

The Regents of the University of California

**COMMITTEE ON EDUCATIONAL POLICY**

September 22, 2005

The Committee on Educational Policy met on the above date at UCSF-Laurel Heights, San Francisco.

Members present: Regents Dynes, Island, Johnson, Kozberg, Lozano, Marcus, Moores, Parsky, Rosenthal, Ruiz, and Sayles; Advisory members Coombs, Ledesma, Schreiner, and Brunk, and Staff Advisor Bell

In attendance: Regents Gould, Hopkinson, Juline, Rominger, and Schilling, Faculty Representative Oakley, Secretary Trivette, General Counsel Holst, Interim Treasurer Berggren, Provost Greenwood, Senior Vice Presidents Darling and Mullinix, Vice Presidents Broome, Gomes, Hershman, and Hume, Chancellors Birgeneau, Bishop, Carnesale, Córdova, Denton, Drake, Fox, Tomlinson-Keasey, Vanderhoef, and Yang, and Recording Secretary Nietfeld

The meeting convened at 9:25 a.m. with Committee Chair Kozberg presiding.

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

Upon motion duly made and seconded, the minutes of the meeting of July 20, 2005 were approved.

**2. PRESENTATION ON THE RESEARCH ENTERPRISE AT THE UNIVERSITY OF CALIFORNIA**

Provost Greenwood recalled that, under the Master Plan for Higher Education, the University of California has been designated as the state's primary academic agency for research. In a knowledge-based economy, competitiveness depends on discovery, innovation, and a highly educated workforce. The University has a tripartite mission of research, teaching, and public service. As President Dynes has remarked, the University's faculty are creators of knowledge through their research, and they educate the next generation of creators through their teaching. The University's contributions are for the public benefit, which is an important part of the service component of a public research university. Provost Greenwood observed that UC is a complex, multi-dimensional organization. To accomplish all three parts of its mission, the University has built an unparalleled research infrastructure that provides the tools of scholarship for its faculty, staff, and students. Without a robust research infrastructure, the University would be unable to sustain its world-class scholarship.

Provost Greenwood explained that the University of California is the largest research enterprise in the world, with annual expenditures of \$3 billion, excluding the Department of Energy laboratories. The research enterprise is funded in large part by the federal

government at 57 percent and by industry, foundations, gifts, and endowments (27 percent). While the State contributes only 16 percent of research funding, it also funds faculty salaries, which is a major contribution to the research enterprise. Without first-rate faculty, the University would not be able to attract this magnitude of funding for research. Provost Greenwood observed that research is performed by faculty, students, and staff working together: 11,175 Senate faculty, 3,200 adjunct and clinical faculty, over 20,000 research-related staff, 5,700 postdoctoral fellows and visiting scholars, 24,000 doctoral students, and 25 to 40 percent of undergraduates.

University research takes place in a wide variety of locations, including laboratories, libraries, museums, the Natural Reserve System, and the academic medical centers. There are over 10.5 million square feet of research space on the campuses, some of which is either being replaced or corrected for seismic deficiencies. Provost Greenwood commented on the importance of the access to information that is provided by libraries and digital resources. The University of California plays a leading role in the California Digital Library, which provides on-line access to scholarly materials. Due to budgetary constraints, campus libraries have not been able to maintain their collections at the same level of many peer institutions. The California Digital Library is intended to address this problem by bringing collections together to reduce duplication. The University's combined holdings exceed the collection of the U.S. Library of Congress.

Provost Greenwood discussed the University's museums and collections, which are repositories for hands-on knowledge and information. For example, the Bohart Museum of Entomology contributes to the state's economy by conducting research on threats such as Pierce's disease. As part of its outreach to the community, the Fowler Museum of Cultural History hosts visits from over 100 area schools, 70 percent of which are severely underfunded. The academic medical centers also play a significant role in the University's research enterprise, conducting over 750 clinical trials annually.

The Division of Agriculture and Natural Resources administers the statewide Cooperative Extension program, which delivers the results of agricultural research to the public. The Natural Reserve System is one of the largest of such systems in the world, with 35 reserves comprising 230 square miles. These protected natural areas support cutting-edge research on California's ecology.

Provost Greenwood observed that while the University's governance structure is largely based in departments, the approach to research is changing rapidly as it becomes more collaborative and interdisciplinary. Many of the most challenging problems can be addressed only by teams of scholars from different disciplines. The California Institutes for Science and Innovation, established by Governor Davis, are one example of this approach. The four institutes involve faculty from UC campuses and from other institutions around the country. A particular strength of the ten-campus system is represented by the Multicampus Research Units, which allow faculty and students to collaborate with ease. The MRUs leverage approximately \$30 million of State funding into over \$100 million in total research

funding. Examples include the Institute of Geophysics and Planetary Physics and the Institute for Complex Adaptive Matter. Multicampus Research Units in the humanities and social sciences include the University of California Institute for Mexico and the United States, which is headquartered on the Riverside campus. UC-MEXUS supports research related to California and Mexico, and it facilitates research exchanges between UC faculty and their Mexican counterparts. The Humanities Research Institute convenes residential groups on a wide range of interdisciplinary subjects. Faculty and students also come together on individual campuses through centers, institutes, and organized research units.

Provost Greenwood observed that the University has evolved into a complex, networked institution. The research infrastructure is crucial to attracting and retaining faculty, recruiting the most talented students, and keeping California competitive.

Provost Greenwood confirmed for Regent Blum that most ladder-rank faculty are supported directly by State funds. President Dynes added that faculty members often supplement their nine-month academic salaries with contracts and grants that support their research during the summer.

Regent Johnson suggested that Provost Greenwood's presentation be used as the basis for an informational brochure on the University's research enterprise. She noted that the Provost had commented on interdisciplinary research and asked about collaborations with faculty at other institutions, such as the California State University. Provost Greenwood stated that it would be possible to quantify how much collaborative research is taking place. Faculty Representative Brunk commented that for the past twenty years he had worked collaboratively with a faculty member from CSU Northridge. He noted that CSU's research effort is solely in support of its teaching function. Regent Rominger stressed the importance of these collaborations to the agricultural community.

In response to a question from Committee Chair Kozberg regarding "pure" versus "applied" research, Provost Greenwood observed that such a distinction may have existed in the post-World War II era, but today it has less meaning. Tools may be developed in the applied area that become critical to the next round of basic discovery in other fields, but it is rare to define research strictly as applied.

President Dynes pointed out that the best way to teach the creative process is to get students involved in research in order to transmit the nature of innovation to them. The University of California has put a special emphasis on making the research experience available to undergraduates.

Regent-designate Coombs suggested that the intellectual capital described by Provost Greenwood could be used by the Regents and others to solve some of the issues under discussion. He believed that the University needs to do a better job of informing the citizens of California about the resources that are available to them and to leverage those resources when negotiating in Sacramento. Regent-designate Coombs commented on the importance

of undergraduate research in recruiting outstanding students to apply to UC. Provost Greenwood pointed out that the University is able to offer this opportunity, particularly in the sciences and engineering, because research projects are made up of teams that include faculty members, postdoctoral fellows, and graduate and undergraduate students. When the University's graduate program is restricted to its current size, there are fewer opportunities for undergraduates to participate in research. She noted that the majority of funding for the advanced equipment that is used to train students is obtained by the faculty through a competitive process to acquire resources through grants. The State is no longer able to fund this equipment, and federal support is shrinking.

Regent Lozano raised the issue of the ownership of intellectual property when research is supported by private funds. Provost Greenwood explained that when research is federally funded, the intellectual property is owned by the institution. The University has a mechanism for technology transfer into the public sector, and there are regulations that define how any profits from an invention are distributed to the University and to the inventor. She agreed to provide a brief description of how this process works, as well as the current challenges that exist.

Regent Parsky stressed the need for long-term planning and the importance of having resources available to continue the University's research mission. In order to maintain quality, the University must be competitive with respect to faculty compensation and affordability for students.

Committee Chair Kozberg asked about the effects on the research enterprise of restrictions on foreign students coming to study in the United States. Provost Greenwood agreed that this is a cause for concern. A group is studying professional and graduate education in particular, as these areas are affected the most. The group will issue a report by the end of the academic year. Faculty members continue to collaborate internationally by traveling abroad to conduct their research. President Dynes added that Governor Schwarzenegger had described the University as a "net brain gain" to the State of California. Traditionally, California has benefited from attracting the finest minds from throughout the world. The 2005-06 budget will contain elements that will help to make the University more attractive to international scholars.

Regent Rominger recalled that several years ago the Legislature had passed an agricultural research initiative which provided funding to the California State University system. CSU sees the decline in the number of staff employed by Cooperative Extension as an opportunity to make inroads in this area, which appears to be in conflict with the University's role under the Master Plan.

Regent Rosenthal pointed out that faculty are attracted to the University of California not by high salaries but by the research capabilities. There is value added to this attraction by the size of the campuses and the size of the University. To lose sight of this fact would be a disservice to the University of California. While Provost Greenwood agreed with his

remarks, she also cautioned that the research infrastructure does not have a secure funding base. It is in large part supported by the faculty and the friends of the University. With excellent faculty, there is a high probability that they will be successful in obtaining funding for their research, but maintenance of this funding is essential to attracting faculty to the University.

In response to a question from Regent Ruiz regarding which areas of research to pursue, Provost Greenwood explained that ideas are generated by individual faculty members who apply to a national agency or private foundation for a grant. In other instances they may respond to a Request for Proposal. She noted the broad collaboration among farmers, growers, and scientists in the area of agricultural research. Vice Provost Coleman continued that many times a State agency or members of the Legislature will approach faculty about a problem that needs to be addressed.

Regent Marcus asked what actions the Regents might take to foster the research enterprise. President Dynes observed that the first step is to assemble the brightest people in a variety of fields and then to ensure that they know of each others' work. Provost Greenwood observed that the core funding that comes from the State, as well as the contributions from the private sector, are critical to sustaining high-quality research. The Regents must help the University to protect the core. It is frequently the case that, during difficult budgetary times, the Legislature cuts funding for research before it reduces support in any other area. There is a constant erosion of support for the research infrastructure.

Faculty Representative Oakley observed that there are three elements to a successful research program: tools, time, and intelligence. The Regents can play a crucial role by providing competitive faculty compensation that will attract and retain the best minds and by ensuring that the faculty have teaching loads that do not impact their research.

The meeting adjourned at 10:25 a.m.

Attest:

Secretary