

The Regents of the University of California

NATIONAL LABORATORIES COMMITTEE

September 16, 2020

The National Laboratories Committee met on the above date by teleconference meeting conducted in accordance with Paragraph 3 of Governor Newsom's Executive Order N-29-20.

Members present: Regents Estolano, Kieffer, Kounalakis, Mart, Ortiz Oakley, Reilly, Sures, and Zettel; Ex officio members Drake and Pérez; Advisory members Gauvain and Powell; Chancellors Hawgood, Khosla, and Larive; Staff Advisor Jeffrey

In attendance: Regents Anguiano, Blum, Butler, Elliott, Lansing, Leib, Makarechian, Muwwakkil, Park, Sherman, and Stegura, Regents-designate Lott and Zaragoza, Faculty Representative Horwitz, Secretary and Chief of Staff Shaw, General Counsel Robinson, Provost Brown, Executive Vice President and Chief Financial Officer Brostrom, Executive Vice President Byington, Executive Vice President and Chief Operating Officer Nava, Vice Presidents Leasure and Maldonado, Chancellors Block, Christ, Gillman, Muñoz, Wilcox, and Yang, and Recording Secretary Li

The meeting convened at 11:10 a.m. with Committee Chair Zettel presiding.

1. APPROVAL OF MINUTES OF PREVIOUS MEETING

Upon motion duly made and seconded, the minutes of the meeting of July 29, 2020 were approved, Regents, Estolano, Kieffer, Kounalakis, Mart, Ortiz Oakley, Pérez, Reilly, Sures, and Zettel voting "aye" and Regent Drake abstaining.¹

2. OVERVIEW OF UC NATIONAL LABORATORY FEES RESEARCH PROGRAM

[Background material was provided to Regents in advance of the meeting, and a copy is on file in the Office of the Secretary and Chief of Staff.]

Vice President Leasure explained that the UC National Laboratory Fees Research Program (Program) was funded with fee income from Los Alamos National Laboratory (LANL) and Lawrence Livermore National Laboratory (LLNL) and administered by Research and Innovation at the Office of the President (UCOP). In the mid-2000s, the Regents approved a procedure for the annual allocation of LANL and LLNL limited liability company fee income. Through this action, the Regents recognized that the fee income should continue funding research that connected the National Laboratories to campuses. The Program was established around 2008 and reflected the public service nature of UC's commitment to the National Laboratories, which aligned with UC's mission. The University operated the

¹ Roll call vote required by the Bagley-Keene Open Meeting Act [Government Code § 11123(b)(1)(D)] for all meetings held by teleconference.

National Laboratories to maintain a world-class enterprise of science, technology, and engineering, in an environment of intellectual freedom and scientific integrity, to address the greatest science and security challenges of the present time. Over \$170 million in fee income had been invested into the Program since its inception. UC National Laboratories intended to maintain an annual funding baseline of \$10 million. The Program distinguished UC National Laboratories from other National Laboratories, whose fee income might be profit for shareholders or used for unrelated purposes, and would be a positive discriminator when the University competes for the LANL and LLNL contracts or when competing for new National Laboratory contracts.

Vice President Maldonado stated that, since 2008, \$170 million in research and training awards has supported over 575 student trainees and 380 faculty from all ten campuses. These investments have created a powerful research network among the National Laboratories and campuses. In the last three years, the \$60 million awards were given for research in high-impact areas such as climate science, wildfire prevention and mitigation, and cyber and national security. These investments also helped secure over \$200 million in federal funding. The Program used \$3.75 million to support UC student trainees working at LLNL. Trainees performed environmental analyses after the Fukushima nuclear power plant disaster in 2011. The UCSD Center for Frontiers in High Energy Density Science hosted summer schools and traineeships for high school to graduate students. Training opportunities have helped UC attract the best students to its campuses, and research funding helped cover students' basic cost of living expenses. Students learned to use advanced instrumentation, developed their self-confidence, and had a competitive advantage for other fellowships. This experience prepared them for successful careers.

LLNL postdoctoral fellow and UC Merced graduate Kimber Moreland introduced herself as a soil biogeochemist who sought ways in which soil could mitigate climate change. After a difficult upbringing, she decided to pursue graduate studies, choosing UCM because of the advisor and the project. The same advisor's connections to LLNL led her to apply for the postdoctoral fellowship. The application process helped her develop valuable skills that boosted her confidence. She felt warmly welcomed at LLNL, whose open-door policy helped her find role models and mentors. Ms. Moreland trained weekly for one year to become a certified operator of one of 14 accelerator mass spectrometers in the U.S., using data from soil she collected herself. Her research revealed 20,000-year-old soil carbon. She competed with staff scientists and other postdoctoral researchers for funding from the Lab Directed Research and Development Program. Ms. Moreland was mentored by her research group, and her proposal placed second and earned her a position in the program. She mentored UCM students through this postdoctoral project and would continue to collaborate with UCM researchers and students. She thanked the University for helping her get to this moment and for helping her discover her life's mission.

Committee Chair Zettel asked if more research on wildfires, which appeared to be worsening, was anticipated. Ms. Maldonado responded in the affirmative. UC faculty and external reviewers peer-reviewed the projects proposed to the Program. She noted the interdependence among climate change, wildfires, and the COVID-19 pandemic. There was a concern about the impact of wildfire smoke on COVID-19 patients, as well as how

smoke made people more vulnerable to contracting COVID-19.

Faculty Representative Gauvain asked whether undergraduate students participated in these research projects. Ms. Maldonado responded in the affirmative. Undergraduate research helps attract students to graduate studies and effectively prepares students for the discipline they are studying. Mr. Leasure added that all three UC National Laboratories had rich undergraduate programs. This summer, these National Laboratories used a mostly virtual approach to work with as many students as possible, and they looked forward to welcoming students to the facilities after the pandemic.

Regent Muwwakkil asked how many graduate and undergraduate students were engaged through fellowships and how this had been affected by the pandemic. LANL brought in 1,800 undergraduate and graduate students last year, as well as 500 postdoctoral researchers. Before the pandemic, LLNL brought in 800 to 1,000 undergraduate and graduate students, as well as several hundred postdoctoral researchers. Lawrence Berkeley National Laboratory had about 500 postdoctoral researchers and about 800 students. The number of students at a National Laboratory was determined by the staff available to mentor them. Committee Advisor and UC Davis Professor Robert Powell added that, this year, about 900 students participated in LANL's virtual programs, which were met with much student enthusiasm. About 500 students participated in LLNL's virtual programs, a decrease of 50 percent. Both National Laboratories hoped to bring these students back for in-person programs next year. National Laboratory staff were enthusiastic about working with students all year.

Provost Brown asked Ms. Moreland to share what mentorship meant to her, as well as how her work reflected efforts to build and diversify the pipeline for future scientists. Ms. Moreland stated that she did not have role models growing up. Her advisor and professor at UC Merced, Professor Asmeret Berhe, worked to diversify the University and was her role model. At LLNL, Chief Scientist Roger Aines and Staff Scientist Karis McFarlane showed her how to develop a mission and to follow it. Role models helped her determine the person Ms. Moreland wanted to be, the work she wished to do, and the instruments to use. They helped her find her own voice.

Ms. Maldonado asked Ms. Moreland to speak about the accelerator mass spectrometer that she had been trained to use. Ms. Moreland stated that this was a very large and highly complex piece of equipment, and its operation was selective. She was the only woman among the six or seven people at LLNL who were certified to do so.

Regent Makarechian asked if participation in the Program was limited to UC students only. Mr. Leasure replied that each National Laboratory had a student program, and any student in the world could apply. This was a great pipeline for the National Laboratories, and students who had participated in the Program, many of whom were UC students, returned to their campuses and shared their good experiences with their peers. Graduate student participants could potentially become postdoctoral researchers and later work at the National Laboratories, campuses, or in the industry.

Regent Makarechian asked how costs were covered for students in the Program. Mr. Leasure replied that students in the Program were paid, but he would need to check whether students were reimbursed for transportation or relocation. Students were paid well, and the Program gave them an opportunity to work in the area and be mentored by experts. The National Laboratories strived to have a diverse group of participants. Ms. Moreland added that the Program paid much more than her teaching assistant position or a previous researcher position. Because of the Program, she was able to afford housing, food, and other expenses. She felt that she had the financial foundation to be successful.

President Drake expressed his wish that Ms. Moreland make a presentation regarding soil sequestration of atmospheric carbon at a future Regents meeting.

The meeting adjourned at 11:40 a.m.

Attest:

Secretary and Chief of Staff