

ACADEMIC COUNCIL SPECIAL COMMITTEE ON LAB ISSUES ANNUAL REPORT 2022-23

TO THE MEMBERS OF THE ACADEMIC COUNCIL:

The Academic Council Special Committee on Lab Issues (ACSCOLI) was established by the Academic Council to provide broad-based Senate oversight of UC's relationship with the National Laboratories – Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL), and Lawrence Berkeley National Laboratory (LBNL, also called the Berkeley Lab). ACSCOLI advises the President and Regents on general policies relating to the National Laboratories, which includes the dispersal of UC's share of net fee monies, policies that affect the lab science management, and the quality of science being performed at the labs. ACSCOLI is also concerned with evaluating the benefits of UC's continued participation in the management of the labs and has been charged by the Academic Council with stimulating closer connections between the lab staff, faculty, and students.

ACSCOLI met three times during 2022-2023 academic year (AY). Two meetings were held via videoconference, and one was held at the new University of California Livermore Collaboration Center (UCLCC). A summary of the committee's discussions is below.

OFFICE OF THE UC NATIONAL LABORATORIES

At each ACSCOLI meeting, Vice President Craig Leasure, Associate Vice President June Yu, and Executive Director for National Laboratory Programs Alan Wan provided updates on the national labs and the work of the office of the UC National Laboratories. In January, ACSCOLI was also joined by Camille Bibeau, the new Executive Director for National Laboratories Partnerships and Outreach for UCNL, who joined UCOP office after a long career in laser physics at Lawrence Livermore Lab.

UC is the prime contractor for the management and operation of Lawrence Berkeley National Laboratory (LBNL). The University is a partner in the Lawrence Livermore National Security (LLNS), LLC, that manages Lawrence Livermore National Laboratory (LLNL) and in Triad National Security, LLC, the partnership that manages Los Alamos National Laboratory (LANL). LLNS and Triad are overseen by the National Nuclear Security Administration (NNSA), an agency within the U.S. Department of Energy. The office of the UC National Laboratories coordinates this work for the University.

UC has partnered with LLNL's Weapons and Complex Integration (WCI) Directorate on a new Early Career UC Faculty Initiative as part of UC's ongoing efforts to build enduring relationships with the labs. This year's award, on the topic of Artificial Intelligence and Machine Learning (AI/ML), will provide a researcher with \$1m over five years. In addition to sponsoring worthwhile research, the initiative is intended to foster connections between UC and LLNL researchers and technical staff, enable the hiring of UC postdocs and students, provide LLNL researchers with opportunities to collaborate and connect to the UC community, and develop a cadre of UC faculty who appreciate and support LLNL in the long-term.

Two postdoctoral programs are also underway. UCNL's Technology and International Security postdoc program, which is housed at the UCDC offices in Washington, DC, welcomed its third cohort of six participants. The LANL-UC Entrepreneurial Postdoctoral Fellowship Program has supported 22 postdocs since 2017.

In early 2023, UCNL received approval from the UC Board of Regents to submit a bid for the management contract for the Frederick National Laboratory for Cancer Research. The results will be known in 2024.

NATIONAL LABORATORIES UPDATES

The big news this year was that scientists at Lawrence Livermore National Lab's National Ignition Facility achieved fusion ignition. On December 5th, 2022, NIF produced 3.15 megajoules of fusion energy output, paving the way for abundant carbon-free energy sources for the (distant) future. LLNL hosted a celebration of this milestone that included the Secretary of Energy.

Using the ACSCOLI checklist as a guide, Vice President Craig Leasure updated the committee at each meeting on the status of the three national laboratories. ACSCOLI members learned the labs are dealing with the post-pandemic transition to a hybrid schedule for many employees. Most labs are allowing a 3/2 (work/home) schedule, although highly secure work done at the NNSA labs is done on site. The committee heard about significant events affecting the labs, including safety incidents, scientific breakthroughs, conferences, and the status of signature projects. In 2022, Nobel prizes for physics and chemistry were awarded to researchers who had worked at the Livermore and Berkeley labs.

Each year, the US Department of Energy conducts an evaluation of the scientific, technological, managerial, and operational performance of the contractors who manage and operate its national laboratories. These evaluations provide the basis for determining annual performance fees and award term extension, if applicable. All lab scores this year were very high and funding from the federal government continues to be strong.

UC LIVERMORE COLLABORATION CENTER

ACSCOLI was thrilled to hold its May 22nd meeting at the newly opened University of California Livermore Collaboration Center (UCLCC). Formerly the Hertz Hall Complex, the site offers conference rooms and facilities for onsite meetings, conferences, and classes. The space is already attracting new partners and enriching existing relationships with high-tech rooms that offer new approaches to collaboration. There are ongoing efforts with campuses to bring in more guests through the lab's institutes and centers, including summer opportunities and shorter-term sessions for undergraduate students. Faculty members can take advantage of a funded, month-long mini sabbatical program.

While at Lawrence Livermore National Lab, ACSCOLI members were escorted to guided tours of the National Ignition Facility (NIF) and Advanced Manufacturing Laboratory. Members also had an open conversational luncheon with Director Kim Budil and Deputy Director for Science and Technology Pat Falcone where they learned about new initiatives and frank assessment of

challenges that the lab is facing with regard to culture, hybrid work, and other issues. The conversation included discussions about continuing to strengthen lab-UC relationships.

UC OFFICE OF RESEARCH & INNOVATION

UC Vice President for Research & Innovation Theresa Maldonado and her staff joined ACSCOLI meetings during the year to discuss the UC Climate Action state funding, the DOE's Hydrogen Hub, the federal government's CHIPS Act, and other research-related topics. UC received \$185 million from the state for climate research and is responsible for its distribution. For the DOE hydrogen hubs program, UC is leading a coalition of partners in the state that includes environmental justice and workforce development components. The consortium will prepare a proposal for \$2.5-3b, with several projects focused on ports and transportation.

UC LAB FEES RESEARCH PROGRAM

ACSCOLI provided input on the thematic areas for the next Collaborative Research and Training (CRT) award competition of the Lab Fee Research Program (LFRP). Six potential topical areas were drafted by lab leaders, who noted that the community building and relationship formation that results from the LFRP workshops and proposal development are of comparable benefit to the actual funded projects. They encouraged leveraging the new UCLCC at LLNL and the SoCal Hub as collaborative venues. ACSCOLI members discussed the six proposed thematic areas and provided feedback to the Research Grants Program Office. The themes will be narrowed down to three areas of mutual benefit to the labs and UC.

JOINT APPOINTMENTS

Thanks in part to ACSCOLI advocacy, the ability to establish joint appointments for faculty with the national labs is finally moving forward. Two UCSD faculty members – ACSCOLI chair Michael Todd and Rod Lin – and one UCI faculty member – ACSCOLI member Eric Mjolsness – finalized joint appointments with Los Alamos National Lab. Although this is a big milestone, the process involved multiple steps and approvals from the federal government. ACSCOLI will continue to work to institutionalize and simplify these agreements so that others may have a smoother process. Joint appointments allow researchers to pursue funding that is restricted either to lab employees or to faculty.

REPRESENTATION AND OTHER UPDATES

UC Davis Professor Robert Powell, Chair of the Science, Technology, and Engineering Committees for the two NNSA labs, provided updates during the year about the LANL and LLNL boards. UCSB Professor Ram Seshadri serves on the LBNL Advisory Board on behalf of the Academic Senate and also provided the committee with updates about the Berkeley Lab and its impressive leadership.

ACSCOLI members do not report back to a corresponding campus committee, but the committee was joined by Senate leadership during two of the meetings this year for updates about the work of the Senate. These regular updates to standing and special committees help all faculty members have a broader view of the university.

ACSCOLI Chair Michael Todd participated in the LLNS Board of Governors Science and Technology Committee reviews in September 2022 and March 2023. He participated in the LANL Engineering Capability Review in May 2023.

On June 26, ACSCOLI Chair Michael Todd joined the Academic Council meeting to give a presentation of ACSCOLI's discussions over the past year to Council members.

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- Kathleen Erwin, Executive Director, Research Grants Program Office
- Patricia Falcone, Deputy Director for Science and Technology, Lawrence Livermore National Lab
- Craig Leasure, Vice President for the UC National Laboratories
- Theresa Maldonado, UC Vice President for Research & Innovation
- Rebecca Stanek-Rykoff, Program Officer, Research Grants Program Office
- Alan Wan, Executive Director for Laboratory Programs
- June Yu, Associate Vice President for the National Laboratories

Respectfully submitted,

2022-23 ACSCOLI members:

Michael Todd, Chair (UCSD)

Susan Cochran, Academic Council Chair

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Irene J. Beyerlein, UCSB

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Gert Cauwenberghs, UCORP Representative

Darrell Long, UCSC

Kevin Mitchell, UCPB Representative

Eric Mjolsness, UCI

William Newman, UCLA

Peggy O'Day, UCM

Robert Powell, UCD, Chair of the Triad LLC Science, Technology, and Engineering Committee

Ram Seshadri, UCSB, Representative to the Advisory Board of the Lawrence Berkeley National Laboratory.

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