The Regents of the University of California

COMMITTEE ON OVERSIGHT OF THE DEPARTMENT OF ENERGY LABORATORIES
July 17, 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 De La Peña, Reiss, Sherman, and Zettel; Ex officio members Napolitano and Varner; Advisory member Gilly

In attendance: Regents Engelhorn, Island, Kieffer, Lansing, Lozano, Makarechian, Ruiz, Saifuddin, Torlakson, and Wachter, Regents-designate Davis, Gorman, and Oved, Faculty Representative Jacob, Interim Secretary and Chief of Staff Shaw, General Counsel Robinson, Chief Compliance and Audit Officer Vacca, Chief Investment Officer Bachher, Provost Dorr, Executive Vice President and Interim Chief Financial Officer Brostrom, Senior Vice Presidents Dooley and Stobo, Vice Presidents Brown, Budil, Duckett, Lenz, and Sakaki, Chancellors Block, Blumenthal, Hawgood, Katehi, Wilcox, and Yang, Interim Chancellor Gillman, and Recording Secretary McCarthy

The meeting convened at 10:15 a.m. with Committee Vice Chair De La Peña presiding.

1. **APPROVAL OF MINUTES OF PREVIOUS MEETING**

Upon motion duly made and seconded, the minutes of the meeting of May 14, 2014 were approved.

2. **UPDATE ON THE DEPARTMENT OF ENERGY LABORATORIES AND PRESENTATION ON ATHENA PROJECT**

[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 Budil introduced Los Alamos National Laboratory (LANL) senior scientist Rashi Iyer, Director of its Bioengineering Systems Program, to discuss the Advanced Tissue-engineered Human Ectypal Networks Analyzer (ATHENA) project to create surrogate human organs that could revolutionize the development of new drugs and assessment of toxic agents' effects. LANL is the lead laboratory in this five-year, $19 million multi-institutional collaboration including researchers from UCSF and supported by the Defense Threat Reduction Agency of the Department of Defense.

Ms. Iyer stated that the ATHENA project's goal is to develop an artificial human with complete interconnected organ systems that could be used for the rapid testing of

pharmaceuticals and toxins. This holistic, dynamic system simulating human physiology would provide a cost-effective alternative to animal studies for rapid, high-throughput screening, greatly increasing chances of clinical success, and saving billions of dollars in research and development. The ATHENA platform would be the size of a laptop computer with organs the size of a credit card. This new technology could address the severe limitations in the current pipeline technology used for research and development of drugs. Currently, moving a drug from discovery to the end user takes 12 to 15 years, and costs about $2 billion, with only a five percent success rate. Animal studies cannot always be extrapolated to human responses.

The ATHENA project has developed an artificial lung at LANL and a simulated heart is being built in collaboration with the Wyss Institute for Biologically Inspired Engineering at Harvard University. This simulated heart responds like a human heart and can be monitored in real time to determine its reaction to different drugs. Replicating the complexity inherent in human systems is extremely difficult.

Ms. Iyer said the future course of the ATHENA Project would be to build the remaining major organs, a circulatory system, and a blood system, then monitor ATHENA in real time, test, and validate its systems. Dialogue would be initiated with the regulatory agencies. This complex effort requires expertise at many levels; UCSF is one of the project's main collaborators. ATHENA would contribute to world health by enabling faster development of drugs to combat disease, aiding vaccine development, developing medical countermeasures for threat agents, and advancing personalized medicine and the fundamental understanding of disease models at a level never before achieved.

Committee Vice Chair De La Peña asked whether a simulated brain would be developed for ATHENA. Ms. Iyer responded that the first five years of the ATHENA project would focus on four organs that are classic targets for drugs: lung, heart, kidney, and liver. There are parallel efforts to develop a brain barrier and neural-interfaces that could potentially be integrated into the ATHENA system.

3. **RESOLUTIONS TO EXCLUDE ACCESS TO FEDERAL CLASSIFIED INFORMATION**

The President of the University recommended that the three resolutions pertaining to the University's Department of Defense Facility Security Clearances be approved, as shown in Attachments 1 through 3.

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Committee Vice Chair De La Peña stated that this routine action was to conform to Regents' policy on security clearance for access to federally classified information and proposed adoption of exclusion resolutions for Regent Leong Clancy, Regent Engelhorn, and Regent Saifuddin. With the Board's approval, these Regents would be excluded from all access to classified information and/or special nuclear material, and would not

participate in any decisions or other matters pertaining to the protection of classified information and/or special nuclear material.

Upon motion duly made and seconded, the Committee approved the President's recommendation and voted to present it to the Board.

The meeting adjourned at 10:30 a.m.

Attest:

Interim Secretary and Chief of Staff

ATTACHMENT 1

RESOLUTION

Pursuant to the *Policy on Security Clearance for Access to Federal Classified Information* adopted on March 29, 2012 and this Resolution, the following named member of the Board of The University of California shall not require, shall not have, and can be effectively excluded from access to all classified information and/or special nuclear material released to the Regents of the University of California until such individual is granted the required access authorization from the cognizant security agency. And, as a consequence of this Resolution, such individual does not occupy a position that would enable her to adversely affect the policies or practices of the University of California, or its subsidiary, regarding the performance of classified contracts for the United States Government.

NAME	TITLE
Karen Leong Clancy	Regent

ATTACHMENT 2

RESOLUTION

Pursuant to the *Policy on Security Clearance for Access to Federal Classified Information* adopted on March 29, 2012 and this Resolution, the following named member of the Board of The University of California shall not require, shall not have, and can be effectively excluded from access to all classified information and/or special nuclear material released to the Regents of the University of California until such individual is granted the required access authorization from the cognizant security agency. And, as a consequence of this Resolution, such individual does not occupy a position that would enable him to adversely affect the policies or practices of the University of California, or its subsidiary, regarding the performance of classified contracts for the United States Government.

NAME	TITLE
Sheldon Engelhorn	Regent

ATTACHMENT 3

RESOLUTION

Pursuant to the *Policy on Security Clearance for Access to Federal Classified Information* adopted on March 29, 2012 and this Resolution, the following named member of the Board of The University of California shall not require, shall not have, and can be effectively excluded from access to all classified information and/or special nuclear material released to the Regents of the University of California until such individual is granted the required access authorization from the cognizant security agency. And, as a consequence of this Resolution, such individual does not occupy a position that would enable her to adversely affect the policies or practices of the University of California, or its subsidiary, regarding the performance of classified contracts for the United States Government.

NAME	TITLE
Sadia Saifuddin	Regent