

The Regents of the University of California

**COMMITTEE ON EDUCATIONAL POLICY**

July 18, 2002

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

Members present: Regents Atkinson, Connerly, Johnson, Kozberg, Lansing, Lozano, Marcus, Moores, Sainick, Sayles, and Terrazas

In attendance: Regents Davies, Hopkinson, Lee, Ligot-Gordon, Montoya, and Preuss, Regents-designate Bodine and Seigler, Faculty Representatives Binion and Viswanathan, Associate Secretary Shaw, General Counsel Holst, Treasurer Russ, Provost King, Senior Vice Presidents Darling and Mullinix, Vice Presidents Drake and Hershman, Chancellors Berdahl, Córdova, Tomlinson-Keasey, Vanderhoef, and Yang, Executive Vice Chancellor Kelly representing Chancellor Bishop, Vice Chancellor Michaels representing Chancellor Greenwood, and Recording Secretary Nietfeld

The meeting convened at 11:00 a.m. with Committee Chair Kozberg presiding.

**GRADUATE AND PROFESSIONAL SCHOOL OUTREACH**

The Committee was informed that the University of California offers over 600 graduate and professional school degree programs and produces about 7 percent of the Ph.D. degrees awarded nationally. An important outreach activity for graduate and professional school programs is an undergraduate research experience. According to a recent survey conducted by the Office of the President, 32 percent of undergraduates have worked on a research project with a faculty member by the time they are seniors. Apart from regular coursework, UC undergraduates have opportunities at all nine campuses to be mentored by faculty, postdoctoral scholars, and graduate students through academic-year and summer internships, independent study, research conferences, journal submissions, and other specialized campus activities. An average of 10.5 percent of UC undergraduate baccalaureates eventually earn either a Ph.D. or M.D. degree, testimony to the long-term benefit of early exposure to research. The University enrolls approximately 39,000 graduate and professional school students.

Undergraduate students can learn first hand about graduate research in a closely mentored relationship with faculty and other research professionals. The opportunity to conduct undergraduate research exposes students, particularly those from disadvantaged backgrounds, to career directions they may not have considered previously. In recent years, UC's graduate academic programs, law schools, and medical schools have each had enrollments of over 10 percent underrepresented minority students. In fall 2001, the proportion of underrepresented minority students in graduate academic programs ranged from 17 percent of the graduate students in the social sciences to 6 percent of those in engineering and computer science. Underrepresented minorities constituted approximately 12 percent of new enrollments in UC's five medical schools

and 11 percent in UC's three law schools. These proportions have been fairly steady since fall 1997; previously, for medicine and law they had been consistently at or above 20 percent.

Campuses employ informational outreach and academic preparation programs to recruit students for graduate and professional school programs. Informational outreach involves identifying potential applicants and providing encouragement and information for these students to consider graduate studies at UC. Campus outreach officers and faculty host informational forums and campus visits, travel to colleges and universities throughout the country, and meet promising undergraduates at educational and research conferences. Academic preparation programs help undergraduates hone their academic skills to succeed in courses that are prerequisite to graduate studies. In many cases, students who have faced educational adversity due to an inadequate school environment or poverty or who have not received support to excel educationally need assistance to become competitive for admission to graduate or professional school studies.

Provost King invited Professor Beth Burnside, Vice Chancellor for Research at the Berkeley campus, to discuss the undergraduate research experience in the context of outreach. Vice Chancellor Burnside observed that a UC undergraduate student may arrive at the decision to pursue graduate study by a number of different paths. Some students are exposed to research in the classroom through their professors and make the commitment to become faculty themselves, while others are sought out by campus outreach officers. The most likely path to lead an undergraduate into graduate school, however, is involvement in undergraduate research. UC has a long tradition of encouraging its students to do research. There are several programs that fund undergraduate participation in faculty research at Berkeley, including the Undergraduate Research Apprentice Program. Last year 473 students conducted research under the mentorship of 162 faculty in 45 departments on campus. Some programs of note that directly fund students include the McNair Scholars Program, the Haas Scholars Program, and the Biology Fellows Program. Almost all Berkeley departments offer the option of an honors thesis to outstanding undergraduates. In preparation for the thesis, students engage in the challenge of conducting sustained research or field study. In addition, many departments offer courses that contain research components. At Berkeley, the venues for the publication of research findings are provided by several undergraduate research journals. Speaking as a professor and research scientist, Vice Chancellor Burnside described some of her personal experiences with undergraduate students in her laboratory.

## **UC LEADS**

The Committee was informed that the University enrolls fewer than 200 underrepresented minority students each year in science, mathematics, and engineering doctoral programs, about 50 of whom typically come from UC undergraduate programs. In 2000, the University launched UC LEADS, the University of California Leadership Excellence through Advanced Degrees program, to serve educationally or economically disadvantaged juniors and seniors. The program places 148 scholars in two-year intensive research experiences, including one summer at their home campus and one summer at another UC campus. In addition to receiving sustained faculty mentorship in a research setting, scholars also participate in test preparation, fellowship writing workshops, and a range of other activities that prepare them to apply to and succeed in graduate school.

A highlight of each academic year is the UC LEADS Symposium, at which scholars and mentors from all campuses meet as an intellectual community. Scholars share the results of their research in poster presentations, attend workshops relevant to graduate study, and tour campus laboratories. UC faculty and special guests have favorably evaluated the quality of the scholars' research presentations and their academic progress. UC LEADS scholars have also presented their research at national conferences and have earned first-place awards at the Annual Minority Biomedical Research Support Symposia and the Annual Meeting of the American Association for the Advancement of Science. Four scholars have been published as co-authors of scientific articles.

Thirty-nine UC LEADS scholars graduated in spring 2002. Of these, 23 have applied for graduate school admission for fall 2002, and the others intend to apply next year. Nineteen scholars have been accepted to doctoral programs for the 2002-03 year, and 16 of these will enroll in UC graduate programs.

Mr. Jason Bowen, a recent graduate of the Riverside campus, described his experiences with the UC LEADS program. He recalled that he had always been gifted in mathematics but that he had lacked direction in his studies because no one had taken the time to help him to develop his academic talents. He enrolled in Morehouse College as a freshman but flunked out after his first year. He returned to California and began attending Riverside Community College. Five years later, he was able to transfer to UC Riverside, where he was encouraged to become a UC LEADS scholar. Mr. Bowen reported that this program had had a tremendous impact on his life, leading to his acceptance into a Ph.D. program at the Berkeley campus. He described his experience working at the Lawrence Berkeley National Laboratory during the summer, where he met many physicists and secured a pivotal letter of recommendation to Berkeley. He continues to work in the laboratory of former Riverside Chancellor Orbach. The UC LEADS program supports this research and has also funded his participation at two conferences of the American Physical Society. He summarized the ways in which UC LEADS had assisted him in gaining acceptance at Berkeley.

### **THE POSTBACCALAUREATE REAPPLICANT PROGRAMS**

Vice President Drake informed the Committee that California ranks 38th nationally out of the 46 states with medical schools in the number of medical school slots per capita. Each of UC's medical schools receives approximately 5,000 applications per year for class sizes averaging 125 spaces. Reviewing far more qualified applicants than can be admitted, medical school admissions committees are forced to turn down numerous applicants whose qualifications fall just short. The Postbaccalaureate Reapplicant Programs serve this group of students by preparing them to be successfully admitted the second time they apply to medical school. Students have an opportunity to take additional science courses, to participate in academic skills-building and test preparation seminars, and to gain a better understanding of the medical school application process. The programs target students from educationally or economically disadvantaged backgrounds and students whose career intention is to become physicians in areas of California that are medically underserved. In 2001-02, seventy students are participating in the five UC Postbaccalaureate Reapplicant Programs.

The Postbaccalaureate Reapplicant Program begins in the summer. At UCLA, the summer session includes professional development sessions, individualized counseling, and site tours of the health care delivery system. At UC San Diego, the summer includes a premedical clinical correlate designed to expose students to the relevance of integrating the basic medical sciences to the practice of medicine and to facilitate improved reading speed and efficiency strategies. During the academic year, participants complete science courses, work on medical school applications, and participate in clinical training sessions.

At the San Francisco campus, the program consists of an MCAT review course, a study-skills assessment, an application preparation workshop, a weekly health-care issues colloquium, and at least one mentoring session with a senior faculty member. Medical students teach the MCAT review course, which provides an opportunity for informal mentoring. During the fall and spring semesters, the students take at least four upper-division science courses at San Francisco State University.

The program at UC San Francisco illustrates its success systemwide. Now in its third year, the program serves ten to fifteen students annually. Of the individuals who participated in 1999, nine out of twelve are enrolled in medical school. One student has just completed the application process and has received two acceptances, while another is completing her Master in Public Health (M.P.H.). In 2000, five of the eleven participants are enrolled in medical school and one is enrolled in an M.P.H program. Of the three who are still in the application process, two have been accepted to medical school. Program evaluations indicate that the Postbaccalaureate Reapplicant Program has made a significant impact on participants. Eighty percent of the participants at Irvine, 87 percent of those at San Diego, 72 percent at Davis, 74 percent at San Francisco, and 63 percent at Los Angeles have entered medical school. Vice President Drake observed that the success of the program results from the quality of the students who enroll and the dedication of the staff.

#### Other Outreach Programs and Activities

During the academic year, campuses have numerous special research programs that enable undergraduates to obtain research experience. For example, the University is awarded approximately thirty grants each year from the National Science Foundation's Research Experiences for Undergraduates Program. All campuses have established summer research internship programs for students interested in doctoral study. These eight- to ten-week programs introduce students to a hands-on UC research experience; prepare them to be viable applicants by providing GRE preparation, financial support workshops and skills-building sessions; and immerse them in a graduate school setting, including direct interaction with faculty mentors, postdoctoral scholars, and graduate students.

Feedback from student participants now in UC doctoral programs shows that these programs give students a meaningful sense of what graduate school entails. Moreover, the programs can make a difference in the selection of a graduate program. In 1998, there were 306 participants in summer research internship programs at all campuses except Santa Cruz that are designed specifically for educationally or economically disadvantaged students. After three years of tracking 177

participants, 75 percent were enrolled in graduate or professional school programs, and another 12 percent were either applying to graduate school or were still completing their undergraduate degree.

In 1997-98, UCLA Law School began the Law Fellows Program, and 20 disadvantaged undergraduates participated in a series of monthly Saturday academies designed to improve their academic competitiveness for admission to top law schools. The program equipped talented and motivated students with academic preparation, skills building, counseling, test preparation, and mentorship. Since the Law Fellows Program was initiated, the number of participants has increased from 20 in 1997-98 to 87 in 2001-02 for a total of 270 over five years. The program has been expanded to the Irvine, Riverside, Santa Barbara, and San Diego campus, five California State University campuses, the University of Southern California, Occidental College, and National and Columbia Universities. The program engages students who may have had limited exposure to law studies to appreciate the viability of attending a top law school. Of the nearly seventy fellows who applied through 2002, approximately 90 percent have been admitted to at least one of their choices of law schools. Including the entering class of 2002, 17 of the 28 Fellows admitted to UCLA have enrolled there or will enroll next year. Four fellows are or will be attending the Boalt School of Law, Berkeley.

Campuses and departments have established a variety of activities and events to identify promising undergraduates and encourage them to consider graduate study at UC. Each April, the Deans for Graduate Studies at UC campuses, CSU campuses and most of the four-year independent colleges and universities in California host the California Forum for Diversity in Graduate Education, an all-day series of workshops and information sessions about graduate study. Faculty, graduate students, and administrators address a wide range of issues pertaining to preparation for graduate education. Over 100 representatives from graduate programs around the country and throughout the state are in attendance to talk to students about graduate education.

The University of California's five medical schools, in conjunction with California's private medical schools, hold pre-medical advising conferences in March and October. These conferences provide undergraduate student advisors at UC, CSU, and the community colleges with information on counseling students to prepare for medical school and an orientation on the UC medical school admissions process. Sessions include workshops on working with underrepresented students, good practices in advising students, and dispelling myths and roadblocks.

While graduate and professional school outreach tends to focus on college undergraduates, campuses have sought to develop interest and eligibility at the pre-college level. The medical schools provide after-school science enrichment programs to local elementary and middle schools and Saturday academies or summer programs to high school students thinking about health science careers. The UC law schools offer Street Law programs in several high schools.

UC is expanding its college-level outreach efforts throughout California, specifically with the California State University system and the California Community Colleges. CSU's California Pre-Doctoral Program helps eighty disadvantaged students each year to optimize their chances of being admitted to doctoral programs, and UC accepts these students into its summer research

internship programs. UCLA has taken the lead in designing outreach forums at the CSU campuses.

Through the NSF-funded Alliance for Graduate Education and the Professoriate Program, Graduate Divisions at UC campuses are working with the MESA Engineering Program, California Alliance for Minority Participation, and other undergraduate programs to increase the pool of UC undergraduates eligible for graduate programs in science, mathematics, and engineering.

Regent Johnson stressed that the University's K-12 outreach programs should provide information on post-baccalaureate programs such as UC LEADS.

Regent Connerly asked Mr. Bowen about any pressures or encouragement he may have received during his K-12 education. Mr. Bowen explained that his grandparents had encouraged his interest in science. No one recognized his gift in high school, but no one pressured him not to study.

In response to a question from Regent Sayles, Provost King reported that the annual cost of UC LEADS is \$562,000. He confirmed for Regent Sayles that the program could serve as a prototype for other colleges and universities.

In response to a further question from Regent Sayles regarding the recruitment of students from other California institutions, Assistant Vice President Switkes commented on several programs with the California State University, including a summer research program to encourage their students to enroll at UC for graduate study.

Regent Sayles asked how the University could make graduate education more attractive to underrepresented students. Mr. Bowen believed that children should be targeted when they are young.

Regent Terrazas pointed out that the University's law schools currently enroll fewer underrepresented students than they did in 1997, and he stressed how important it was that attention continue to be focused on outreach.

In response to a comment by Regent Hopkinson about the small size of the UC LEADS program, Ms. Switkes commented that it is expensive because it supports each student for two summers as they pursue their research. Because the program is so young, it is difficult to analyze its success. Vice President Drake reiterated the high success rate of the Postbaccalaureate Reapplicant Programs.

The meeting adjourned at 11:35 a.m.

Attest:

Associate Secretary