UNIVERSITY OF CALIFORNIA
RESEARCH INITIATIVES

UC National Laboratory Fees Research Program

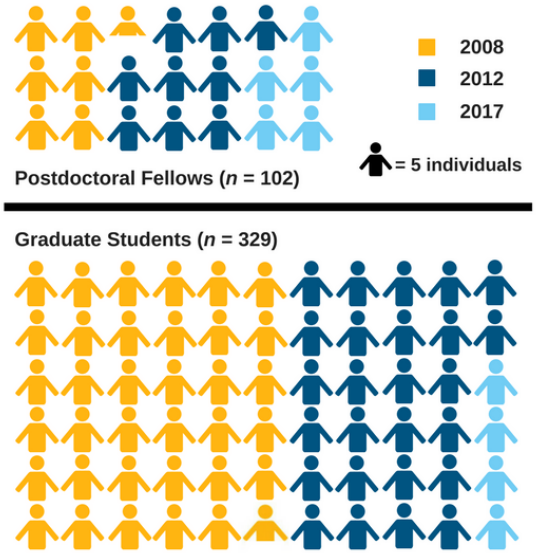
Building on over six decades of scientific partnership between the University of California and its affiliated national labs, the UC National Laboratory Fees Research Program (LFRP) has continued to advance the shared missions of research and public service by investing over $148 million in UC-NL research collaborations since 2008. Funds for these strategic investments derive from the net fee income UC receives for managing Los Alamos (LANL) and Lawrence Livermore National Laboratories (LLNL) on behalf of the U.S. Department of Energy (DOE). LFRP-funded projects address critical national security needs and produce discoveries that benefit California, the nation, and the world.

Program Snapshot

- $148M in research awards
- 133 collaborations involving >350 faculty and scientists
- >$175M in leveraged funding from 2009 to 2015

Training the Next Generation of National Security Experts

Mentorship at the national laboratories, and the cultivation of collaborative research engagements, are critical contributions of the funding program. LFRP awards support unique training opportunities at the national laboratories for UC graduate students and postdoctoral fellows, preparing them for careers in science and national security at the national labs, in academia, and in industry. Launched in 2017, the UC-National Lab In-Residence Graduate Fellowships have awarded six outstanding UC graduate students with 3-year dissertation and training grants at either LANL or LLNL in fields that include atomic physics, biology and environmental science. These fellows are part of a cohort of more than 430 students and post-doctoral researchers supported by the LFRP since 2008.



Tackling Real-World Problems to Benefit California and the Nation

Covering a full range of scientific inquiry from energy and environment to engineering and computational sciences, LFRP funding catalyzes multi-disciplinary and inter-disciplinary teams to tackle challenging problems and find solutions to critical issues. Examples from the 2008 and 2012 funding cycles include:

Energy and Environment

UC Riverside and LANL researchers developed a new thermal storage medium to store vast amounts of renewable energy, helping reduce greenhouse gases and dependency on fossil fuels.

Health

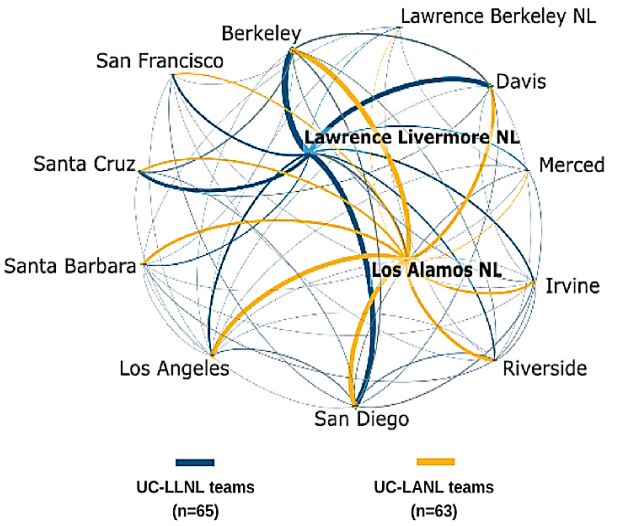
UCSF, UC Berkeley, and LLNL researchers created a low-cost mobile phone-operated microscope to detect drug-resistant tuberculosis for use in remote and low-resource areas around the world.

National Security

Over 100 dissertation fellowships and in-residence training programs for UC students at LANL and LLNL prepare the next generation of researchers and policymakers to enhance national and international security.

Engaging Expertise and Facilities Across UC

LFRP funding incentivizes partnerships between and among all 10 campuses and both LANL and LLNL, as well as Lawrence Berkeley National Laboratory. These collaborations capitalize on the strengths and resources of each institution to launch compelling, cutting-edge research at the frontiers of discovery. The diagram on the right illustrates the strength of these partnerships, highlighting the integrated networks of collaboration they foster. In total, LFRP has supported 133 UC-NL collaborations in its first ten years. These partnerships have spawned ongoing scientific cooperation, attracting more than $175 million in extramural funding and producing over 1,200 peer-reviewed publications.



Lines indicate the connected institutions partnered on a project. Line thickness corresponds to the number of projects the institutions collaborated on.

Stimulating Cutting-Edge Discoveries

Since 2017, LFRP has directed its funding towards novel research in strategic areas of scientific and national security importance, identified as high-impact areas for UC-national lab synergy. The $38.7 million investment has funded multicampus-national laboratory teams to pursue breakthroughs in:

- **Biological applications of advanced computing**
- **Climate science**
- **Cybersecurity**
- **High energy density science**
- **Mesoscale materials science**
- **National security through social sciences**

Positioning UC and California for Continued National Leadership in Science, Technology and Policy

The impact of LFRP, and the benefit of UC-NL partnerships, is evident in the role they play nationally and internationally. As one example, after the Fukushima Daiichi nuclear accident in 2011, national lab scientists and UC students affiliated with the Berkeley Nuclear Research Center, which launched with seed funding from LFRP, contributed crucial environmental analysis to enhance safety and prevent future disasters in the US and around the world. The BNRC continues to provide national leadership, with an additional $50 million in DOE funding to lead a consortium of eight universities and five national laboratories addressing critical issues in nuclear science and safety.

In addition to the US Department of Energy, LFRP teams have secured extramural funds from over 25 organizations, including:

MacArthur Foundation
National Aeronautics and Space Administration
National Institutes of Health
National Science Foundation
Sloan Foundation
U.S. Department of Defense
U.S. Environmental Protection Agency