

California's state government agencies rely on UC's research capabilities to inform their policies and operations, and they also depend upon UC's institutional strengths and statewide presence to provide social services and healthcare to citizens throughout the state.

The University of California, in addition to serving as the state's premier higher education system, is also an integral part of the operations of the major agencies and departments of state government. When California state agencies require research expertise, or an institutional partner to help them with social service delivery or education program development or environmental monitoring, they frequently turn to UC. These long-standing partnerships are critical to the well-being of California residents and the health of the environment. Recent collaborative efforts between UC and state agencies include:

- the California Social Work Education Center at UC Berkeley, which receives funding from the California Department of Social Services to develop child welfare curriculum and to support students in 22 schools of social work throughout the state;
- the emergency response center for communicable diseases at UC Davis, supported by the Department of Public Health;
- the California Problem Gambling Treatment Services Program at UCLA;
- the Institute for Transportation Studies at UC Berkeley, a long-time partnership with the California Department of Transportation (CalTrans);
- the support for laboratory facilities and research programs to advance stem cell therapies, funded by the California Institute for Regenerative Medicine (CIRM);
- the Demand Response Research Center at Lawrence Berkeley National Laboratory, to conduct research in smart grid systems, supported by the California Energy Commission;
- the construction of research and administrative facilities at the Blue Oak Ranch Reserve in Santa Clara County, supported by the California Wildlife Conservation Board;
- the South Coast Baseline Monitoring Program, operated by the Scripps Oceanographic Institute at UC San Diego, supported by the State Coastal Conservancy;
- operation of the state's veterinary laboratory diagnostic system by UC Davis, supported by the Department of Food and Agriculture.

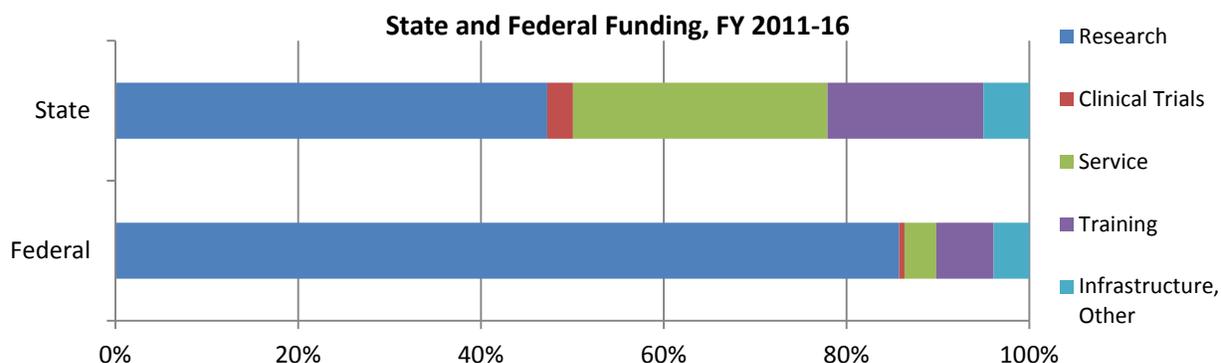
These are just a few of the many projects at UC that are funded by state agencies. Their success hinges on close collaboration and a shared vision of how the practical objectives and strategic plans of state government converge with and reinforce the mission of a great public university.

### The dimensions of state funding

UC's close connections with many state government agencies and departments have resulted in nearly \$2.7 billion in funding for research, public service and related efforts over the last six years. These amounts are separate from and in addition to state instructional appropriations. About 95% of this project funding total is provided by programs in seven major state agencies.

Health and Human Services Agency	1,142M
California Institute for Regenerative Medicine	458M
Natural Resources Agency	369M
Transportation Agency	228M
Department of Food and Agriculture	182M
California Environmental Protection Agency	83M
Department of Education	69M
<u>Other State Departments, Agencies and Boards</u>	<u>145M</u>
<b>State Agency Funding Total</b>	<b>2.676B</b>

California state government provides about 11.5% of UC's total project funding, compared to about two-thirds from the federal government. Unlike federal funding, which is primarily directed towards basic research in medicine and in scientific fields, state funding supports a much more diverse portfolio of applied research, social service projects, training programs and infrastructure development.



<i>Project Type, \$ millions</i>	<i>Federal</i>	<i>State</i>
Research	17,077	1,265
Clinical Trials	123	76
Service	694	745
Training	1,244	457
Infrastructure, Other	778	134
<b>Total</b>	<b>19,916</b>	<b>2,676</b>

While about 86% of federal funding goes for research projects, only about 47% of state agency funding is specifically directed to research, including clinical trials. Significant state funding supports service and training projects, as well as infrastructure projects to develop the physical facilities for future state-funded efforts.

### State agency project portfolios

The project portfolios of the seven state agencies that have provided the most project support to UC over the past five years demonstrate both the broad range of UC's collaborations with other branches of state government, and the extraordinary impact these projects have had across the state.

### California Health and Human Services Agency

Responsible for the administration and oversight of state and federal programs for health care, social services, public assistance and rehabilitation, the Health and Human Services Agency (HHS) is UC's largest state agency partner. Over the last six years, about \$1,142M in support came from HHS, representing 43% of UC's overall state project funding. While research is an important part of UC's relationship with HHS, public service and training programs play a much greater role.

<b>California Health and Human Services Agency funding</b>				
<i>Research</i>	<i>Public Service</i>	<i>Training</i>	<i>Infrastructure</i>	<i>Equipment, Other</i>
223,185,000	480,784,000	390,132,000	288,000	48,004,000

The largest UC program supported by HHS is the California Social Work Education Center (CALSWEC), managed at UC Berkeley, with \$203 million over the last six years. This project is financed in large part by federal Title IV-E Child Welfare Training Program matching funds, which originate with the U.S. Department of Health and Human Services and are administered by state HHS counterparts.

The California HHS agency in turn subcontracts with UC Berkeley, which manages and oversees the distribution of these funds to 22 schools of social work throughout the state, principally to provide stipends to students who intend to follow careers in child welfare services. After graduation, the students will work in county child welfare services for a period equal to the time for which they received state support. The CALSWEC program is a successful example of how federal, state and public university organizations can align their operations to serve the public good. More information about this program is available at the CALSWEC website (<http://calswec.berkeley.edu/title-iv-e-stipend-program>).

Other major partnerships with California HHS, many with the Department of Public Health (DPH), include:

- the Residency Program in General Preventive Medicine and Public Health, a collaboration between UC San Francisco and UC Berkeley School of Public Health — \$91M from DPH;
- the Communicable Disease Emergency Response program at UC Davis — \$79M from DPH;
- the California Poison Control System, including the 800-number hotline service, operated by UC San Francisco — \$59M from the HHS Emergency Medical Services Authority;
- the UC CalFresh Nutrition Education Program, managed by UC Davis — \$39M from the Department of Social Services;
- the STD Prevention Training Center at UC San Francisco — \$38M from DPH;
- the Statewide California Cancer Registry operated by UC Davis — \$29M from DPH;
- the California Problem Gambling Statewide Treatment Program at UCLA — \$25M from the Department of Alcohol and Drug Problems.

These examples, along with hundreds of other service and training programs, illustrate how crucially UC's public service mission depends on state funding, particularly from Health and Human Services.

### California Institute for Regenerative Medicine (CIRM)

In 2004, California voters responded to the federal government's limitation on funding stem cell research by passing Proposition 71: the California Stem Cell Research and Cures Initiative. This created the California Institute for Regenerative Medicine as an independent agency of the state government, with the mission and the funding to promote stem cell research in California. The CIRM program began laying the foundations for research into stem cell therapies by providing funding for training researchers and constructing special laboratory facilities.

Since 2008 when the first awards were issued, UC has received over \$1 billion from CIRM, and a significant portion of the early awards were laboratory construction and renovation grants. In the past six years, UC has received \$458 million from CIRM, making it UC's second-largest source of state funding. About 91% of these recent awards are for research.

California Institute for Regenerative Medicine funding				
<i>Research</i>	<i>Public Service</i>	<i>Training</i>	<i>Infrastructure</i>	<i>Equipment, Other</i>
418,457,000	6,659,000	29,686,000	2,621,000	323,000

Every campus with the UC system has received some funding over the past five years from CIRM, though most of the funding has gone to campuses with medical centers.

<b>UC Campus</b>	<b>CIRM Awards</b>
Los Angeles	152,666,000
San Diego	90,149,000
Davis	81,523,000
San Francisco	47,643,000
Irvine	47,550,000
Berkeley	19,130,000
Santa Cruz	10,450,000
Santa Barbara	7,296,000
Riverside	863,000
Merced	476,000
<b>TOTAL</b>	<b>457,736,000</b>

Major campus stem cell research awards from CIRM include:

- treatments for osteoporosis at UC Davis — \$18M;
- treatment of retinitis pigmentosa at UC Irvine using retinal progenitor cells — \$17M;
- targetting of tumor initiating cells in solid tumors at UCLA — \$16M;
- genetic re-programming of stem cells to fight cancer at UCLA — \$13M;
- clinical trial at UCLA of stem cell gene therapy for sickle cell disease — \$11M;
- treatments for Huntington’s Disease at UC Davis — \$10M;
- support for the Alpha Stem Cell Clinic at UC San Diego, one of three CIRM-funded clinics focussing on stem cell-related drugs and therapies — \$10M.

CIRM has also funded about 250 other research and training projects over the last six years, and continues to be a major source of support for innovative medical research.

### California Natural Resources Agency

The California Natural Resources Agency includes a number of departments and commissions that frequently collaborate with UC. About 80% of UC’s \$369M funding from the Natural Resources Agency over the past five years is provided by four of its divisions, the largest of these being the California Energy Commission.

<b>Natural Resources Agency Division</b>	<b>UC funding</b>
California Energy Commission	208,477,000
California Department of Water Resources	32,205,000
California Department of Fish and Wildlife	32,109,000
California Wildlife Conservation Board	20,729,000
All other Resource Agency Divisions (17+)	75,494,000

Nearly 90% of UC's funding from the California Natural Resources Agency supports research, principally focussed on energy use and conservation, alternative energy sources, environmental monitoring and resource management.

<b>California Natural Resources Agency Funding</b>				
<i>Research</i>	<i>Public Service</i>	<i>Training</i>	<i>Infrastructure</i>	<i>Equipment, Other</i>
322,197,000	4,868,000	2,622,000	22,829,000	6,499,000

Every UC campus, along with Lawrence Berkeley Lab and the Division of Agriculture and Natural Resources, has received funding from the Natural Resources Agency over the last five years. Major UC awards from Natural Resources Agency divisions include:

- the Coastal Data Information Program, managed by UC San Diego's Scripps Institution of Oceanography, which collects and analyzes coastal environmental data for research, planning and maritime safety — \$12M from the Department of Parks and Recreation and its Division of Boating and Waterways;
- the California Natural Gas Vehicle Incentive Program, operated by UC Irvine — \$11.2M from the California Energy Commission
- development by UC Berkeley of multi-use facilities and infrastructure at the Blue Oak Ranch Reserve in Santa Clara County, part of the UC Natural Reserve System— \$7.6M from the California Wildlife Conservation Board;
- support for the Demand Response Research Center at Lawrence Berkeley Laboratory and its research in smart grid systems — \$6.8M from the California Energy Commission;
- research in building energy efficiency at Lawrence Berkeley Laboratory — \$6.5M from the California Energy Commission;
- research at Lawrence Berkeley Laboratory on deploying anaerobic digestion for municipal solid waste-to-energy plants — \$4.3M from the California Energy Commission.

These large awards are only a small sample of the nearly 600 UC projects funded by the Natural Resources Agency over the last six years. Support from the Energy Commission, coupled with federal support from the U.S. Department of Energy, has helped to make UC a world leader in assessing, monitoring and ultimately solving global energy problems.

## California Transportation Agency

The University of California serves as the principal research arm of CalTrans, and has received nearly \$228M in project funding over the past six years. Almost 75% of CalTrans funding to UC is directed towards research, and about 25% supports public service programs, principally the management of the statewide sobriety checkpoint program.

<b>California Transportation Agency Funding</b>			
<i>Research</i>	<i>Public Service</i>	<i>Training</i>	<i>Equipment, Other</i>
173,220,000	50,752,000	3,419,000	256,000

About 60% of all CalTrans funds goes to UC Berkeley, principally to the Berkeley Institute of Transportation Studies for research, and to the Safe Transportation Research and Education Center, which manages the sobriety checkpoint effort. This is the largest single UC project that CalTrans funds, with nearly \$44M received over the last six years. A large portion of these funds originate with the U.S.

National Highway Traffic Safety Administration, and this program represents another important example of federal, state and public university collaboration.

Other significant CalTrans projects at UC include:

- support for the UC Pavement Research Center, a collaboration between UC Berkeley and UC Davis for research on improved pavement structures, materials and technologies — \$41M;
- development of innovative highway maintenance and construction technology at UC Davis — \$17M;
- research and innovation for traffic operations at UC Berkeley’s Institute for Transportation Studies — \$15M.

### California Department of Food and Agriculture

Ever since the University of California was designated, in 1868, as California’s Land-Grant university under the terms of the federal Morrill Land Grant Act, UC has promoted agriculture in the state through a wide range of research and extension programs. Over the past six years, the California Department of Food and Agriculture has provided \$182M in program support to UC. About 90% of this amount has gone to the UC Davis School of Agriculture, which, in turn, runs many programs in conjunction with and on behalf of UC’s Division of Agriculture and Natural Resources (ANR).

California Department of Food and Agriculture Funding				
<i>Research</i>	<i>Public Service</i>	<i>Training</i>	<i>Infrastructure</i>	<i>Equipment, Other</i>
54,086,000	84,702,000	1,604,000	41,930,000	14,000

The largest single component of UC’s relationship with the Department of Food and Agriculture revolves around a partnership with the UC Davis School of Veterinary Medicine to manage the California Animal Health and Food Safety Laboratory system. Through rapid and reliable diagnosis of animal diseases and food safety testing, this network of four diagnostic laboratories, one of which is on the UC Davis campus, helps to protect the health of the state’s livestock and poultry and the safety of the state’s food supply. Over the past five years, UC Davis received nearly \$77 million to manage this program, and an additional \$41.5M in infrastructure awards for construction of the South Valley Animal Health Laboratory in Tulare County.

Most of the other 350-plus projects with the Department of Food and Agriculture, totalling about \$64M, are mid-size research grants, principally to UC Davis, but also to Riverside, Berkeley and the Division of Agriculture and Natural Resources. These projects include:

- breeding wine grapes at UC Davis that are resistant to Pierce’s disease — \$2.8M;
- managing insecticide resistance in Glass-Wing Sharpshooter populations at UC Riverside — \$630K;
- an ANR demonstration project showing the economic and environmental benefits of hot-water pest eradication — \$402K;
- consumer outreach by ANR to enhance awareness and marketing of specialty crops in the Sierra foothills — \$390K.

The results of these research projects are communicated to the farmers and livestock producers across the state through outreach programs, farm advisors and Cooperative Extension efforts managed by ANR as part of its mission to serve California agriculture.

## California Department of Education

UC’s connection with the state Department of Education — in addition, of course, to the support and oversight of the University’s degree-granting operations — focuses on management of a wide range of educational service programs on the Department’s behalf. These projects involve about \$69M over the past six years.

California Department of Education Funding			
<i>Research</i>	<i>Public Service</i>	<i>Training</i>	<i>Equipment, Other</i>
8,282,000	49,586,000	9,065,000	2,194,000

The largest of these efforts is the California Subject Matter Project, receiving nearly \$20M in funding over the past five years. Administered through the UC Office of the President, this project supports a network of nine discipline-oriented projects throughout the state that promote teacher professional development. The objective is to assist teachers in their efforts to help students meet college entrance (“a-g”) requirements. (For more information about this project, see <https://csmp.ucop.edu/>.)

Other California Department of Education projects at UC include:

- EastBay Collaborative for Underserved Children, an after-school initiative managed by UC Berkeley involving district schools and community organizations — \$8.7M;
- statewide implementation by UC Irvine of the Afterschool Outcome Measures online toolbox — \$2.9M;
- the “Family Childcare at its Best” training and technical assistance program at UC Davis — \$3.1M
- migrant student and parent leadership institutes at UCLA — \$1M.

The partnership projects between UC and the state Department of Education are based on the fundamental principal that the University’s role in maintaining a well-educated population is not limited to its own classrooms. It must also consider the education pipeline from pre-school through high school, and the ongoing professional development of childcare professionals and teachers.

## State agency partnership perspective

The agency project portfolios presented here include some of the largest partnerships between UC and California state agencies, but these represent only a few of the more than 4,000 projects the state has funded at UC over the past five years. Each of these myriad efforts, even those with relatively modest sums attached, is carefully designed to meet a critical need and to assist state government in serving the people of California. The volume and scope of these projects demonstrate how the University of California acts as an indispensable partner with state agencies, providing unmatched research capabilities as well as the institutional means to deliver essential social welfare and educational services to the state’s growing and diverse population.

For more information about sponsored projects and UC’s research activities, see Chapter 9 of the 2016 Accountability Report (<http://accountability.universityofcalifornia.edu/2016/chapters/chapter-9.html>) and the UC Information Center visualization on Research Sponsorship at UC (<http://www.universityofcalifornia.edu/infocenter/research-sponsorship-uc>).

*Data source: UC Information Center Data Warehouse Contracts & Grants system. Award amounts are not adjusted for inflation.*