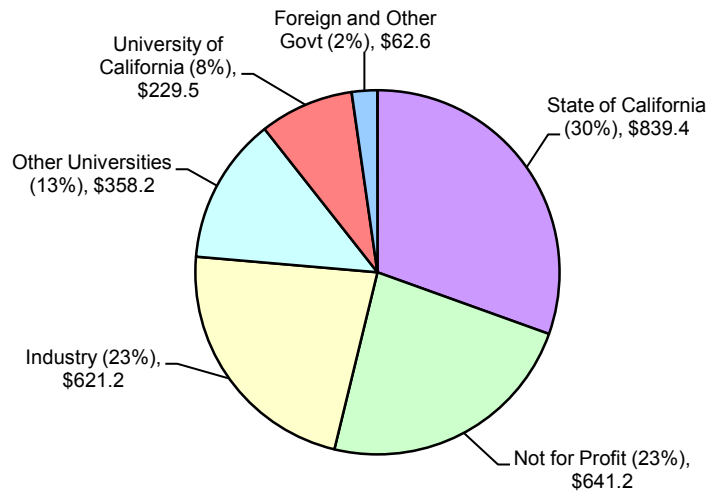
Funding from nonfederal sources totaled \$316.1 million in fiscal year 2012, up 19 percent from last year.

Of the \$316.1 million, \$120.7 million came from nonfederal governmental sources, \$61.9 million from foundations and charitable organizations, \$51.6 million from universities outside the University of California system, and \$43.6 million from industry sources. Funding from other University of California campuses nearly doubled from last year, at \$26.1 million.

**Fiscal Year 2012 Funding Dollar Summary by Nonfederal Sponsor
(\$316.1 million total - dollars in millions)**



**Ten Year Funding Dollar Summary by Nonfederal Sponsor,
FY 2003 - 2012 (\$2.8 billion total - dollars in millions)**



Funding by Sponsor - Five-Year Funding Summary

	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Federal					
Agriculture	\$3,781,047	\$6,143,314	\$6,996,752	\$3,542,326	\$4,439,231
Commerce	809,992	11,486,398	923,739	1,434,551	(116,927)
Defense	30,922,189	29,188,030	54,078,069	26,520,550	38,078,760
Education	7,312,265	8,228,159	6,877,414	24,393,606	4,541,453
Energy	4,197,711	5,525,739	19,342,668	20,871,045	35,334,920
Environmental Protection Agency	1,003,414	374,921	928,385	8,548,007	350,006
Health and Human Services	113,056,292	116,367,931	175,522,394	138,238,583	138,290,021
Interior	1,627,843	1,499,058	6,513,849	1,264,267	1,488,423
National Aeronautics and Space Administration	29,278,087	25,810,247	21,771,876	43,783,361	18,428,100
National Endowments for the Arts and Humanities, Institute of Museum and Library Services	1,547,996	1,225,119	1,234,191	1,079,324	851,264
National Science Foundation	102,286,247	88,983,109	154,295,580	142,793,198	119,474,084
Other	22,864,898	26,971,541	17,590,266	35,923,019	\$33,061,964
Transportation	3,865,672	3,357,402	2,333,575	4,355,516	3,874,670
Subtotal	322,553,653	325,160,968	468,408,758	452,747,423	398,095,969
Industry					
Foreign Industry	352,975,698	4,453,485	6,165,252	11,152,075	9,932,072
U.S. Industry	31,554,819	17,392,719	33,121,249	34,013,810	32,940,151
Subtotal	384,530,517	21,846,204	39,286,501	45,165,885	42,872,223
Nonfederal Governmental					
Foreign Government Agencies	3,006,848	4,852,570	2,204,657	1,030,059	7,949,253
Local Agencies and Schools	9,545,104	1,131,942	603,005	1,210,093	1,124,050
Other U.S. Government Agencies	240,969	448,379	214,875	903,858	352,223
State Agencies	78,505,619	145,484,866	101,468,369	100,751,627	111,236,143
Subtotal	91,298,540	151,917,757	104,490,906	103,895,637	120,661,669
Not for Profit					
Foreign Organizations	16,858,767	9,438,823	6,325,592	4,912,024	8,207,035
Other U.S. Organizations	15,855,643	19,934,800	23,259,706	8,618,833	11,515,856
U.S. Foundations and Charities	55,906,970	45,610,004	49,395,803	47,240,829	60,254,209
U.S. Institutes of Higher Education	32,405,088	46,033,446	33,151,952	39,208,177	46,497,705
Subtotal	121,026,468	121,017,073	112,133,053	99,979,863	126,474,805
University of California					
Subtotal	37,143,980	29,485,529	19,295,117	15,461,607	26,069,762
Total	\$956,553,158	\$649,427,531	\$743,614,335	\$717,250,415	\$714,174,428

Campus Control Units - Five-Year Funding Summary

Control Unit	Division	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Executive Vice Chancellor and Provost (EVCP)						
	BAM/PFA	\$797,501	\$555,630	\$611,709	\$724,358	\$625,400
	Cal Performances/SMA	1,324,500	634,000	774,000	772,500	87,000
	College of Natural Resources	31,063,361	35,411,141	38,270,393	37,183,569	41,792,023
	College of Chemistry	26,611,323	30,039,465	30,269,304	29,423,841	43,871,080
	College of Engineering	121,220,404	94,149,039	146,447,668	130,592,566	181,938,008
	College of Environmental Design	139,511	290,190	10,000	28,608	
	Division of Undergraduate Education	2,617,393	515,052	2,958,382	4,087,392	80,688
	Executive Vice Chancellor and Provost		50,000	200,000	65,000	
	Goldman School of Public Policy	1,367,291	708,009	687,566	790,731	187,477
	Graduate Division	17,136,203	17,934,515	10,509,168	36,253,370	26,458,996
	Graduate School of Education	7,019,514	13,381,485	18,446,201	10,390,826	14,124,907
	Haas School of Business	24,000	45,000	700,246	528,485	422,450
	International and Area Studies	3,929,824	3,330,837	3,558,878	9,192,657	(90,878)
	School of Information	11,700	680,956	1,049,177	1,009,921	1,825,517
	School of Journalism	3,503,364	1,956,175	700,925	1,469,375	720,000
	School of Law	3,912,692	2,524,773	2,715,798	3,217,792	3,988,351
	School of Optometry	10,090,828	11,021,107	9,035,883	13,428,484	11,164,801
	School of Public Health	40,064,685	38,838,683	87,306,424	58,504,556	74,912,836
	School of Social Welfare	36,978,642	54,332,202	33,599,934	52,073,058	38,687,691
	The Library	1,871,780	7,614,619	1,557,856	2,576,004	837,773
	Vice Provost Academic Affairs and Faculty Welfare	15,448,639	17,183,248	14,907,115	9,758,309	14,148,595
	Vice Provost Academic Planning and Facilities	35,440		250,000	357,849	
Subtotal		325,168,595	331,196,126	404,566,627	402,429,251	455,782,715
College of Letters and Science (L&S)						
	College of Letters and Science		2,330,000	105,000	68,100	
	Division of Arts and Humanities	983,113	2,197,496	2,330,266	890,912	747,415
	Division of Physical Sciences	50,929,750	39,793,403	36,388,966	36,774,812	37,191,289
	Division of Social Sciences	3,241,700	5,930,990	4,544,948	6,492,945	4,471,338
	Biological Sciences	42,033,924	63,768,106	53,839,381	74,252,220	44,157,556
	Undergraduate Division	2,051,347		6,900		1,008,781
Subtotal		99,239,834	114,019,995	97,215,461	118,478,989	87,576,379

Control Unit	Division	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Vice Chancellor - Administration						
	Associate VC - Business and Administrative Services					
	Associate VC - Health and Human Services		509,600	1,446,208	1,879,689	679,370
	Intercollegiate Athletics Division		500,000	(485,000)	25,000	
	Office of the Vice Chancellor - Administration			50,000		
	Public Safety	99,487		25,000		
Subtotal		99,487	1,009,600	1,036,208	1,904,689	679,370
Vice Chancellor - Research						
	VC Administrative Units	2,084,720	3,642,985	778,499	3,406,368	2,167,350
	Other Research Units	59,370,220	82,008,626	112,893,083	51,007,020	64,415,178
	VC Research	5,512,500	(100,000)	82,568	597,474	360,000
	Museums and Field Stations	1,595,179	3,087,030	3,231,471	5,343,174	7,647,704
	Vice Chancellor for Research ORUs	447,825,735	100,993,121	102,125,211	121,488,446	83,337,053
Subtotal		516,388,354	189,631,762	219,110,832	181,842,482	157,927,285
Vice Chancellor - Student Affairs						
	Admissions and Enrollment	3,080,573	3,844,994	935,892	2,283,653	5,884,962
	Residential and Student Services Programs		30,000	1,006,820		229
	Vice Chancellor - Student Affairs Division	11,068,323	7,344,737	8,924,367	5,547,445	6,126,328
Subtotal		14,148,896	11,219,731	10,867,079	7,831,098	12,011,519
Vice Chancellor for Equity and Inclusion						
	Office of Equity and Inclusion	800,000	1,719,211	568,128		
Subtotal		800,000	1,719,211	568,128		
Other						
	Capital Projects			10,250,000	2,750,000	
	Information Services & Technology	707,992	631,106		2,013,906	197,160
		707,992	631,106	10,250,000	4,763,906	197,160
Total		\$956,553,158	\$649,427,531	\$743,614,335	\$717,250,415	\$714,174,428

Largest Awards, Fiscal Year 2012

Davis, Sam, School of Social Welfare, "Title IV-E Social Work Training Program," California Department of Social Services, \$33,003,612

Vujic, Jasmina L., Engineering Research Support Organization, "Nuclear Science and Security Consortium (NSSC)," U.S. Department of Energy, \$26,500,000

Bayen, Alexandre M., Engineering Research Support Organization, "Research and Innovation for Traffic Operations," Caltrans, \$14,971,306

Smith, Martyn T., Environmental Health Sciences, "Toxic Substances in the Environment," National Institute of Environmental Health Sciences, \$13,611,270

Franklin, Michael, Engineering Research Support Organization, "Making Sense at Scale with Algorithms, Machines and People," National Science Foundation, \$10,000,000

Portnoy, Daniel A., Molecular and Cell Biology, "Intracellular Pathogens and Innate Immunity," National Institute of Allergy and Infectious Diseases, \$9,551,893

Wagner, David, Engineering Research Support Organization, "SCRUB: Secure Computing Research for Users' Benefit," Intel Corporation, \$5,340,000

Sastry, S. Shankar, Engineering Research Support Organization, "Sustainability in Development Solutions (SDS)," U.S. Agency for International Development, \$5,000,000

Ragland, David, School of Public Health, "Sobriety Checkpoint Mini-Grant 2011-2012," California Office of Traffic Safety, \$4,676,637

Horowitz, Roberto, Engineering Research Support Organization, "Innovative Transportation," Caltrans, \$4,611,620

Segalman, Rachel A., Chemical and Biomolecular Engineering, "Control of Thermal and Electrical Transport in Organic and Composite Materials Through Molecular and Nanoscale Structures," Air Force Office of Scientific Research, \$4,499,999

Russell, Stuart J., Engineering Research Support Organization, "OUTBIDS: Open-Universe Theory for Bayesian Inference, Decision, and Sensing," Defense Advanced Research Projects Agency, \$4,183,127

Riley, Lee W., School of Public Health, "Global Health Fellows and Scholars Research Training," National Institutes of Health Fogarty International Center, \$4,078,084

Keltner, Dacher, Institute for Personality and Social Research, "Expanding the Science and Practice of Gratitude," University of California, Davis, \$3,986,045

Blumstein, Carl J., California Institute for Energy and Environment, "UC Research in Energy Efficiency in Buildings and Industry," California Energy Commission, \$3,978,590

Sedlak, David L., Engineering Research Support Organization, "Re-Inventing America's Urban Water Infrastructure," Stanford University, \$3,682,119

Cervero, Robert B., UC Transportation Center, "University of California Transportation Center," Caltrans, \$3,500,000

Cervero, Robert B., Institute of Transportation Studies, "University Transportation Centers Program Open Competition 2011," U.S. Department of Transportation Research and Innovation Technology Administration, \$3,500,000

Eskenazi, Brenda, School of Public Health, "IRS Insecticides for Malaria Control and Child Neurodevelopment in South Africa," National Institute of Environmental Health Sciences, \$3,445,541

Basri, Gibor, Center for Educational Partnerships, "TRIO_Talent Search," U.S. Department of Education, \$3,406,050

Banfield, Jill E., Earth and Planetary Science, "Population Genomic Analysis of Gut Microbial Colonization in Premature Infants," National Institute of Allergy and Infectious Diseases, \$3,371,423

Largest Awards, Fiscal Year 2012 (continued)

Linn, Marcia C., Graduate School of Education, "CLASS: Continuous Learning and Automated Scoring in Science," National Science Foundation, \$3,147,729

Loper, Suzanna, Lawrence Hall of Science, "Constructing and Critiquing Arguments in Middle School Science Classrooms: Supporting Teachers with Multimedia Educative Curriculum Materials," National Science Foundation, \$3,147,015

Melis, Anastasios, Plant and Microbial Biology, "FOLIUM - Developing Tobacco as a Platform for Foliar Synthesis of High-Density Liquid Fuels," U.S. Department of Energy, \$3,146,766

Barcellos, Lisa F., School of Public Health, "Novel Strategies to Identify GxE Contributions to MS Pathogenesis," National Institute of Environmental Health Sciences, \$3,017,244

Boser, Bernhard E., Engineering Research Support Organization, "Integrated Microgyroscopes with Continuous On-Line Self-Calibration," Defense Advanced Research Projects Agency, \$3,000,000

Nolan, Deborah A., Dean, Physical Sciences, "Math for America Berkeley: NSF Master Teacher Fellowship Program," National Science Foundation, \$2,999,940

Bates, Michael N., School of Public Health, "Investigation of Indoor Solid Fuel and Kerosene Use as Tuberculosis Risk Factors," National Institute of Environmental Health Sciences, \$2,961,228

Levine, Michael S., Molecular and Cell Biology, "Postgraduate Training Program in Genetics," National Institute of General Medical Sciences, \$2,903,345

Peterson, Per F., Engineering Research Support Organization, "High-Temperature Salt-Cooled Reactor for Power and Process Heat," Massachusetts Institute of Technology, \$2,750,222

Pies, Cheri A., School of Public Health, "Best Babies Zone," W.K. Kellogg Foundation, \$2,750,000

Miguel, Edward, Institute of Business and Economic Research, "Estimating the Impacts of Health and Human Capital Investments on Long-Run Life Outcomes in Kenya - Evidence from Three Randomized Evaluations," National Institute of Child Health and Human Development, \$2,655,389

Parsons, Aaron, Radio Astronomy Laboratory, "Collaborative Research: Precision Array for Probing the Epoch of Reionization (PAPER)," National Science Foundation, \$2,629,198

Ngai, John, Helen Wills Neuroscience Institute, "Training Program in Neuroscience," National Institute of General Medical Sciences, \$2,543,375

Romanowicz, Barbara A., Berkeley Seismological Laboratory, "FESD Proposal, Type II: CIDER-II Synthesis Center: Cooperative Institute for Dynamic Earth Research," National Science Foundation, \$2,532,931

Blumstein, Carl J., California Institute for Energy and Environment, "State Partnership for Energy Efficiency Demonstrations," California Energy Commission, \$2,515,918

Hartwig, John F., Chemistry Department, "Arene Functionalization for Technical Applications," Dow Chemical Company, \$2,506,876

Skibola, Christine F., School of Public Health, "Resequencing and Functional Studies to Identify Casual Gene Variants of Lymphoma," National Cancer Institute, \$2,504,193

Alivisatos, A. Paul, Chemistry Department, "Core-Shell Catalysis Project," Dow Chemical Company, \$2,500,000

Healy, Kevin E., California Institute for Quantitative Biosciences, "Disease Specific Cardiac Tissue Models," National Heart, Lung, and Blood Institute, \$2,468,577

Monismith, Carl L., Institute of Transportation Studies, "Partnered Pavement Research Center," University of California, Davis, \$2,392,501

Bertozzi, Carolyn R., Chemistry Department, "Chemical Mycobacteriology," National Institute of Allergy and Infectious Diseases, \$2,314,028

Largest Awards, Fiscal Year 2012 (continued)

- Chang, Michelle C., Chemistry Department, "Discovery and Mechanistic Study of Fluorine Biochemistry," National Institutes of Health Office of the Director, \$2,302,500
- Hammond, Ming C., Chemistry Department, "A Chemical Biology Approach to Tagging RNAs in Live Cells," National Institutes of Health Office of the Director, \$2,302,500
- Drubin, David G., Molecular and Cell Biology, "Molecular Analysis of the Yeast Actin Cytoskeleton," National Institute of General Medical Sciences, \$2,265,652
- Needell, Barbara, School of Social Welfare, "Performance Indicators/California Children's Services Archive," California Department of Social Services, \$2,254,945
- Bodik, Rastislav, Engineering Research Support Organization, "Collaborative Research: Expeditions in Computer Augmented Program Engineering (ExCAPE): Harnessing Synthesis for Software Design," National Science Foundation, \$2,250,000
- Steinmaus, Craig, School of Public Health, "Perchlorate and Thyroid Hormones in Pregnancy and Infants in Southern California," National Institute of Environmental Health Sciences, \$2,104,577
- Davis, Sam, School of Social Welfare, "Regional Training Academy Coordination Project," California Department of Social Services, \$2,093,755
- Allen, Richard M., Berkeley Seismological Laboratory, "West Coast ShakeAlert Research," Gordon and Betty Moore Foundation, \$2,045,000
- Carmena, Jose M., Engineering Research Support Organization, "EFRI-M3C: A Hybrid Control Systems Approach to Brain-Machine Interfaces for Exoskeleton Control," National Science Foundation, \$2,000,000
- Winoto, Astar, Cancer Research Laboratory, "The Role of Fas-associated Death Domain in Necroptosis in Vivo," National Institute of Allergy and Infectious Diseases, \$1,884,110
- Shastri, Nilabh, Molecular and Cell Biology, "Antigen Processing in the Secretory Pathway," National Institute of Allergy and Infectious Diseases, \$1,876,451
- Schneck, Marilyn E., Optometry Department, "Predicting Diabetic Macular Edema Using Functional Measures," National Eye Institute, \$1,876,367
- Feller, Marla B., Molecular and Cell Biology, "Development of Direction Selectivity in Retina," National Eye Institute, \$1,843,950
- Feller, Marla B., Molecular and Cell Biology, "Function of Neural Activity in Developing Retina," National Eye Institute, \$1,827,846
- Wu, Ming, Engineering Research Support Organization, "MEMS Electronic-Photonic Heterogeneous Integrated (MEPHI) FMCW LADAR," Defense Advanced Research Projects Agency, \$1,812,191
- King, Nicole, Molecular and Cell Biology, "Molecular Regulation of Choanoflagellate-Bacteria Signaling Interactions," National Institute of General Medical Sciences, \$1,809,895
- Napoli, Joseph, Nutritional Science and Toxicology, "Ethanol Effects on Retinoic Acid Function in Embryo Hippocampus," National Institute on Alcohol Abuse and Alcoholism, \$1,693,857
- Bautista, Diana, Molecular and Cell Biology, "Roles and Functions of Ion Channels that Mediate Mammalian Touch Transduction," National Institute of Arthritis and Musculoskeletal and Skin Diseases, \$1,688,296
- Niyogi, Krishna K., Plant and Microbial Biology, "Understanding and Improving Photosynthesis," Gordon and Betty Moore Foundation, \$1,666,665
- Keasling, Jay, California Institute for Quantitative Biosciences, "Commercial Production of Terpene Biofuels in Pine," University of Florida, \$1,650,000
- Rio, Donald C., Molecular and Cell Biology, "Alternative pre-mRNA Splicing in Drosophila," National Institute of General Medical Sciences, \$1,647,988

Largest Awards, Fiscal Year 2012 (continued)

- Schaffer, David, California Institute for Quantitative Biosciences, "Mechanisms of Neural Stem Cell Mechanoregulation," National Institute of Neurological Disorders and Stroke, \$1,636,156
- Ivry, Richard, Psychology, "Neural Mechanisms Underlying Hand Choice for Unimanual Action," National Institute of Neurological Disorders and Stroke, \$1,631,798
- Conolly, Steven, California Institute for Quantitative Biosciences, "Magnetic Particle Imaging Angiography for Chronic Kidney Disease Patients," National Institute of Biomedical Imaging and Bioengineering, \$1,631,057
- Feldman, Daniel E., Helen Wills Neuroscience Institute, "Inhibitory Mechanisms for Sensory Map Plasticity in Cerebral Cortex," National Institute of Neurological Disorders and Stroke, \$1,630,400
- Tinoco, Ignacio, Chemistry Department, "Structure and Function of Nucleic Acids," National Institute of General Medical Sciences, \$1,618,614
- Walker, Matthew P., Psychology, "Anxiety, Sleep Distruption and Emotional Brain Dysregulation," National Institute of Mental Health, \$1,611,750
- Roychowdhury, Jaijeet S., Engineering Research Support Organization, "SHF: Large: Phase-based Logic Realized Using Oscillatory Nanosystems (PHLOGON)," National Science Foundation, \$1,600,000
- Theunissen, Frederic E., Helen Wills Neuroscience Institute, "Auditory Memories and Vocal Learning," National Institute on Deafness and Other Communication Disorders, \$1,591,386
- Lee, Adrian, Physics, "A High Throughput CMB Polarization Receiver with Dual-Frequency-Band Bolometric Pixels," National Science Foundation, \$1,550,690
- Glaunsinger, Britt, Plant and Microbial Biology, "Escape from Gammaherpesvirus-Induced mRNA Destruction," National Cancer Institute, \$1,547,288
- Chen, Danica, Nutritional Science and Toxicology, "Nutrient Sensing and the Oxidative Stress Response," National Institute on Aging, \$1,538,693
- Gong, Xiaohua, School of Optometry, "Cataractogenesis, Connexin Mutants and Genetic Modifiers," National Eye Institute, \$1,535,000
- Cooper, Jill, School of Public Health, "SafeTREC VII," California Office of Traffic Safety, \$1,512,500
- Gronert, Karsten, School of Optometry, "Sex-specific Regulation of Acute Inflammation and Resolution," National Eye Institute, \$1,502,851
- Gillespie, Rosemary G., Essig Museum of Entomology, "Informatics Engine for Understanding Biotic Response to Global Change," William M. Keck Foundation, \$1,500,000

Honors to Individual Faculty, Fiscal Year 2012

Theodor W. Adorno Prize

Judith Butler, Comparative Literature and Rhetoric

American Academy of Arts and Sciences

James Berger, Molecular and Cell Biology

Bernard Sadoulet, Physics

Eli Yablonovitch, Electrical Engineering and Computer Sciences and Statistics

Peidong Yang, Chemistry and Materials Science and Engineering

American Association for the Advancement of Science

Robert Full, Integrative Biology

Leslea Hlusko, Integrative Biology

Dan Kammen, Energy and Resources, Public Policy, and Nuclear Engineering

Randy Katz, Electrical Engineering and Computer Sciences

Chung-Pei Ma, Astronomy

Sheila McCormick, Plant and Microbial Biology

Anastasios Melis, Plant and Microbial Biology

Carolyn Merchant, Environmental Science, Policy and Management

John Ohala, Linguistics

Stuart Russell, Electrical Engineering and Computer Sciences

Martin White, Physics and Astronomy

APEC Science Prize for Innovation, Research and Education (ASPIRE Prize)

Ali Javey, Electrical Engineering and Computer Sciences

Dickson Prize in Science

Marvin Cohen, Physics

John Simon Guggenheim Memorial Foundation Fellow

Teresa Caldeira, City and Regional Planning

Honda Prize

Gabor Somorjai, Chemistry

Institute of Medicine

Barbara Abrams, Public Health

Carolyn Bertozzi, Chemistry and Molecular and Cell Biology

Lemelson-MIT Award for Global Innovation

Ashok Gadgil, Civil and Environmental Engineering

Mellon Foundation Distinguished Achievement Award

Kaja Silverman, Rhetoric

Mellon Foundation Emeritus Fellowship

Robert Alter, Comparative Literature

National Academy of Sciences

John Hartwig, Chemistry

Mary Power, Integrative Biology

Bernard Sadoulet, Physics

John Clarke, Physics (foreign associate)

National Academy of Engineering

Scott Shenker, Electrical Engineering and Computer Sciences and Statistics

NIH Director's New Innovator Award

Michelle Chang, Chemistry

Ming Hammond, Chemistry and Molecular and Cell Biology

Nobel Prize in Physics

Saul Perlmutter, Physics (shared with Adam Riess, Johns Hopkins University, and Brian Schmidt, Australian National University)

David and Lucile Packard Foundation Fellowship in Science and Engineering

Naomi Ginsberg, Chemistry

Pew Scholars in the Biomedical Sciences

Wenjun Zhang, Chemical and Biomolecular Engineering

Presidential Early Career Award for Scientists and Engineers (PECASE)

Fotini Katopodes Chow, Civil and Environmental Engineering

Feng Wang, Physics

Searle Scholar

Daniel Nomura, Nutritional Sciences and Toxicology

Alfred P. Sloan Foundation Research Fellows

Sylvia Ratnasamy, Electrical Engineering and Computer Sciences

Allan Sly, Statistics

John and Alice Tyler Prize for Environmental Achievement

Kirk Smith, Public Health (shared with John Seinfeld, California Institute of Technology)

Vilcek Prize in Biomedical Science

Carlos Bustamante, Molecular and Cell Biology, Physics, and Chemistry (shared with Charles Lieber, Harvard University)

Wolf Prize in Chemistry

Paul Alivisatos, Chemistry (shared with Charles Lieber, Harvard University)

Zayed Future Energy Prize Lifetime Achievement

Ashok Gadgil, Civil and Environmental Engineering