



University of
California, Berkeley
**Sponsored
Projects
Annual Report**
Fiscal Year 2018

Sponsored Projects Annual Report, Fiscal Year 2018

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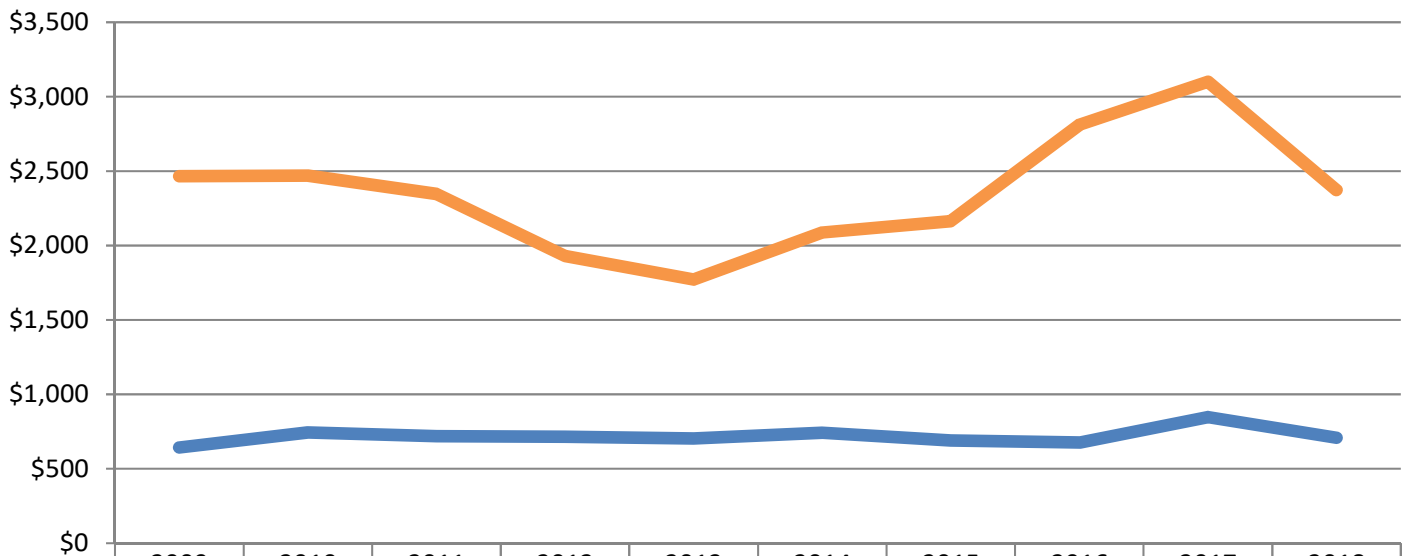
University of California, Berkeley / Sponsored Projects Overview

The **University of California, Berkeley** is one of the world’s leading universities in research, teaching, and public service, with an enrollment of over 30,500 undergraduates and over 11,300 graduate students. The campus employs 1,608 full-time and 732 part-time faculty in more than 170 academic departments and more than 100 interdisciplinary research units. UC Berkeley is divided into 14 colleges and schools, most of which are subdivided into departments. The campus offers over 10,000 undergraduate and graduate courses in approximately 300 degree programs, and ranks among the top five Ph.D.-granting institutions.

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 is part of the Research Administration and Compliance Office (RAC), under the Vice Chancellor for Research.

Proposal and Award Overview

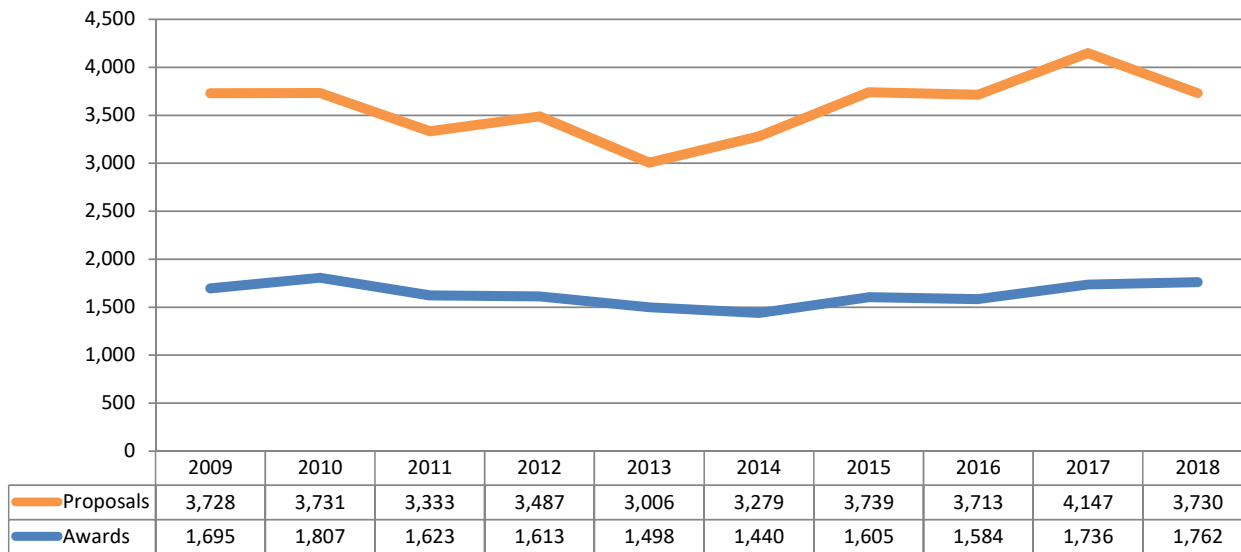
Ten-Year Comparison of Funding Requested and Funding Received, FY 2009-2018
(dollars in millions)



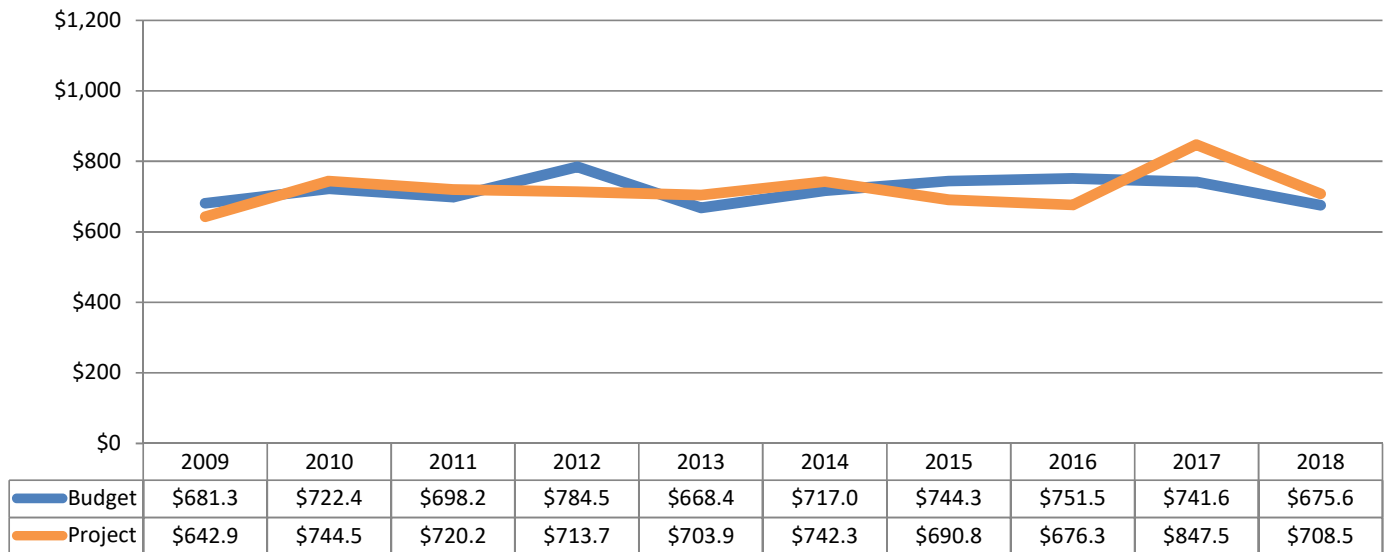
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Requested	\$2,465.9	\$2,470.7	\$2,345.2	\$1,930.6	\$1,770.7	\$2,087.6	\$2,163.7	\$2,811.7	\$3,100.5	\$2,373.5
Received	\$642.9	\$744.5	\$720.2	\$713.7	\$703.9	\$742.3	\$690.8	\$676.3	\$847.5	\$708.5

Proposal and Award Overview

Ten-Year Comparison of Proposals Submitted and Awards Received, FY 2009-2018



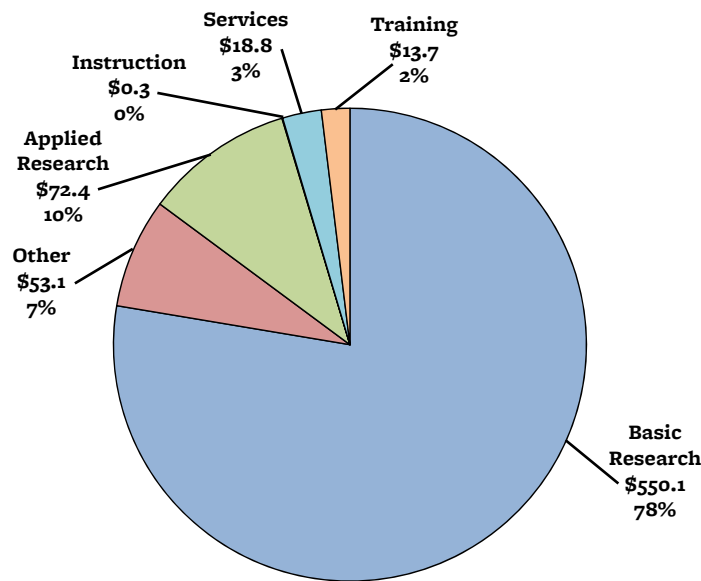
**Ten-Year Comparison of Project and Budget Period Funding, FY 2009-2018
(dollars in millions)**



Project period funding includes all funding anticipated for a project, reporting in the fiscal year of its begin date. Budget period funding reports each budget period for a project in the fiscal year of its begin date. Budget period funding declined by 9% in fiscal year 2018, while project period funding decreased by 16%.

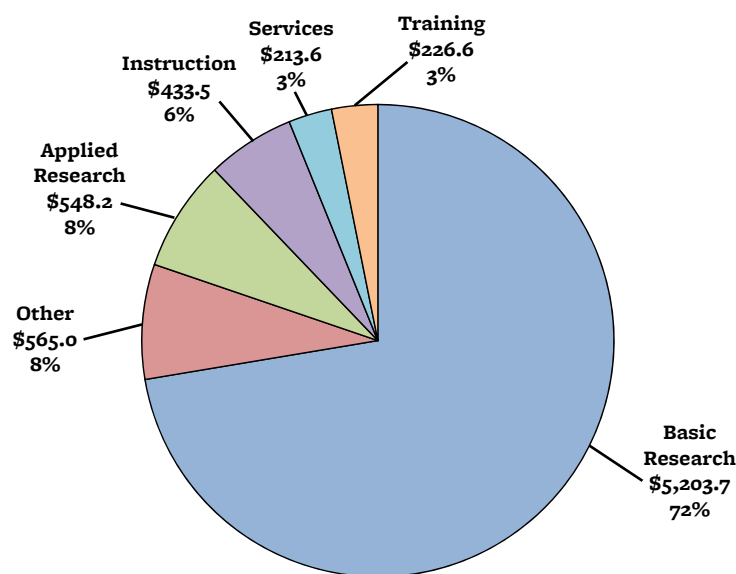
Proposal and Award Overview

Fiscal Year 2018 Funding Summary by Activity Type
 (\$708.5 million total - dollars in millions)



Activity type “Other” primarily includes funding transferred from the Lawrence Berkeley National Laboratory for administrative purposes, along with projects that span multiple activities or do not cleanly fit into the five other categories.

Ten-Year Funding Summary by Activity Type, FY 2009-2018
 (\$7.19 billion total - dollars in millions)



Proposals and Awards by Campus Control Unit

UC Berkeley colleges, schools, and divisions 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.

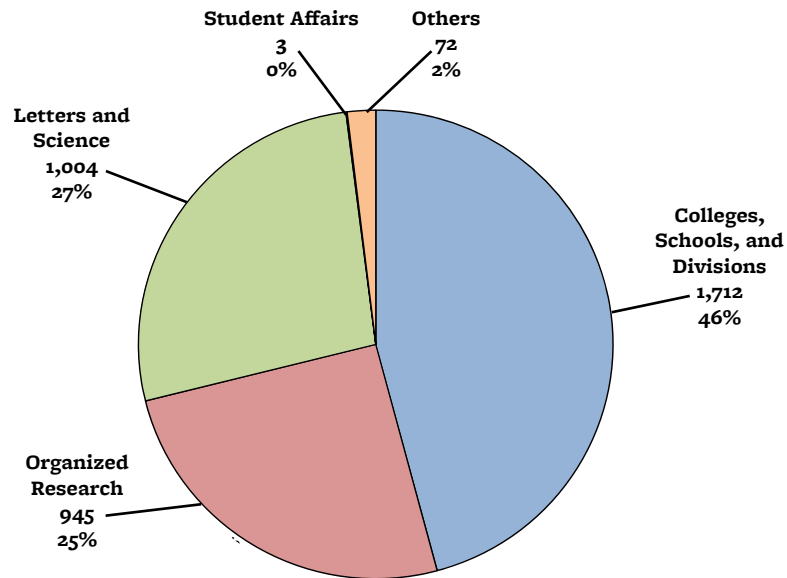
The College of Letters and Science, or L&S, includes Biological, Physical, Social Science, and Arts and Humanities Divisions.

Organized Research Units (ORUs) report to the Vice Chancellor for Research and are organized around broad substantive research topics, e.g., international affairs, information technology and science, and the environment. As such, they draw into their research programs faculty and students from multiple departments and 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.

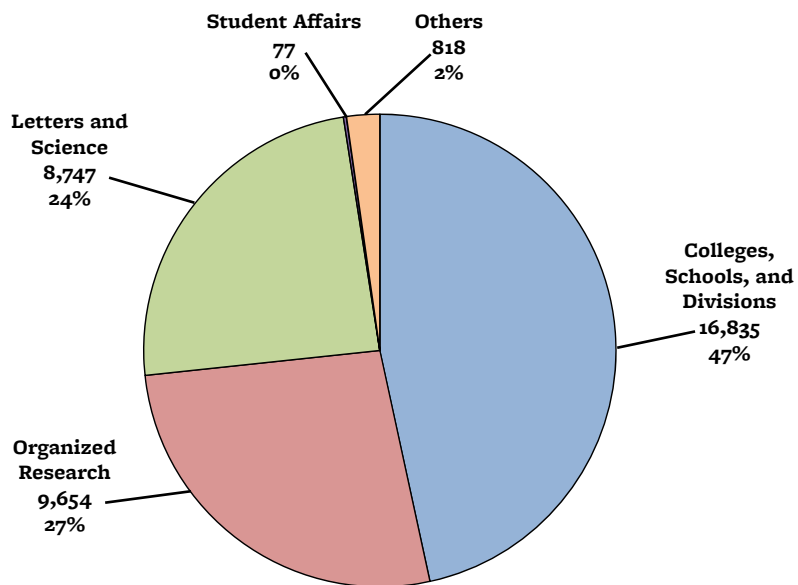


Proposals by Campus Control Unit

**Fiscal Year 2018 Number of Proposals Submitted by Control Unit
(3,736 total)**

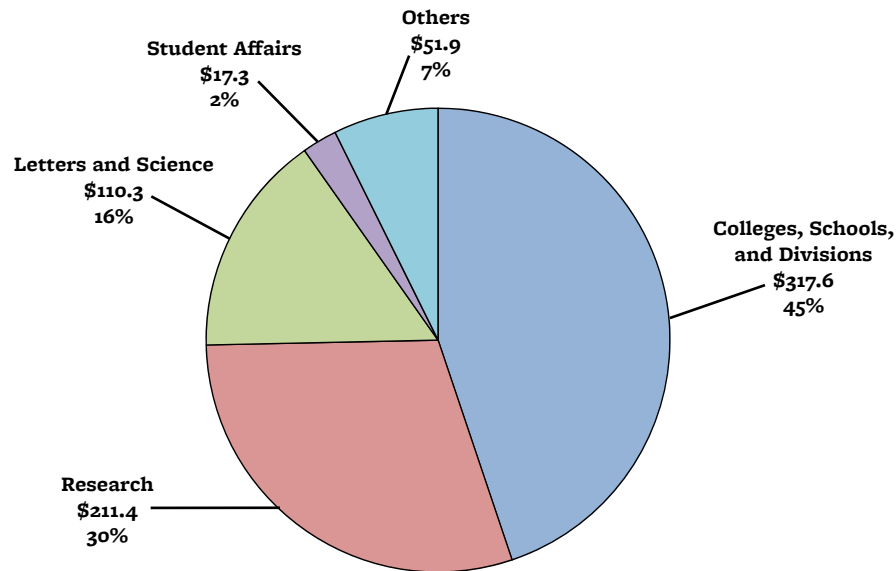


**Ten-Year Number of Proposals Submitted by by Control Unit, FY 2009-2018
(36,131 total)**

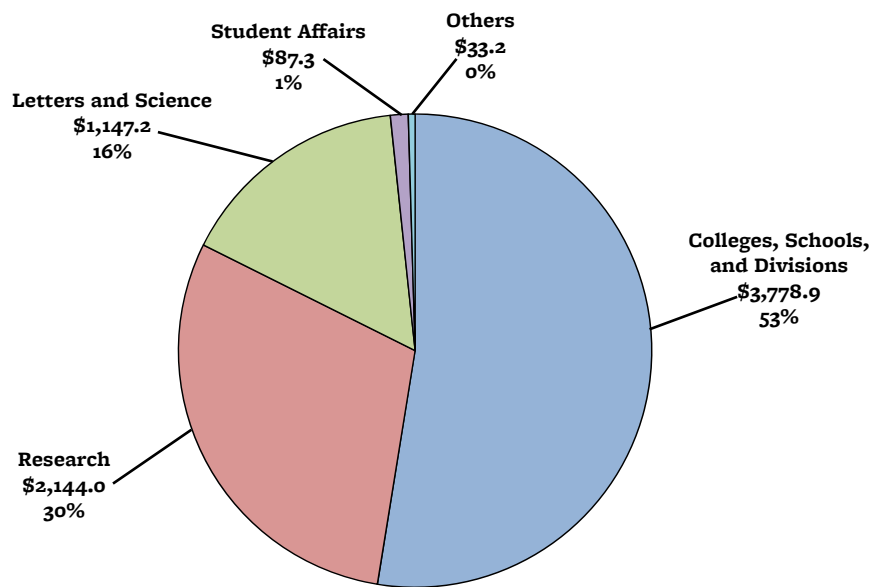


Funding by Campus Control Unit

Fiscal Year 2018 Funding Summary by Control Unit
 (\$708.5 million total - dollars in millions)

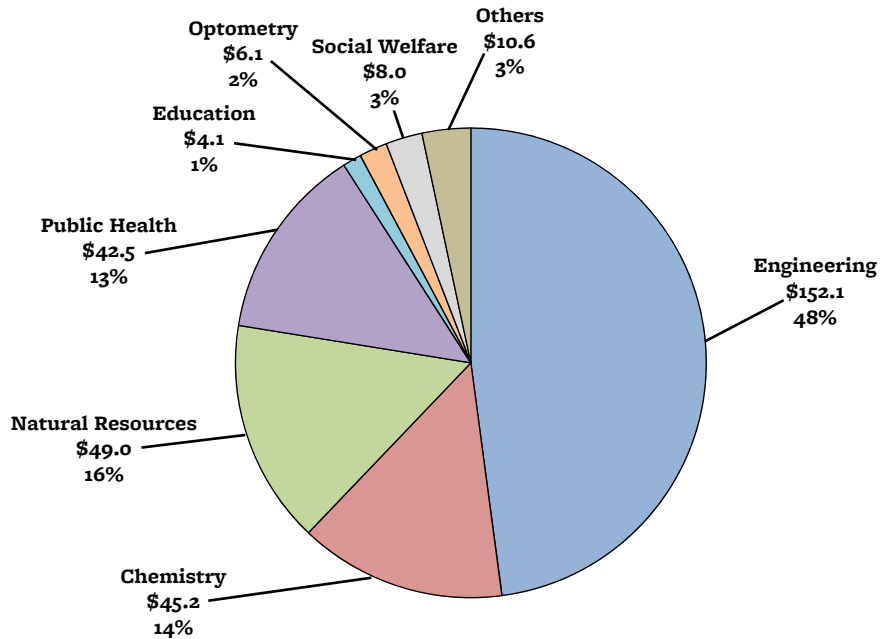


Ten-Year Funding Summary by Control Unit, FY 2009-2018
 (\$7.19 billion total - dollars in millions)

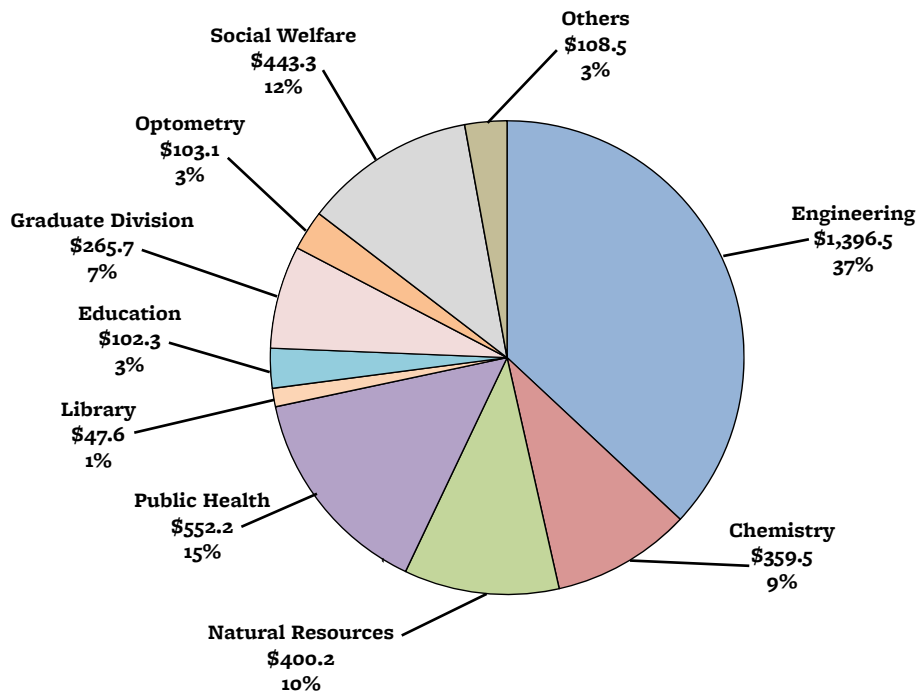


Funding by Campus Colleges, Schools, and Divisions

Fiscal Year 2018 Funding Summary by Colleges, Schools, and Divisions
 (\$317.6 million total - dollars in millions)



Ten-Year Funding Summary by Colleges, Schools, and Divisions, FY 2009-2018
 (\$3.8 billion total - dollars in millions)



Awards by Funding Source Overview - All Sponsors

In fiscal year 2018, federal funding remained essentially flat from fiscal year 2017, at \$422 million. Federal funding again made up the largest portion of total funding received with nearly 60% of the total.

Funding from nonprofit organizations in fiscal year 2018, including foundations, charities, research institutes, and institutions of higher education, decreased by 23% to a total of \$146.4 million.

State of California funding reached its lowest total in 10 years in fiscal year 2018, at \$29.6 million. Funding from other governmental sources totaled \$18.7 million, 73% greater than fiscal year 2017. Funding from corporate sponsors decreased by 8% to a total of \$65.6 million.

Award Highlight

Real-Time Intelligent Secure Explainable Systems (RISELab)

The UC Berkeley RISELab has been awarded \$10 million in funding over five years under a NSF Expedition Award. The award, from the National Science Foundation, will enable the RISELab to make fundamental advances in the theory and design of real-time, intelligent, secure, and explainable systems.

This research has the potential to transform the next generation of systems that interact with the real-world, including autonomous vehicles, medical robots, privacy-preserving information exchanges, fraud detection systems, and the power grid.

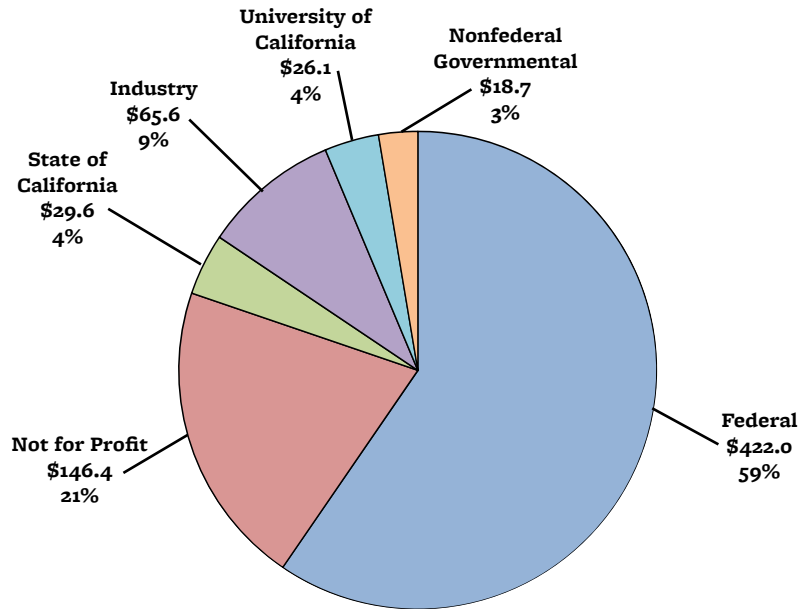
RISELab's Expeditions project will work on building AI decision systems to address these challenges by developing open source platforms, tools and algorithms. The project will also empower a large community of pioneers to build innovative applications and solutions, as well as broaden participation in research activities by allowing students and researchers across many disciplines to contribute.

<https://rise.cs.berkeley.edu/>

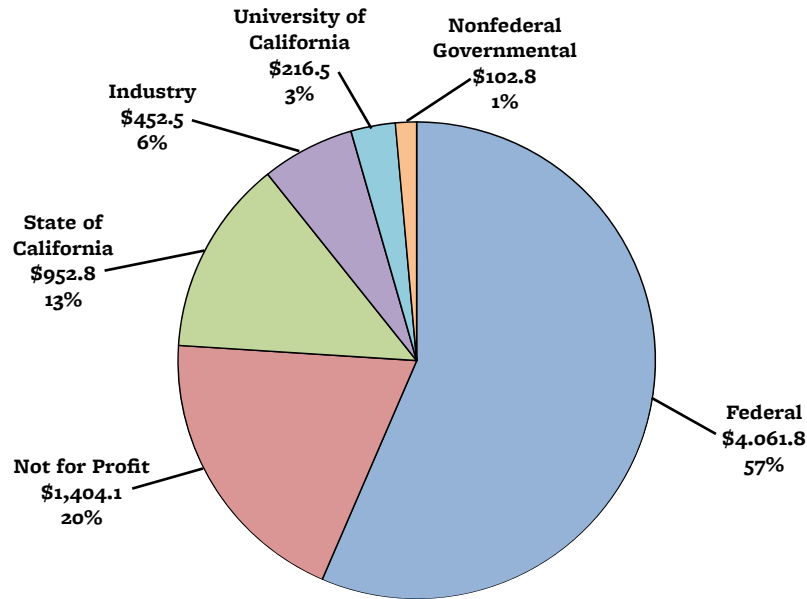


Overview - All Sponsors

Fiscal Year 2018 Funding Summary - All Sponsors
 (\$708.5 million total - dollars in millions)

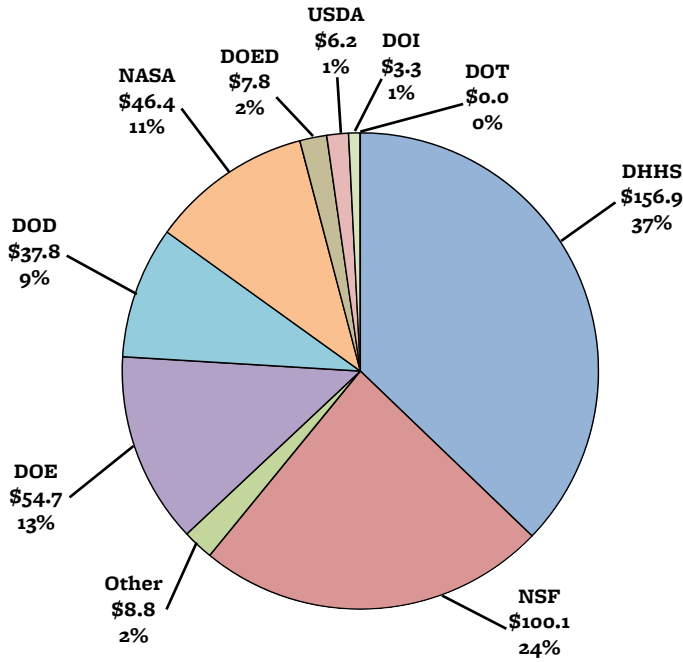


Ten-Year Funding Summary - All Sponsors, FY 2009-2018
 (\$7.19 billion total - dollars in millions)



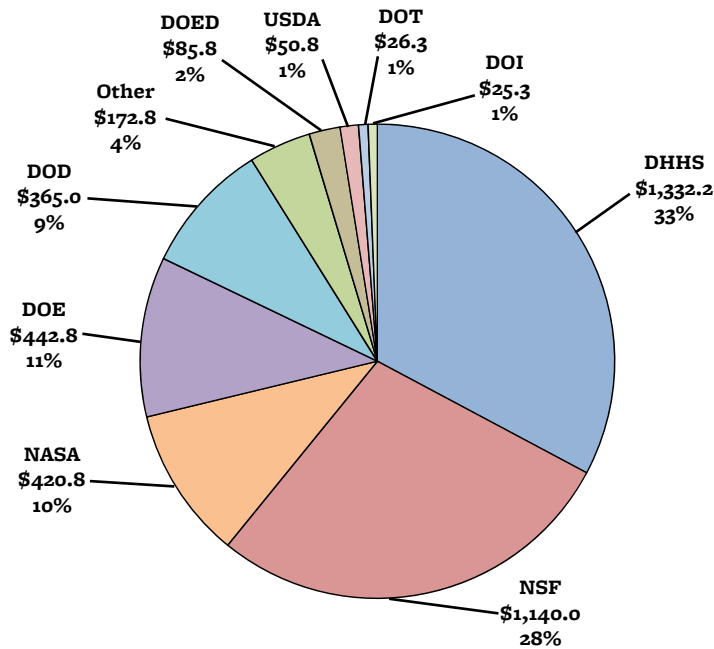
Federal Agencies

Fiscal Year 2018 Funding Summary - Federal Sponsors
 (\$422.0 million total - dollars in millions)



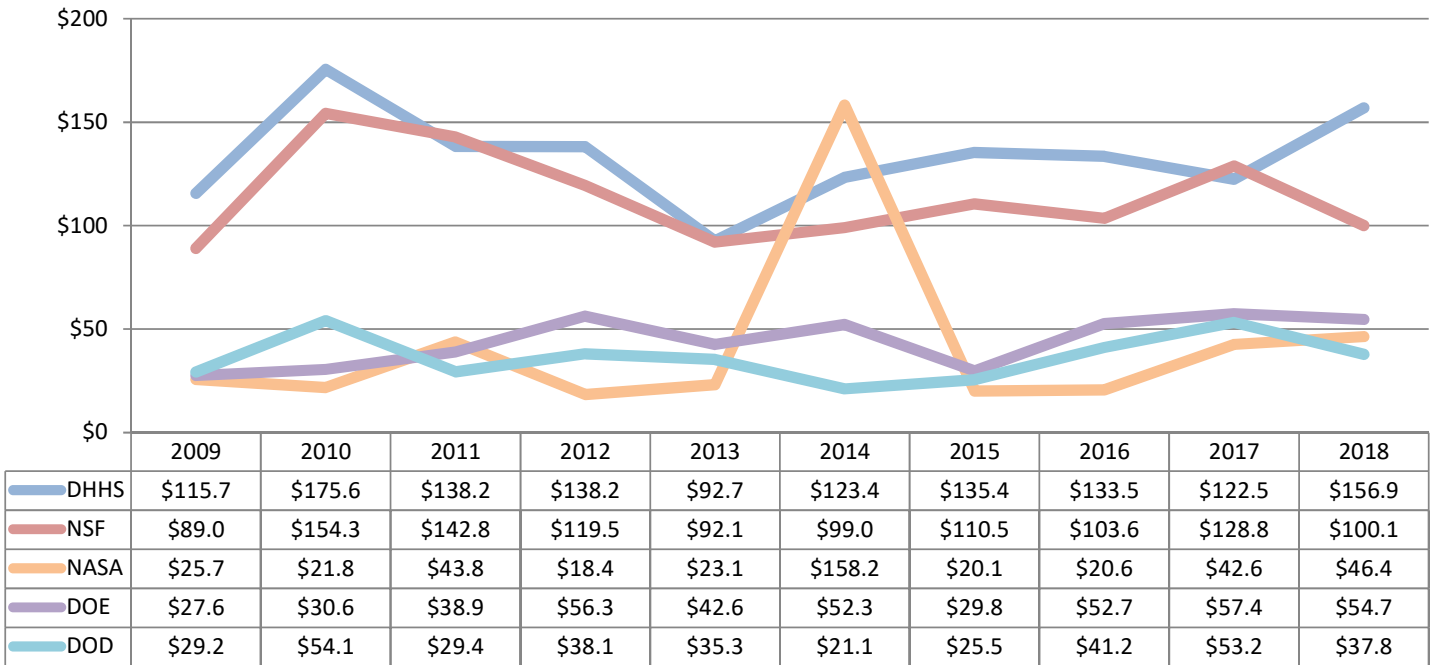
In fiscal year 2018, the Department of Health and Human Services was again the largest source of federal funds, with \$156.9 million, a 25% increase from fiscal year 2017 and 37% of the federal total. The National Science Foundation was second largest with \$100 million, a 22% decline from fiscal year 2017. Federal funding overall was essentially flat from fiscal year 2017. Federal funding again made up the largest portion of total funding received with 60% of the total.

Ten-Year Funding Summary - Federal Sponsors, FY 2009-2018
 (\$4.06 billion total - dollars in millions)



Federal Agencies

**Ten-Year Funding Summary for Top-Five Federal Sponsors, FY 2009-2018
(dollars in millions)**

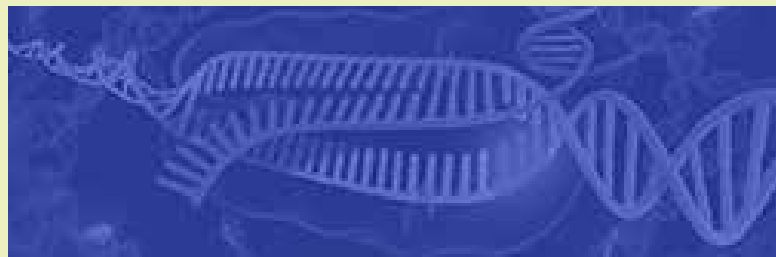


Award Highlight

Center for Genome Editing and Recording

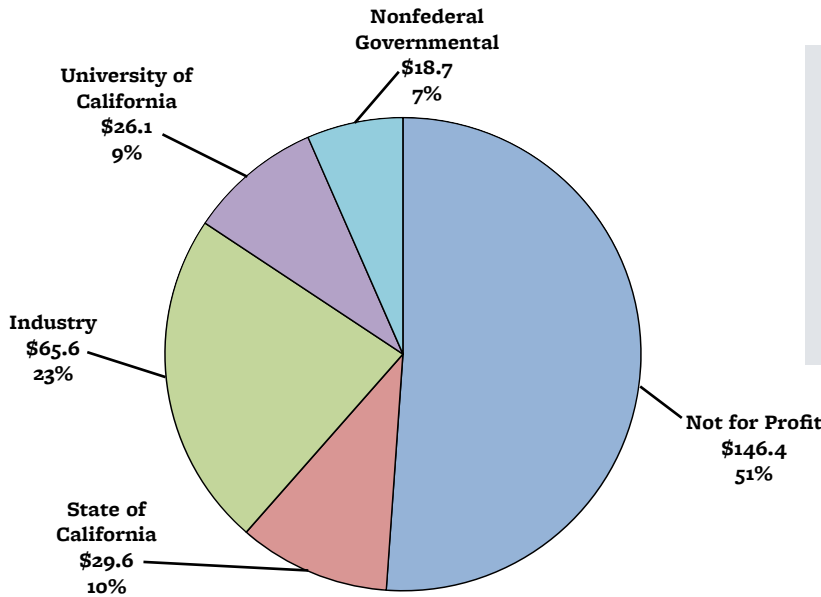
Funded by \$10.4 million from the National Institutes of Health, the Center for Genomic Editing and Recording (CGER) is a collaboration between the Doudna, Joung, Liu, and Weissman labs, CGER is seeking to build on CRISPR-Cas9 genome engineering technology to expand greatly our ability to detect, alter, and record the sequence and output of the genome in individual cells and tissues.

<http://doudnalab.org/>



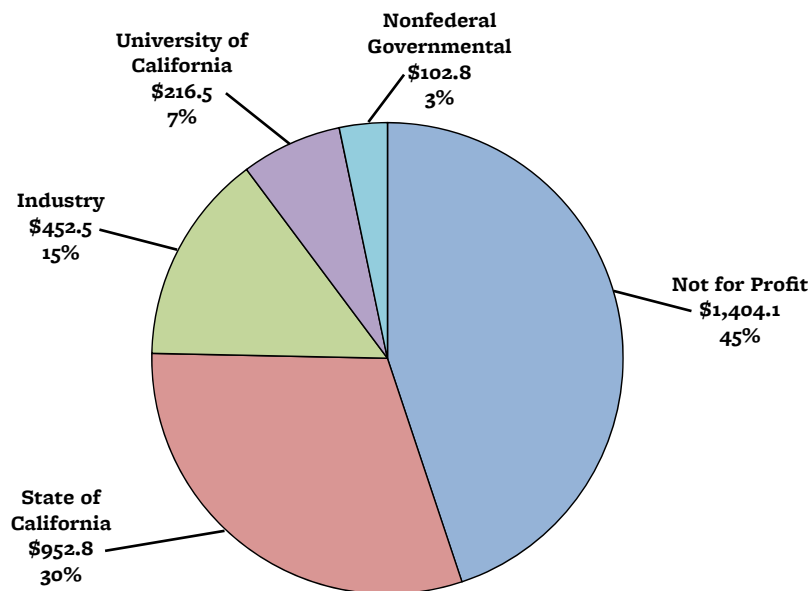
Nonfederal Agencies

Fiscal Year 2018 Funding Summary - Nonfederal Sponsors
 (\$286.4 million total - dollars in millions)



Over the last ten years, funding from the nonprofit sector has made up almost 45% of nonfederal funding. In fiscal year 2018, that sector provided 51% of the \$286.4 million received from nonfederal sources.

Ten-Year Funding Summary - Nonfederal Sponsors, FY 2009-2018
 (\$3.13 billion total - dollars in millions)



Largest Awards, Fiscal Year 2018

- Fiona Doyle, Graduate Division, “Graduate Research Fellowship Program,” National Science Foundation, \$54,304,755
- Jeffrey Mackie-Mason, Library, “Scholarly Resource Content and Library Services,” Lawrence Berkeley National Laboratory (U.S. Department of Energy prime sponsor), \$15,176,157
- David Feinberg, Helen Wills Neuroscience Institute, “MRI Corticography: Developing Next Generation Microscale Human Cortex MRI Scanner,” National Institute of Biomedical Imaging and Bioengineering, \$13,427,345
- Martyn Smith, School of Public Health, “Toxic Substances in the Environment,” National Institute of Environmental Health Sciences, \$10,819,256
- Jennifer Doudna, California Institute for Quantitative Biosciences, “Center for Genome Editing and Recording,” National Human Genome Research Institute, \$10,373,390
- Ion Stoica, Electrical Engineering and Computer Sciences, “Secure, Real-Time Decisions on Live Data,” National Science Foundation, \$9,999,999
- Omar Yaghi, Chemistry, “KACST-UC Berkeley Center of Excellence for Nanomaterial Clean Energy Applications (CENCEA) Collaborative Research Center,” King Abdulaziz City for Science and Technology, \$8,083,333
- Prabal Dutta, Electrical Engineering and Computer Sciences, “CONIX: Computing On Network Infrastructure for Pervasive Perception, Cognition, and Action,” Carnegie Mellon University (Semiconductor Research Corporation prime sponsor), \$6,625,000
- Claire Tomlin, Electrical Engineering and Computer Sciences, “Design of High CONFidence LEARNing-Enabled Systems (HICON-LEARN),” Office of Naval Research (Air Force Research Laboratory prime sponsor), \$6,031,963
- Ali Niknejad, Electrical Engineering and Computer Sciences, “ComSenTer: A Center for Converged TeraHertz Communications and Sensing,” UC Santa Barbara (Semiconductor Research Corporation prime sponsor), \$5,808,184
- Krishna Niyogi, Plant and Microbial Biology, “Systems Analysis and Engineering of Biofuel Production in *Chromochloris Zofingiensis*, an Emerging Model Green Alga,” U.S. Department of Energy, \$5,472,272
- Lee Riley, School of Public Health, “Global Health Equity Scholars Program - D43 Fogarty Training,” National Institutes of Health Fogarty International Center, \$5,021,806
- Adrian Lee, Space Sciences Laboratory, “Advancing Focal Plane TRL for LiteBIRD and Other Next Generation CMB Space Missions,” National Aeronautics and Space Administration, \$4,853,768
- Daniel Nomura, Nutritional Science and Toxicology, “Chemoproteomics-Enabled Covalent Ligand and Degradation Discovery Against Druggable Hotspots,” Novartis Pharmaceuticals Corporation, \$4,488,588
- John Ngai, Molecular and Cell Biology, “A Comprehensive Whole-Brain Atlas of Cell Types in the Mouse,” Allen Institute for Brain Science (National Institute of Mental Health prime sponsor), \$4,446,647
- Matthew Walker, Psychology, “Tau Pathology, Sleep Disruption, and Hippocampal Memory Decline in Older Adults,” National Institute on Aging, \$4,378,782
- Alexandre Bayen, Civil and Environmental Engineering, “Data Hub and Decision Support System Pilot,” California Department of Transportation, \$3,999,911
- Richard Allen, Berkeley Seismological Laboratory, “Implementation and Development of US West Coast ShakeAlert: Collaborative Research with Univ. of California at Berkeley, California Institute of Technology, Univ. of Washington, and Univ. of Oregon,” U.S. Geological Survey, \$3,908,823
- Oscar Dubon, Center for Educational Partnerships, “University of California, Berkeley Upward Bound Program: A Project Designed to Generate in Students the Skills and Motivation Necessary for Success in Education Beyond Secondary School,” U.S. Department of Education, \$3,625,055

Award Highlights

CONIX: Computing On Network Infrastructure for Pervasive Perception, Cognition, and Action

The CONIX Research Center aims to provide a new middle tier of distributed computing that tightly couples the cloud and edge by pushing increased levels of autonomy and intelligence into the network. This infrastructure will be critical for future perception, cognition and action applications like augmented reality, smart cities and mobile robotics.

The Semiconductor Research Corporation is awarding the center at Carnegie Mellon University \$27.5 million – with \$6.6 million going to UC Berkeley – to develop the infrastructure linking the cloud with devices on the “edge” or periphery of networks, such as sensors, drones and virtual reality headsets.

<https://conix.io/>



ShakeAlert

ShakeAlert® is an earthquake early warning system that detects significant earthquakes so quickly that alerts can reach many people before shaking arrives.

The U.S. Geological Survey along with a coalition of State and university partners, including researchers at the UC Berkeley Seismological Lab, is developing and testing the ShakeAlert® System for the U.S. West Coast.

The purpose of the ShakeAlert® System is to identify and characterize an earthquake a few seconds after it begins, calculate the likely intensity of ground shaking that will result, and deliver warnings to people and infrastructure in harm's way.

<https://www.shakealert.org/>

