



**University of
California, Berkeley
Sponsored
Projects
Annual Report
Fiscal Year 2021**

Sponsored Projects Annual Report, Fiscal Year 2021

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Paul Alivisatos

Vice Chancellor for Research

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Assistant Vice Chancellor for Research Administration and Compliance

Kairi Williams

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University of California, Berkeley

<https://rac.berkeley.edu>

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Overview

Over the course of the 2021 fiscal year, research activities continued across the University despite numerous challenges shared as an institution and as a community. From the global coronavirus pandemic, to local fires and power outages, our resilience had indeed been tested. While making necessary precautions and repopulating campus, UC Berkeley researchers, educators, scholars, and artists continued to put together highly competitive proposals for funding in major breakthrough research areas displaying their excellence and commitment to the University's research mission.

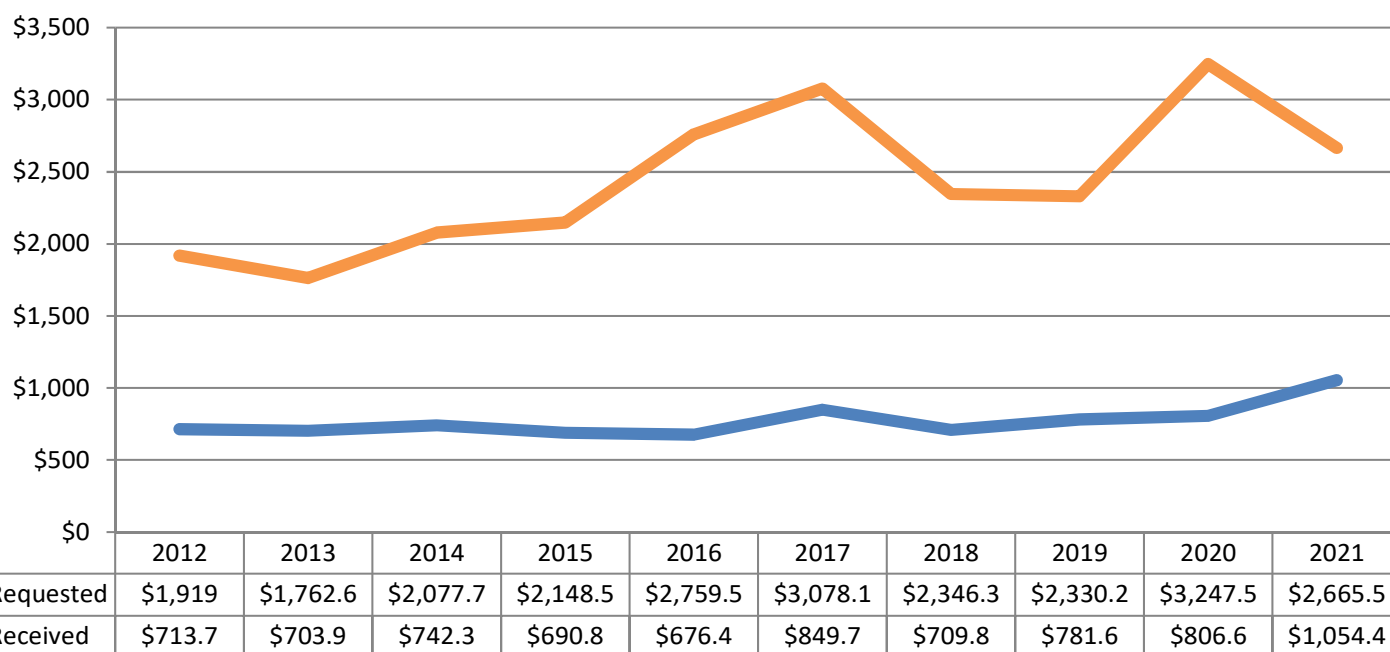
Research administration has seen a change in operation and delivery of services due to the transition to remote work during the pandemic. For much of the year, in-person interactions were limited, and sponsored projects required creative approaches to continuing activities. We are proud of how well our research community adapted to necessary changes while continuing our important work and we appreciate the commitment and patience of all involved.

Research is a team sport and Berkeley's success is the result of hard work and the talent of many people: faculty, students, the central support offices such as the Sponsored Projects Office, Berkeley Regional Services, Industry Alliances Office, and Contracts and Grants Accounting, as well as the campus administrative and academic leadership at all levels.

As you read through this report, please join us as we celebrate the successes of our faculty and staff who have secured a record \$1.05 billion in external funding support from governmental and private sponsors during FY2021.

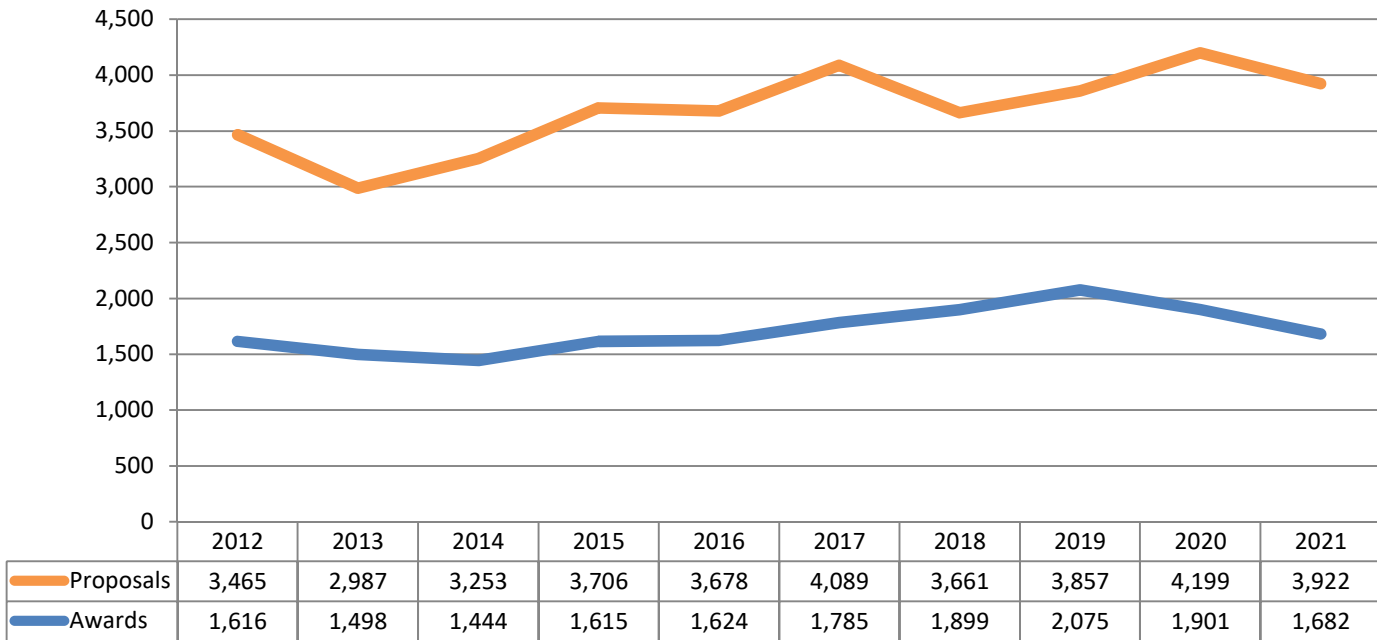
Proposal and Award Overview

Ten-Year Comparison of Funding Requested and Funding Received, FY 2012-2021
(dollars in millions)

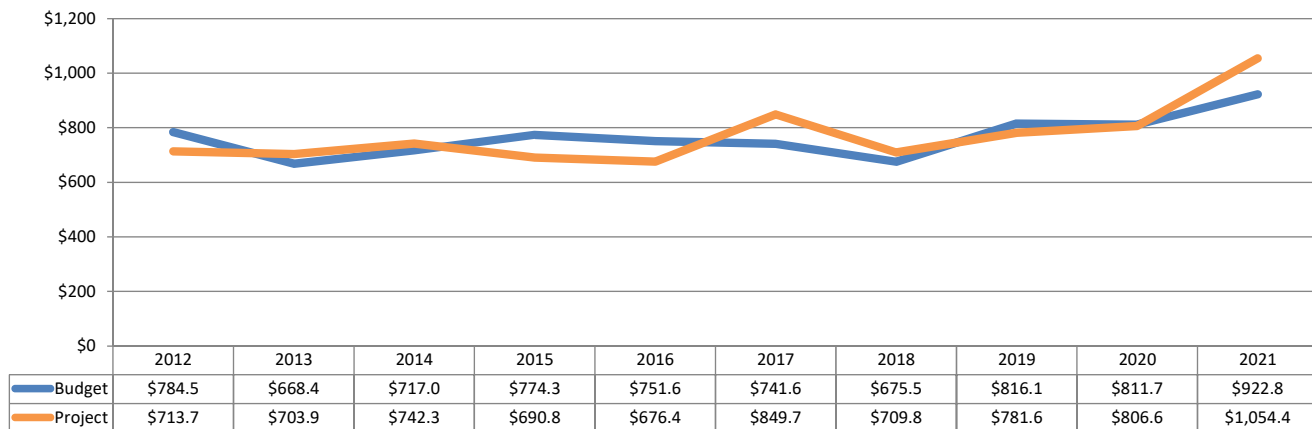


Proposal and Award Overview

Ten-Year Comparison of Proposals Submitted and Awards Received, FY 2012-2021



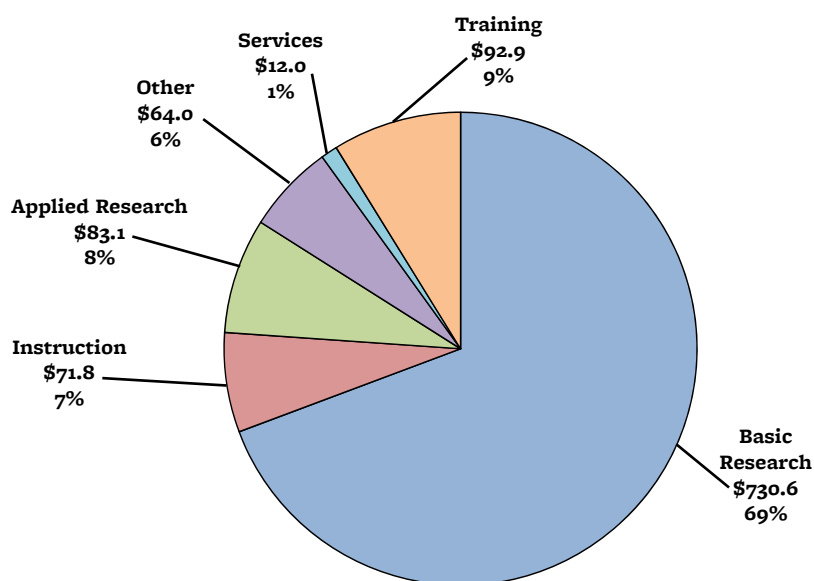
**Ten-Year Comparison of Project and Budget Period Funding, FY 2012-2021
(dollars in millions)**



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 increased by 14% in fiscal year 2021, while project period funding increased by 31%.

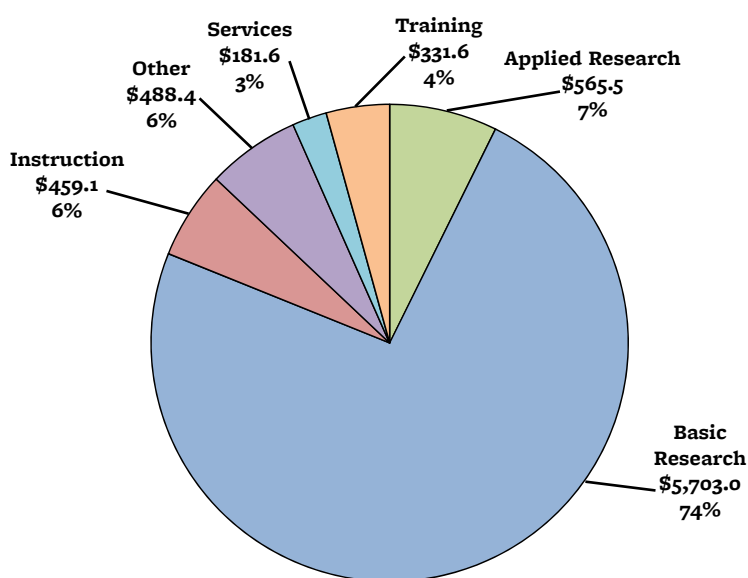
Proposal and Award Overview

Fiscal Year 2021 Funding Summary by Activity Type
(\$1.05 billion 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 2012-2021
(\$7.73 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.

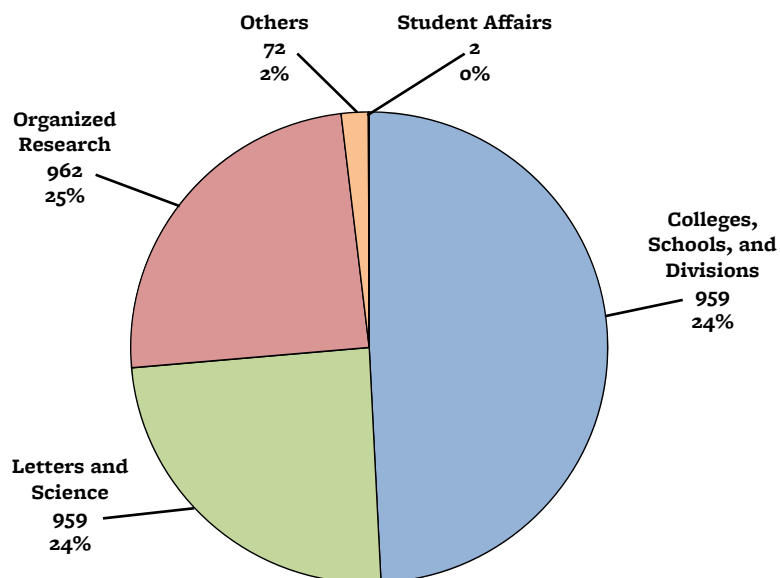
The College of Letters and Science, or L&S, includes Biological, Physical, Social Science, and Arts and Humanities Divisions.

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.

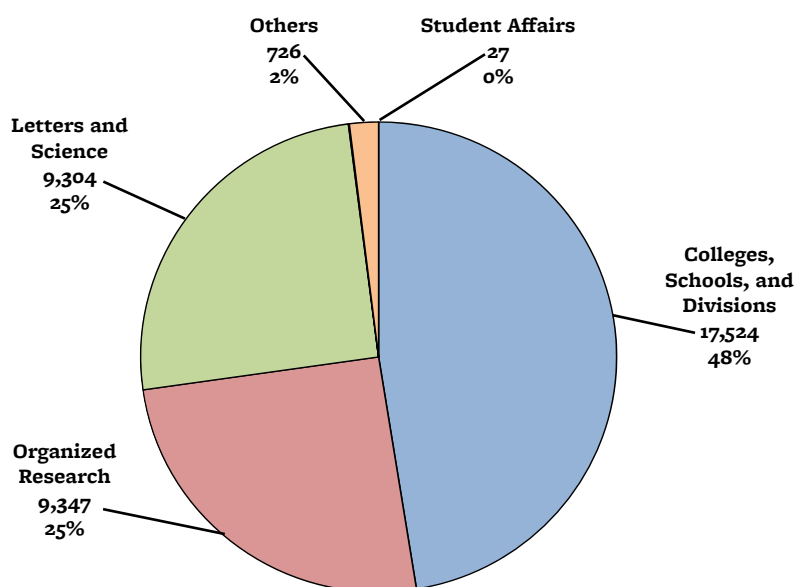


Proposals by Campus Control Unit

**Fiscal Year 2021 Number of Proposals Submitted by Control Unit
(3,928 total)**

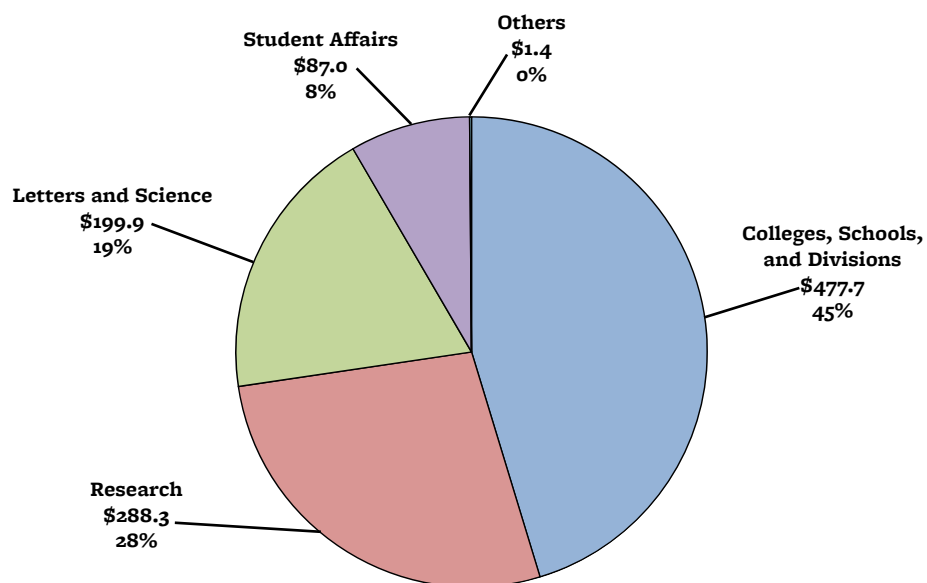


**Ten-Year Number of Proposals Submitted by Control Unit, FY 2012-2021
(36,928 total)**

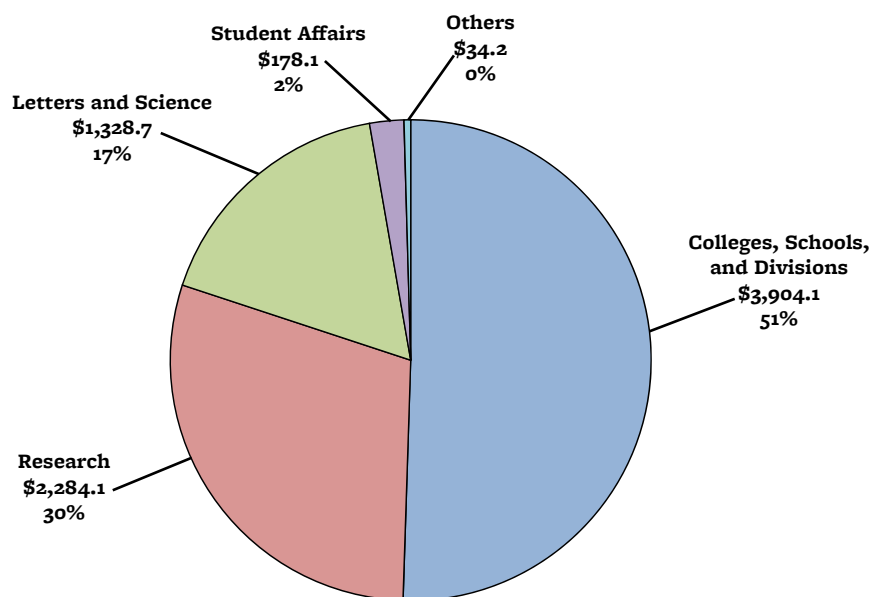


Funding by Campus Control Unit

Fiscal Year 2021 Funding Summary by Control Unit
(\$1.05 billion total - dollars in millions)

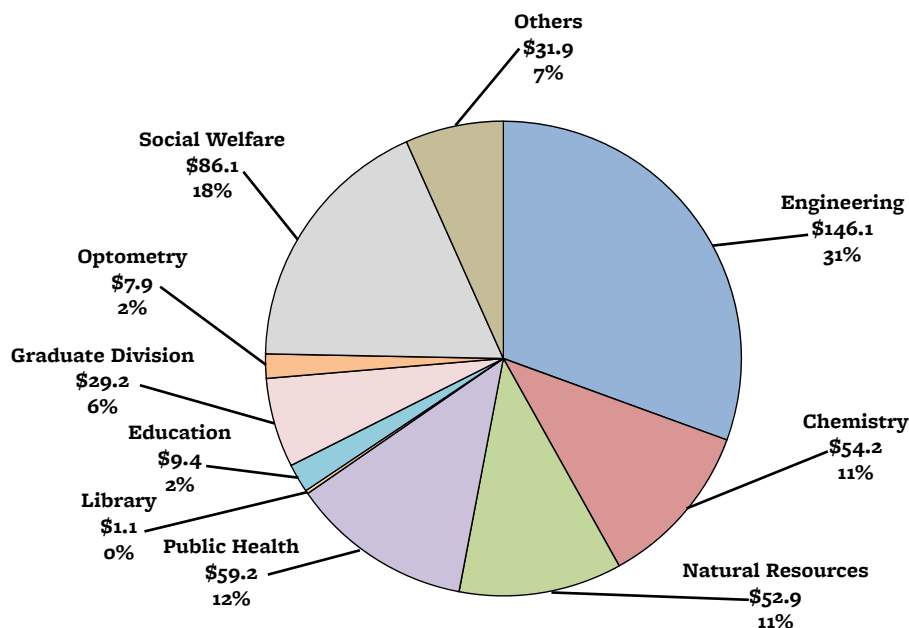


Ten-Year Funding Summary by Control Unit, FY 2012-2021
(\$7.73 billion total - dollars in millions)

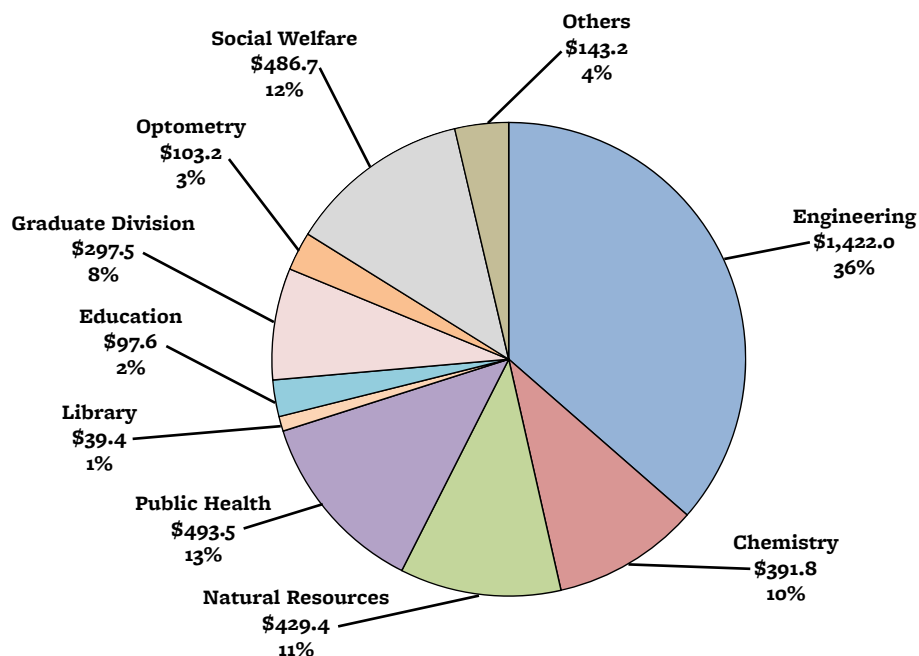


Funding by Campus Colleges, Schools, and Divisions

Fiscal Year 2021 Funding Summary by Colleges, Schools, and Divisions
 (\$477.7 million total - dollars in millions)



Ten-Year Funding Summary by Colleges, Schools, and Divisions, FY 2012-2021
 (\$3.9 billion total - dollars in millions)



Awards by Funding Source Overview - All Sponsors

In fiscal year 2021, federal funding saw a 45% increase over fiscal year 2020, at \$605 million. Federal funding made up the largest portion of total funding received with 57% of the total.

Funding from nonprofit organizations in fiscal year 2021, including foundations, charities, research institutes, and institutions of higher education, increased by 17% with a total of \$229 million.

State of California funding increased by 26% in fiscal year 2021, to a total of \$113 million. Funding from other governmental sources totaled \$5 million, 43% less than in fiscal year 2020. Funding from corporate sponsors decreased by 9% to a total of \$63 million.

Award Highlight

California 100

Funded by \$17,711,029 from the California Community Foundation, the California 100 Initiative will provide a transformative vision and strategy for California's next 100 years that is grounded in systematic research and evidence, deeply engaged with Californians around the state, and guided by core values and commitments to innovation, resilience, inclusion, sustainability, and equity.

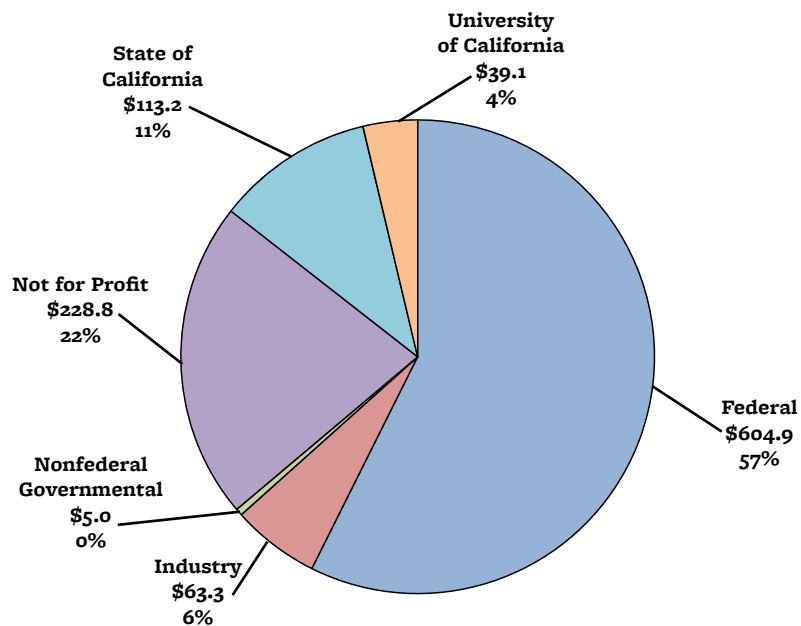
The California 100 Initiative will harness the talent of a diverse array of leaders and academic institutions from across the state, through an advisory commission (California 100 Commission) and four main engines of transformation: research, engagement, innovation, and advanced technology. The California 100 Commission will draw on a diverse group of experts by industry, region, race, and gender who have demonstrated expertise in key topic areas..

<https://peoplelab.berkeley.edu/about-california-100/>

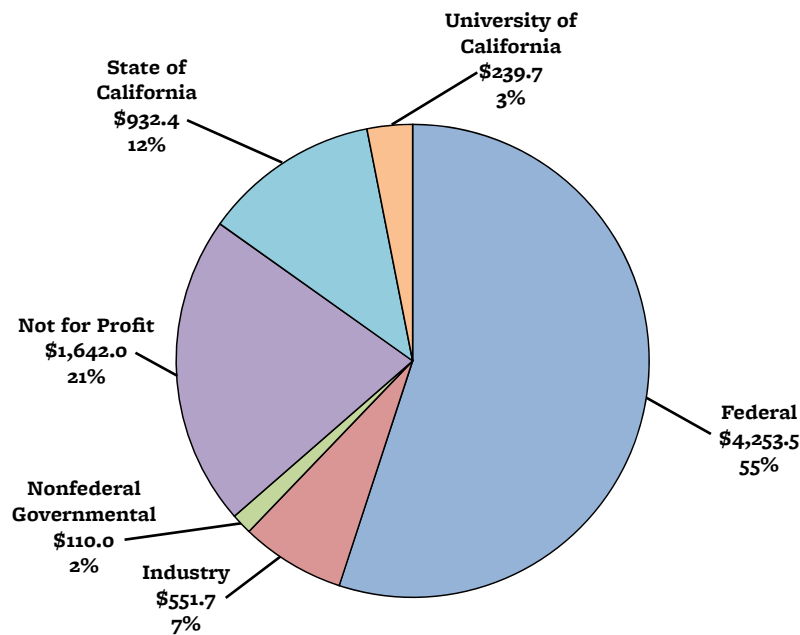


Overview - All Sponsors

Fiscal Year 2021 Funding Summary - All Sponsors
 (\$1.05 billion total - dollars in millions)

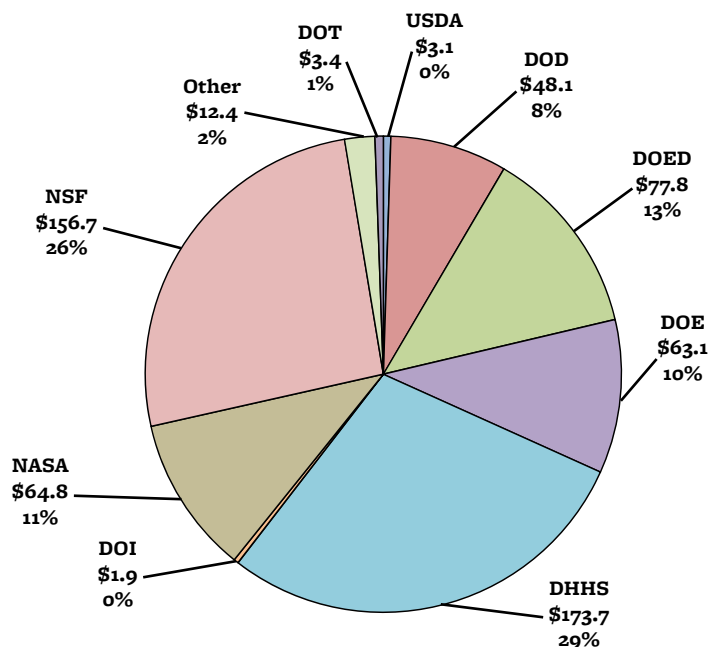


Ten-Year Funding Summary - All Sponsors, FY 2012-2021
 (\$7.73 billion total - dollars in millions)



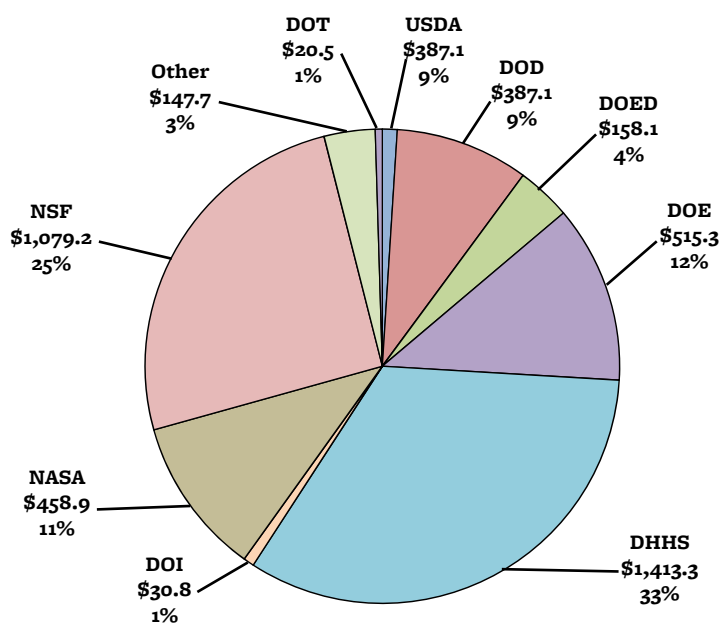
Federal Agencies

Fiscal Year 2021 Funding Summary - Federal Sponsors (\$604.9 million total - dollars in millions)



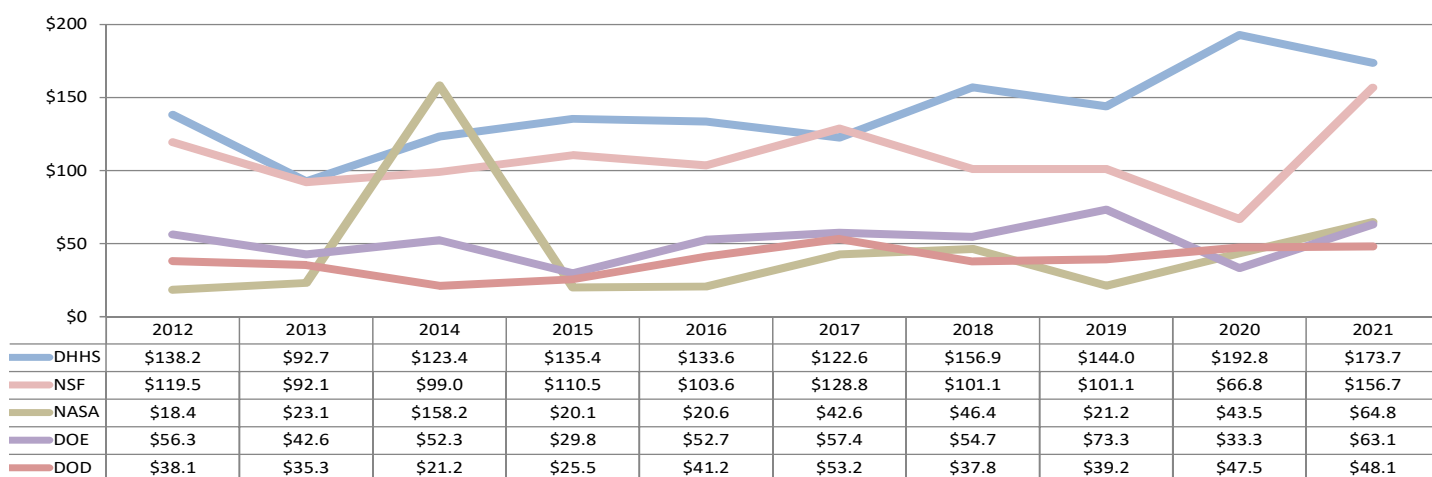
In fiscal year 2021, the Department of Health and Human Services was the largest source of federal funds, with \$174 million, a 10% decrease from fiscal year 2020 and 29% of the federal total. The National Science Foundation was the second largest with \$157 million, a 135% increase from fiscal year 2020. Federal funding again made up the largest portion of total funding received with 57% of the total.

Ten-Year Funding Summary - Federal Sponsors, FY 2012-2021 (\$4.25 billion total - dollars in millions)



Federal Agencies

Ten-Year Funding Summary for Top-Five Federal Sponsors, FY 2012-2021
(dollars in millions)

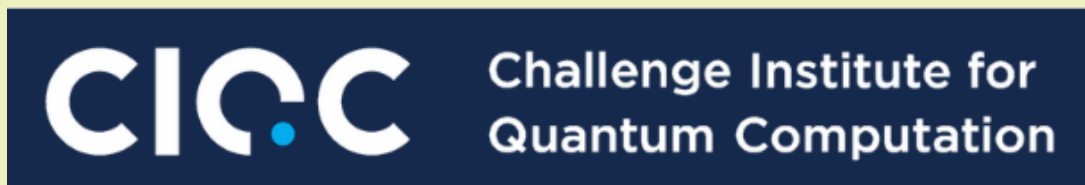


Award Highlight

NSF Challenge Institute for Quantum Computation

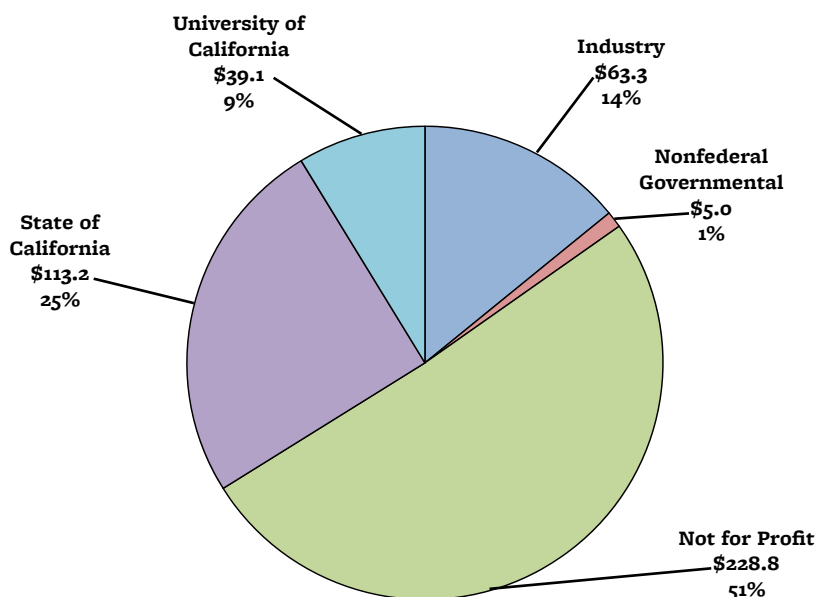
The National Science Foundation awarded UC Berkeley \$24,936,988 over five years to establish a multi-university institute focused on advancing quantum science and engineering and training a future workforce to build and use quantum computers. The Institute connects UC Berkeley, UCLA, UC Santa Barbara, and five other universities around the nation, harnessing a wealth of experimental and theoretical quantum scientists to improve and determine how best to use today's rudimentary quantum computers. The ultimate goal, is to make quantum computers as common as mobile phones.

<https://ciqc.berkeley.edu/>



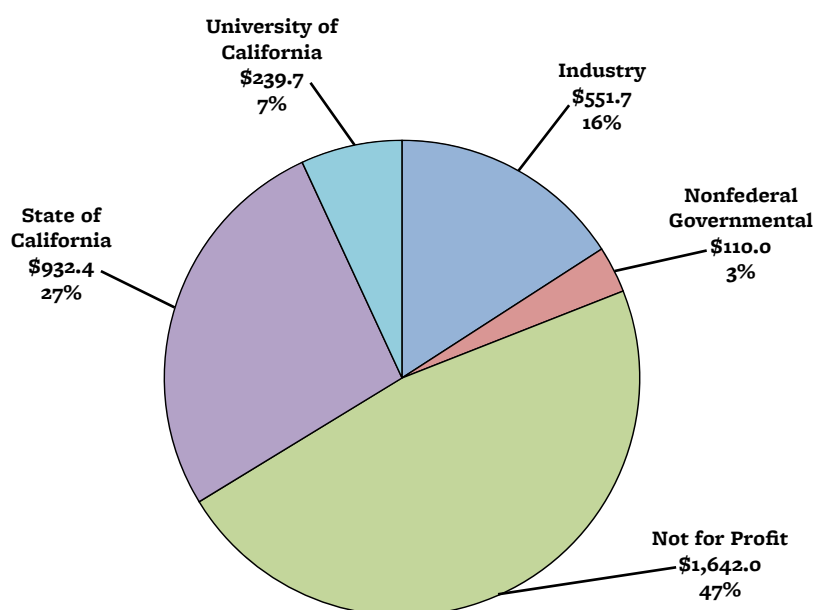
Nonfederal Agencies

Fiscal Year 2021 Funding Summary - Nonfederal Sponsors (\$449.5 million total - dollars in millions)



Over the last ten years, funding from the nonprofit sector has made up 47% of nonfederal funding. In fiscal year 2021, that sector provided 51% of the \$449.4 million received from nonfederal sources.

Ten-Year Funding Summary - Nonfederal Sponsors, FY 2012-2021 (\$3.48 billion total - dollars in millions)



Largest Awards, Fiscal Year 2021

Linda Burton, Social Welfare, "CalSWEC Title IV-E Program," California Department of Social Services, \$80,852,322

Dan Stamper-Kurn, Physics, "QLCI-CI: NSF Quantum Leap Challenge Institute for Present and Future Quantum Computing," National Science Foundation, \$24,936,988

Alanna Schepartz, Chemistry, "NSF Center for Genetically Encoded Materials," National Science Foundation, \$20,000,000

Amy Lerman, Goldman School of Public Policy, "California 100," California Community Foundation, \$17,711,029

Eva Harris, School of Public Health, "Protective Immunity following Dengue Virus Natural Infections and Vaccination," National Institute of Allergy and Infectious Diseases, \$12,717,554

Wick Haxton, Physics, "Network for Neutrinos, Nuclear Astrophysics, and Symmetries," National Science Foundation, \$10,900,000

Sanjit Seshia, Electrical Engineering and Computer Sciences, "LOGiCS: Learning-Driven Oracle-Guided Compositional Symbiotic Design of Cyber-Physical Systems," Air Force Research Laboratory, \$9,751,303

Eva Harris, School of Public Health, "American and Asian Centers for Arboviral Research and Enhanced Surveillance (A2CARES)," National Institute of Allergy and Infectious Diseases, \$7,784,662

James Hurley, California Institute for Quantitative Biosciences, "Mechanisms of Mitochondrial Damage Control by PINK1 and Parkin," Michael J. Fox Foundation for Parkinson's Research, \$7,048,590

Daniel Klein, Electrical Engineering and Computer Sciences, "TONIC: Trusted Online Content," Defense Advanced Research Projects Agency, \$6,998,212

Thomas Immel, Space Sciences Laboratory, "The Global Lyman-alpha Imagers of the Dynamic Exosphere (GLIDE) Mission - Phase B / CSR," National Aeronautics and Space Administration, \$6,934,000

Donald Rio, Molecular and Cell Biology, "Dissecting Genetic Interactions of Parkinson's Disease Associated Risk Loci," Michael J. Fox Foundation for Parkinson's Research, \$6,821,770

Poppett, Claire, Space Sciences Laboratory, "Operations Support of the DESI Project," Lawrence Berkeley National Laboratory (U.S. Department of Energy prime sponsor), \$6,406,869

Douglas Friedman, California Institute for Quantitative Biosciences, "BioMADE: The Bioindustrial Manufacturing And Design Ecosystem," Engineering Biology Research Consortium (Air Force Research Laboratory prime sponsor), \$6,354,260

Ehud Isacoff, Molecular and Cell Biology, "Vision Restoration with BGAG-mGluR," Vedere Bio II, Inc., \$6,244,620

Jennifer Doudna, Innovative Genomics Institute, "Master Agreement: ATP Functional Genomics Laboratory," Apple Tree Partners, \$6,200,000

Peter Bartlett, Electrical Engineering and Computer Sciences, "Collaborative Research: National Institute for Foundations of Data Science," National Science Foundation, \$5,900,308

Kathleen Collins, Molecular and Cell Biology, Human Genetic Supplementation Without Donor DNA or a DNA Break, National Heart, Lung, and Blood Institute, \$5,608,750

Peter Bartlett, Electrical Engineering and Computer Sciences, "Collaboration on the Theoretical Foundations of Deep Learning," National Science Foundation, \$5,000,000

Peter Bartlett, Electrical Engineering and Computer Sciences, "Collaboration on the Theoretical Foundations of Deep Learning," Simons Foundation, \$5,000,000

Jasper Rine, California Institute for Quantitative Biosciences, "Epigenetic and Metabolic Regulation of Gene Silencing in Saccharomyces," National Institute of General Medical Sciences, \$4,688,401

Award Highlights

NSF Center for Genetically Encoded Materials (C-GEM)

The National Science Foundation has selected C-GEM as one of two Phase I Centers to advance to Phase II of the Centers for Chemical Innovation program, receiving \$20,000,000 in funding over the next five years. The Center supports research in 14 laboratories at UC Berkeley, Yale, Stanford, Cornell, Boston College, and St. Jude Children's Research Hospital.

The effort brings together a team of chemists, biologists, engineers, and data scientists to tackle a "Holy Grail" problem in the chemical sciences: how to synthesize truly sequence-defined chemical polymers, oligomeric molecules possessing both a pre-determined, diverse sequence, and a defined length..

<https://gem-net.net/>



Asian-American Centers for Arbovirus Research and Surveillance (A2CARES)

Funding of \$7,784,662 from the National Institute of Allergy and Infectious Diseases supports A2CARES, a member of the Centers of Research in Emerging Infectious Diseases (CREID). CREID is a global initiative to prepare the world for the next pandemic.

A2CARES includes a consortium of partners in Nicaragua, Ecuador, Sri Lanka and the United States with the overarching goal of developing an interconnected, harmonized network of clinical and laboratory sites to provide the foundation for research programs, compare arboviral diseases across geographic regions, develop and implement cutting-edge molecular and serological testing methods, and respond efficiently and effectively to new disease outbreaks.

<https://www.a2cares.com/>

