

The Regents of the University of California

**COMMITTEE ON OVERSIGHT OF THE
DEPARTMENT OF ENERGY LABORATORIES**

November 20, 2014

The Committee on Oversight of the Department of Energy Laboratories met on the above date at UCSF–Mission Bay Conference Center, San Francisco.

Members present: Regents Atkins, De La Peña, Kieffer, Newsom, Pattiz, Reiss, and Sherman; Ex officio members Napolitano and Varner; Advisory member Gilly

In attendance: Regents Engelhorn, Island, Leong Clancy, Makarechian, Ortiz Oakley, Pérez, Ruiz, Saifuddin, and Torlakson, Regents-designate Davis, Gorman, and Oved, Faculty Representative Hare, Secretary and Chief of Staff Shaw, General Counsel Robinson, Chief Compliance and Audit Officer Vacca, Provost Dorr, Executive Vice President and Chief Financial Officer Brostrom, Senior Vice Presidents Dooley and Stobo, Vice Presidents Budil, Duckett, Lenz, and Sakaki, Chancellors Block, Blumenthal, Gillman, Hawgood, Katehi, Wilcox, and Yang, and Recording Secretary McCarthy

The meeting convened at 11:15 a.m. with Committee Chair Pattiz presiding. He informed the Regents that Bret Knapp, recently Interim Director of the Lawrence Livermore National Laboratory (LLNL), former Principal Associate Director of the Los Alamos National Laboratory, and longtime UC employee, passed away November 18. Mr. Knapp was an exceptional leader and a renowned national expert in stockpile stewardship; his loss will be felt deeply.

1. APPROVAL OF MINUTES OF PREVIOUS MEETING

Upon motion duly made and seconded, the minutes of the meeting of September 18, 2014 were approved.

2. UPDATE ON THE DEPARTMENT OF ENERGY LABORATORIES AND PRESENTATION ON LAWRENCE LIVERMORE NATIONAL LABORATORY: SCIENCE AND TECHNOLOGY ON A MISSION

[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.]

Committee Chair Pattiz stated that on October 21 United States Secretary of Energy Moniz visited the Lawrence Berkeley National Laboratory (LBNL). LBNL Director Alivisatos provided him a comprehensive overview of the Laboratory's mission, scientific programs, and accomplishments. Retired General Kevin Chilton, former

Commander of the U.S. Strategic Command, has been appointed as an Independent Governor on the Board of Governors of Lawrence Livermore National Security, LLC (LLNS). General Chilton fills the LLNS Governor position vacated by retired General John Gordon last year.

Committee Chair Pattiz introduced William Goldstein, Director of Lawrence Livermore National Laboratory (LLNL) and President of the LLNS, who would update the Regents on LLNL's broad scientific contributions along with the rich relationship between the LLNL and the University in fields including nuclear stockpile security, alternative energy, climate change, and advances in medical research. Mr. Goldstein leads a workforce of approximately 6,300 employees and manages an annual operating budget of approximately \$1.5 billion.

Mr. Goldstein expressed appreciation for the service of Mr. Knapp to LLNL, LANL, and the nation. Mr. Goldstein observed that LLNL embodies qualities instilled through its UC founders: a focus on big science, execution through multi-disciplinary teams, and a commitment to national impact. These ideals continue to drive LLNL, from its aspirations to its organizational chart. The Laboratory's mission is to provide solutions to national security challenges based on science, technology, and engineering. That mission requires that the Laboratory remain in the forefront of scientific inquiry and calls for the rigor and integrity of the scientific method. Its mission of stockpile stewardship is carried out by rigorously challenging hypotheses with experiments, driving the major capabilities that distinguish the Laboratory, particularly high-performance computing and simulation using the world's most powerful computers and experimental science at the most extreme conditions made possible by facilities like the National Ignition Facility (NIF). LLNL's ability to ensure the nation's strategic deterrent depends on demonstrating clearly and openly the quality and rigor of its science through participation with and review by the scientific community. The Laboratory's capability in computing and simulation powers almost all its endeavors, including work on climate change, nonproliferation, drug discovery, and cybersecurity. The United States Secretary of Energy recently announced plans to locate the next-generation supercomputer at LLNL. Called Sierra, the computer is scheduled to arrive at LLNL in 2017 and, with processing capability of 200 petaflops, will be five to seven times more powerful than LLNL's current record-holding supercomputer, Sequoia. The work being done on NIF, creating matter under extreme conditions, is defining a new scientific discipline, high energy density physics, done in collaboration with a number of UC campuses. NIF is evolving into a scientific user facility with a growing international base of participants, a new role for LLNL, critical for its future.

The UC faculty groups working at LLNL bring their students, who often remain to work at the Laboratory. More than 30 percent of LLNL's scientific staff have UC degrees. LLNL's collaborations with the University easily dwarf those with other academic institutions. In the challenging environment for workforce recruitment and retention in the Bay Area, this aspect of the Laboratory's UC connection is of tremendous strategic value. Mr. Goldstein said the UC Fee Program is very helpful in connecting LLNL researchers with UC researchers. He cited the example of the successful proposal by the

UC Berkeley Nuclear Engineering Department to establish the National Science and Security Consortium (NSSC), funded by the National Nuclear Security Administration (NNSA) with \$5 million per year for five years. An important function of the NSSC is to train future nuclear scientists.

LLNL must anticipate unexpected and potentially disruptive developments in science and technology that could affect national security, requiring exploratory research at the frontiers of scientific disciplines. Three new directions for LLNL, building on existing core strengths, are in the fields of materials and advanced manufacturing, biosecurity, and big data. LLNL would rely increasingly on partnerships with industry and universities. The Livermore Valley Open Campus (LVOC) is a key element of LLNL's strategy to expand collaboration with academia and industry. LVOC's High-Performance Computing Innovation Center provides access to expertise and resources at LLNL to local and national companies. The LVOC will be an invaluable tool in future recruitment. The NNSA Cyber Defenders program is helping develop the cybersecurity workforce of the future.

Element number 116, named Livermorium, the heaviest and most recently discovered element on the periodic chart, represents discovery science performed by nuclear scientists from LLNL, almost all of whom were trained at UC Berkeley, in collaboration with Russian scientists.

Vice President Budil emphasized the native connection between UC and the National Laboratories.

The meeting adjourned at 11:45 a.m.

Attest:

Secretary and Chief of Staff